DENTAL OCCUPATIONS IN TRANSITION: BOUNDARY CONTESTATION AND CURRICULA FOR ORAL HYGIENISTS IN SOUTH AFRICA

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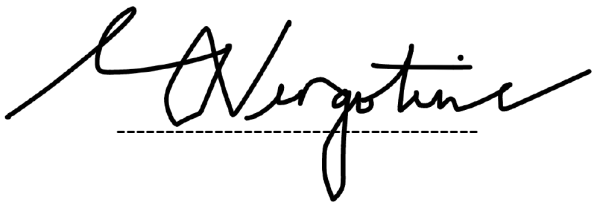
ABSTRACT

This study sought to understand how changes to the scope and autonomy of the oral hygiene occupation in South Africa have influenced relations among dental occupations. Over the past two decades, legislative advances in South Africa have sanctioned new possibilities for mid-level dental occupations such as oral hygienists, allowing them greater independence and additional procedures. The division of labour within the dental profession is that oral hygienists and dental therapists supplement the work that dentists do by offering some of the basic dental services. The changes to oral hygienists' scope and independence have initiated boundary contestations around the work and training of dental professionals. The qualitative study involved analysing relevant regulatory documents and included semi-structured interviews with representatives of professional bodies and regulatory bodies as well as practitioners and lecturers representing the three dental occupations, and curriculum analyses. A key empirical finding is that the regulatory changes have not been implemented and this is so not only because of contestations by dentists. The study highlights boundary contestations between dentists and oral hygienists. These contestations are about specific procedures in the expanded scope of practice and the opportunity for hygienists to practice independently. The study found that boundaries have been established from outside of the oral hygiene occupation by dentists, to control their work and training. Dentists' power is exhibited in the labour market and the education and training arena and provides justifications for why the official legislative changes in scope are not being implemented. Despite this, hygienists also place boundaries on themselves, so within the occupation, there are various ways in which hygienists limit their advancement. The hygienists are hesitant to perform certain procedures and have not opened independent practices. This suggests that pressure to narrow the scope and autonomy may not only come from outside of occupations but also from the inside of an occupation. The thesis shows a web of power relations between occupations and provides insights into a dominant occupation controlling the jurisdiction of subordinate occupations; but more unusually, it reveals the dynamics within the mid-level occupation that stifle its advancement.

Keywords: professionalisation, division of labour; autonomy, specialised knowledge, oral hygienist

DECLARATION

I declare that this thesis *Dental occupations in transition: Boundary contestation and curricula for Oral hygienists in South Africa* is my unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



Glynnis Vergotine

February 2023

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DEDICATION

For my husband, Hilton (your painting is done…)

ABBREVIATIONS

CMSA	Colleges of Medicine of South Africa
DHET	Department of Higher Education and Training
DoE	National Department of Education
DTASA	Dental Therapy Association of South Africa
HEI	Higher Education Institutions
HPCSA	Health Professions Council of South Africa
HR	Human Resources
HRH	Human Resources for Health
HRM	Human Resource Management
NDoH	National Department of Health
NQF	National Qualifications Framework
NSDS	National Skills Development Strategy
OHASA	Oral Hygienist Association of South Africa
SADA	South African Dental Association
SANC	South African Nursing Council
SAQA	South African Qualifications Authority
SMU	Sefako Makgatho University
UKZN	University of KwaZulu Natal
UP	University of Pretoria
UWC	University of the Western Cape
WHO	World Health Organisation
WITS	University of the Witwatersrand

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CHAPTER 1

INTRODUCTION AND STRUCTURE OF THE THESIS

1. EXPLORING DENTAL OCCUPATIONAL BOUNDARIES

> Every profession aims for a heartland of work over which it has complete, legally established control. This control should be legitimated within the culture by the authority of the profession's knowledge. It should be established in the law. It should determine the structure of a referral that brings work to the profession. It should shape, indeed, the very public idea of the tasks that the profession does. Every profession aims not only to possess such a heartland, but to defend and expand it. (Abbott, 1988, p. 71)

This thesis considers the relationship between education and work within the dental profession. This research is centred on the study of occupations, and in particular, the relations between different occupations and how these influence each other. Examining relations among occupations locates this thesis within the field of studies on occupational boundaries. This area of research highlights that boundaries are shaped due to jurisdiction over tasks both within and between occupations. Competition and conflict arise between occupations when one occupation tries to claim jurisdiction over the tasks of another. In the labour market, certain occupations take dominance in the social stratification system. The social and economic power given to occupations differ and have produced debates over the structure, relations, and boundaries of occupations. This study considers how such dominance is achieved by occupations, and how it is maintained or altered over time, arguing that the link between occupations, and their boundary contestations in the arenas of education and work begs investigation.

The scope of oral hygienists has expanded in South Africa, leading to an increase in tasks common for the three dental occupations of dentistry, dental therapy, and oral hygiene.

This has raised concerns about relations within the dental profession.[1] The two terms 'profession' and 'occupation,' are often used interchangeably, with several authors suggesting that the occupations can be regarded as professions. To understand how occupations are viewed as professions, the criteria include: self-regulation, a code of ethics, authority, public approval, a culture, and systematic knowledge (Abbott, 1988; Freidson, 1988, 2001; Winch, 2010; Young & Muller, 2014). According to Abbott (1988), control over work defines how occupations become professions. He suggests that to understand why professions evolve as they do, we have to know "where work comes from, who does it, and how they keep it to themselves" (Abbott, 1995, p. 224). Professions are often regulated through licensing, defined by professional bodies, and enforced by the State, while occupations are often used more broadly to describe work performed by a group of individuals.

This chapter introduces the context, main problem, rationale, and objectives of the study. It also provides an account of the prevalence and impact of oral diseases on global and local populations and how these affect the dental profession. Section 1.1 provides a synopsis of the development of three dental occupations. Section 1.2 describes dental service delivery in South Africa and the roles of dental occupations in achieving oral health. In Section 1.3, a brief historical overview of the development of the three dental occupations is outlined. Section 1.4 explains the relevance of dentistry in the broader health system. Section 1.5 provides a synopsis of work and education debates emanating from literature in the dental sector. Section 1.6 describes the problem addressed by this study. Section 1.7 details the study's overall aim and objectives. Finally, Section 1.8 indicates the structure of the thesis and provides a high-level summary of each chapter.

1.1 Locating the Dental Sector in the broader Health System

The dental sector makes up a small part of the broader healthcare system but is a vital sector for managing common oral diseases. This is because globally the prevalence of oral diseases is high, and these conditions affect the quality of life. The most common oral

[1] *In the study, I use 'dental profession' as an overarching term for the three dental occupations of dentists, dental therapists, and oral hygienists. This is to denote that the three occupations rely on specialised knowledge that defines each one separately, and which delineates their practices.*

diseases include dental caries (tooth decay), periodontal disease (gum disease), tooth loss, and cancers of the lips and oral cavity (Peres et al., 2019). Globally, the dental sector has been incapable of managing the high prevalence of oral diseases. In most situations, these diseases go untreated, because treatment costs are high, and dental systems easily become overburdened (Brocklehurst & Macey, 2015).

Watt et al. (2019) highlight several constraints in addressing oral diseases, claiming that there is a need for dental systems to reform. They indicate that, in developed countries, oral disease management remains treatment-focused, and uses advanced technologies and specialised interventions. These disregard the causes of disease and do not address the inequalities in the dental sector. In developing countries, on the other hand, dental services are often unavailable, unaffordable, and inappropriate to patient needs, particularly for the rural poor (Watt et al., 2019). Oral diseases affect mainly impoverished children, the aged, and socially marginalised groups (Peres et al., 2019). Peres et al. (2019) argue that oral diseases have been neglected in global health policy, and as such, should be given greater priority. The suggestion is that dentistry ought to be integrated into general health systems and focus on primary healthcare provision through universal health coverage to strive toward attaining equity in oral healthcare (Watt et al., 2019).

A crucial aspect of ensuring healthcare is the supply and demand factors that impact the costs of dental service provision. According to Brown (2012), several factors shape pricing for dental services. On the demand side, these include the prevalence and severity of oral diseases, population growth, economic conditions, private dental insurance, the government's provision of funds for services, and the public's awareness of their oral health. In terms of supply, pricing is affected by the number of oral health personnel, migration or relocation, and the availability of equipment and technology (Brown, 2012).

1.2 Dental Service Provision in South Africa

An ethical challenge is presented because of the disparity in dental care, where there is growing inequality in dental service delivery in South Africa. Expensive dental care cannot be afforded by the impoverished masses in the country, leading to the majority of the

population relying on public dental services. This is further complicated as more dental professionals want to work in the private sector as they will be compensated more greatly for the treatment they provide, whereas, fewer want to work in the public service. This has prompted the government in South Africa to introduce mid-level dental professionals[2] as a solution to servicing the public sector. The literature shows that the expansion and demand for private dental care through universal health coverage have become more widespread (Singh, 2014; Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008). The introduction of universal health coverage has also been in planning by the South African government (this is further discussed in section 1.5.3). With this, the expansion of the scope of dental therapists and oral hygienists (and other health care providers such as clinical associates and pharmacy assistants) was placed on the agenda.

Dental service provision forms part of the greater healthcare delivery system, across both the private and public sectors. There is a shortage and an imbalance of dental professionals in South Africa to offer dental services (Bhayat & Chikte, 2019; van Wyk & van Wyk, 2004; Vedan & Kotsane, 2016). Despite this, dentistry is practised mainly in the private sector, with professionals providing services to a very small, wealthy population. By contrast, in the public sector, dental services are provided by a small number of dental professionals (Bhayat & Chikte, 2019). This indicates that a majority of South Africans who are poor have limited access to dental care.

Dental service provision in South Africa is offered according to the primary health care approach on three levels, namely: primary, secondary, and tertiary services. Primary dental services comprise preventive procedures, which include a basic dental care package at no cost to the patient. This package includes oral examinations, radiographs, dental extractions and restorations, and antibiotic prescriptions offered mainly by dental therapists and oral hygienists[3] (National Department of Health, 2005). Secondary services are mainly curative and offered primarily by dentists and therapists in district hospitals. In this setting, both

[2] *Mid-level dental professionals will be used henceforth when referring to dental therapists and oral hygienists.*
[3] *In SA dental hygienists are known as oral hygienists to convey a broader view of their function (Potgieter, 2007a).*

primary and secondary services are undertaken with referrals from primary clinics, and additional procedures such as dentures, removable orthodontic appliances, and extractions of impacted teeth are performed. Tertiary services include specialised rehabilitative care provided by academic hospitals. These specialised services are rendered by dentists and dental specialists, and include orthodontics, prosthodontics, periodontics, and more (Bhayat & Chikte, 2019).

Even though these health policies are primarily founded on primary health care, dental services offered in the public sector focus mainly on the extraction of teeth for the relief of pain and sepsis (Bhayat & Chikte, 2019; Singh et al., 2010). Despite the three levels of dental care in South Africa, the majority of dental professionals work in the private sector, where the focus is on technology and the offering of specialised care (Marais, 2014). To examine labour market issues, this study will focus on the private sector as it is the biggest contributor to the dental labour market.

1.3 Occupations in the dental profession

As stated earlier, the occupations that offer basic dental services in South Africa are dentists, dental therapists, and oral hygienists. In this section, these three occupations are introduced, and a brief historical account of the development of each is sketched. The discussion below provides perspective on how each of these occupations came into existence, as well as a brief explanation of their various roles.

1.3.1 Dentists

Dentists have always been regarded as the healers of oral diseases, conditions that have been treated and recorded as early as 5000 BC in Egypt. According to Grobler (1977), guilds and craftsmanship began in Europe and China during the Middle Ages, with dentistry evolving from one such handcraft known as 'barber-surgeons'. Modern dentistry spread throughout the world in the 1800s, with Europeans transplanting it to their colonies. By the 19th century, the first dental training colleges were introduced in the USA to improve the quality of dentistry (Grobler, 1977). Grobler further shows that South African dentists were introduced by the Dutch barber-surgeon guilds during the 17th and 18th centuries. The

professionalisation of dentistry in South Africa commenced through the legalisation of practice in 1878 when the 'Dentist Act' sanctioned dentists with the power to practice (Grobler, 1977, p. 32).

Worldwide, dentistry advanced over many centuries and had a strong connection to both craftsmanship and medicine. Today dental associations, professional groups and societies uphold the professional interests of dentists, and this occupation has an elevated standing within society. This has established dentists as the main providers of dental care and maintenance. The introduction and developments within dentistry led to a specialised occupation with dentists performing numerous dental procedures focusing on the overall management of the oral cavity. The two definitions presented below describe the occupation of a dentist. The American Dental Association define the practice of Dentistry as:

> The evaluation, diagnosis, prevention and/or treatment (nonsurgical, surgical or related procedures) of diseases, disorders and/or conditions of the oral cavity, maxillofacial area and/or the adjacent and associated structures and their impact on the human body. (American Dental Association, 2022, para. 1)

A dictionary definition of dentistry is as follows:

> Prevention and treatment of oral disease, including diseases of the teeth and supporting structures and diseases of the soft tissues of the mouth. Dentistry also encompasses the treatment and correction of malformation of the jaws, misalignment of the teeth, and birth anomalies of the oral cavity such as cleft palate. In addition to general practice, dentistry includes many specialties and subspecialties, including orthodontics and dental orthopaedics, paediatric dentistry, periodontics, prosthodontics, oral and maxillofacial surgery, oral and maxillofacial pathology, endodontics, public health dentistry, and oral and maxillofacial radiology. (Dorfman et al., 2018, para. 1)

Both these definitions describe dentistry as an all-encompassing occupation that permits a general dentist the jurisdiction to provide a wide range of services to the head and neck area. Dentistry is depicted as an occupation with a broad scope, authorised to perform

various procedures in the mouth, subsequently allowing for differing interpretations of their scope of practice.

The shortage and maldistribution of dentists, as well as the increasing oral disease needs internationally, triggered the emergence of two mid-level dental professionals, who would assist in alleviating the disease burden, namely: dental therapists, and oral hygienists. Dovlo (2004) describes mid-level health workers as cadres who train for 2-5 years to acquire skills in diagnosing, managing common conditions, and preventing disease (Dovlo, 2004).

1.3.2 Dental Therapists

Dental therapy started as an occupation due to the increasing need for dental treatment and poor access to dentists evident across the world (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008). Therapists' training required less time, due to their limited range of tasks. As early as 1909, 'dental dressers' were first introduced in the United Kingdom (UK). These were mainly women who worked under the immediate supervision of a dentist, to clean, fill and extract the teeth of school children (Rowbotham et al., 2009). Such supervision meant that a dentist had to be present for treatment to be provided. In New Zealand (NZ) in 1921, therapists/dental school nurses were also used to provide basic dental care for school children (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008).

There was much opposition from dentists about the practice of therapists throughout the 20th century, with dentists calling for their abolition, as well as that their scope of practice is restricted (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008; Rowbotham et al., 2009). Despite this, therapy was finally recognised as an occupation in the UK and NZ by the late 1970s and similarly adopted by countries such as Australia, Malaysia, and Nigeria as a means of improving access to care, particularly for children (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008). Likewise, dental therapy was introduced to South Africa in 1977 (Prinsloo, 1993) to assist in the supply of basic dental services to mainly rural areas. However, therapists' services were not limited to children; they were, instead, intended to service

disadvantaged rural communities (Taljaard, 1985). In short, this occupation emerged due to the growing demand for access to dental care.

Therapists have a distinctive emphasis, and this can be seen in the two definitions presented below. The Australian dental association describes dental therapists as follows:

> Dental therapists examine and treat diseases of the teeth in pre-school, primary and secondary school children, under the general supervision of a dentist. The dentistry work performed is varied from identifying the disease risk of the child, providing professionally applied preventive treatments, and carrying out simple restorative work in deciduous and permanent teeth, through to the extraction of teeth under local anaesthetic, and the initial management of trauma. (*ADA NSW - Dental Therapist*, n.d., para. 1)

The HPCSA has a broader explanation of therapists in South Africa:

> the focus on the holistic care of patients, which ranges from the prevention of oral disease and promotion of oral health to the alleviation of oral abnormalities, pain and disease and also functions in the fields of preventive, promotive and rehabilitative health. (HPCSA, 2022)

The first definition illustrates that the purpose of therapists is to perform curative procedures focusing on preventing disease in children, while under the supervision of a dentist. The second definition emphasises curative care and has a broader scope in terms of whom therapists can treat, suggesting not working under supervision. This uncovers variances in the jurisdiction and autonomy of therapists according to the countries that they practice.

1.3.3 Oral Hygienists

The occupation of Oral Hygiene originated in the USA in 1913 through the instigation of a dentist, Alfred Fones, due to the need for patients to be educated about tooth brushing (Darby & Walsh, 2014). Internationally, hygienists have searched for professionalization,

which has led to the addition of prevention therapies and promotion strategies to prevent dental disease (Gordon & Rayner, 2004; Johnson, 2003). Hygienists are recognised as prevention agents, but there has been opposition to the expansion of their scope of practice (Adams, 2003; Johnson, 2008). In South Africa in 1963, there was initial disagreement among dentists to introduce hygienists, because some dentists did not want to permit another occupation to implement parts of the dentists' scope of practice. Foreign oral hygienists started to work in South Africa under the supervision of a dentist in 1969 (Potgieter, 2007). Several additional developments have occurred with the scope and independence of hygienists locally as well as internationally, which will be described later in Chapter 2. Today, the American Dental Hygienist Association (ADHA) conceptualises the practice of a hygienist as follows:

> The study of preventive oral healthcare, including the management of behaviour to prevent oral disease and promote health (Darby & Walsh, 2014, p.1).

The HPCSA describes oral hygienists as follows:

> Through clinical services, education, consultative planning, and evaluation, they seek to prevent oral disease, provide treatment for existing diseases and assist people in maintaining an optimal level of oral health. Their primary concern as health professionals is the promotion of total health through the prevention of oral disease. (HPCSA, 2022)

These definitions support the idea that this occupation was formed to prevent oral disease, which has remained the primary focus of hygienists. Their work is accomplished through preventive therapies, education, and promotion strategies with the addition of basic curative procedures.

In summary, this section emphasises that the dental sector must ensure that the oral disease burden is met. In South Africa, numerous strategies have been put in place to grow the supply of dental services. This includes creating tertiary training facilities; implementing a national oral health strategy; recognising a human resource for health strategy; introducing mid-level dental care; and adopting new regulations. The following sections

outline the development of the dental sector in South Africa within the context of broader global health transformations.

A key approach in South Africa has been the sanctioning of various government regulations to address the country's dental needs (this will be outlined in Chapter 2, pages 39 -45). Among these regulations has been the increase in the autonomy and jurisdiction of mid-level dental professionals, resulting in modifications to the labour market. This highlights differences in the main purpose of the three dental occupations, even though their common tasks have expanded. The argument from this section is that the dental sector has adapted its strategies to provide affordable, accessible dental care to all. These strategies have changed how dental occupations operate within the labour market. This study thus serves to explore perceptions of how policy developments in the dental sector affect professional boundaries, with specific attention paid to the expanded scope of work of hygienists. The next section provides a brief context of the education and work debates in the dental profession, which includes a description of professionalisation, human resources for the dental profession, policies, and their influence on work practices, and how education and training ought to adapt in the sector.

1.4 Education and work debates in the dental profession

This thesis considers the relationship between education and work, within the dental profession. This section emphasises the debates that unfold from this relationship, as described below. Firstly, there is a debate about the professionalisation of mid-level dental professionals and their quest for advancement[4]. Secondly, questions have been raised about the nature of dental work and the human resources required to meet dental needs. Thirdly, there is debate about the mandate of the government to implement new policy directives to address dental disease. Fourthly, queries about the working practices of mid-level dental professionals receive discussion, including how they adapt to changes in scope and autonomy have increased. Finally, deliberations are made about the education and training for mid-level dental occupations and how it best prepares them for work. As the study

[4] *The term advancement is used throughout the thesis and is used to describe the progression and development of an occupation in terms of increased responsibilities, expanded skill sets, full autonomy and a greater salary.*

examines different perceptions of the influence of policy changes on education and work in this occupational sector, these debates provide a robust perspective of the dental sector, and how dental education and dental work are viewed, both locally and internationally.

1.4.1 Professionalisation of Mid-level Dental Occupations

Worldwide debates about work practices and the education and training of dental occupations have been directed to issues of professionalisation (Adams, 2004; Cobban et al., 2007; Johnson, 2009; Nash, Friedman, Mathu-Muju, et al., 2014). Studies examine whether mid-level dental occupations have the necessary knowledge to make evidence-based decisions, as well as whether they ought to be expanding their scope, autonomy to practice, and qualifications. Global variances in the scope of mid-level dental occupations have become more evident, and the literature reveals rising contestations between dental occupations (Brocklehurst, Mertz, Jerković-Ćosić, Littlewood, & Tickle, 2014; Johnson, 2009; Nash et al., 2014; Reinders, Krijnen, Onclin, Van der Schans, & Stegenga, 2017). These debates highlight several contestations arising from the advancement of mid-level dental occupations, which prompts an investigation into the relationships between education and work.

1.4.2 Work and Human Resources

Debates about the nature of work steer us to consider the skills required to deal with oral diseases in the dental sector. Countries require the appropriate mix and number of dental professionals to manage the prevalence of oral disease. Inappropriate human resources have resulted in unmet treatment needs in high-income countries and are a growing trend in low and middle-income countries (Petersen, 2008; Yamalik et al., 2014). In South Africa as in many other countries, the concern is twofold: there are deficits in the numbers and mix of dental professionals, as well as geographic imbalances in the distribution of these professionals (Singh, 2011; Lalloo, 2007; van Wyk & van Wyk, 2004). The issue of what skill mix would be most appropriate to meet the dental care needs of the country ought to receive emphasis. This investigation thus also involves considering the appropriate expansion of human resources within the dental sector.

To understand the human resources of the dental sector in South Africa, the occupations that provide services are outlined. These include dentists, dental specialists, dental therapists, oral hygienists, dental assistants, and dental technicians. The three occupations on which this study is focused are dentists, dental therapists, and oral hygienists, as they offer basic dental services directly to the patient. Selected basic procedures that they each perform include patient examination and diagnosis, radiographs, scaling and polishing, and dental restorations (Gordon, 2015; Bhayat & Chikte, 2018). In this study dental assistants were excluded from the list of professionals providing the basic package of care. This was because their role is more of an assistant role, with indirect access to a patient's oral cavity[5].

1.4.3 Government Mandate to Address Oral Disease

With reduced access to dental care, suggestions to revise and implement policies to address the oral disease burden have surfaced (Govender et al., 2013; Lalloo, 2007). In South Africa, numerous approaches have been highlighted and/or adopted to deal with this. These include the following: reviewing human resources for health plans, the implementation of primary health care services as described in the National Oral Health Strategy (NOHS) (National Department of Health, 2005); regulation of policies on independent practice permitted for mid-level dental occupations; modifications to scope,[6] and revisions to qualifications offered for dental occupations. These policy developments affect either the labour market or higher education and training in some way or another.

The South African government promulgated regulations that increase the autonomy and jurisdiction of mid-level dental professionals, which ought to increase the control that they have over their work. This has amplified competition between the three occupations as they each struggle for domination over parts of their work and for suitable remuneration for their services (Gordon, 2015; Mthethwa, 2019; Singh & Combrinck, 2011). These amendments for mid-level dental professionals have led to alterations in terms of the relations among the three dental occupations. Each of these occupations struggles for control over their work, and suitable remuneration for their services and expertise (Gordon,

[5] *The HPCSA scope of practice for Dental Assistants does not include performing procedures directly on their own in the oral cavity.*
[6] *The scope of practice includes the procedures, actions, and processes that a health practitioner has been authorised to perform within a given profession.*

2015). According to a letter penned by a dentist to the South African Dental Association, there is much competition between dental professionals:

> there is a lot that the profession needs to work on and develop rapidly in the coming weeks, months, and years. The profession needs to put differences aside, for it can ill afford fragmentation and fighting over small pieces of the pie. (Mthethwa, 2019, p. 531)

This highlights tensions over control, although it is unclear precisely how current government regulations are perceived and implemented across the three occupations, providing impetus for this investigation into the perceptions of the amendments and implementation of the scope and autonomy for mid-level dental occupations.

1.4.4 Work Practices and Scope Changes

Reservations regarding the working practices of mid-level dental professionals have been raised by a few authors in South Africa (Gordon, 2015; Gordon & Rayner, 2004; Singh, 2014). The legislative changes to the scope of mid-level dental occupations now show a greater overlap of procedures.[7] According to Gordon (2015), the scope of mid-level dental professionals covers basic dental services (preventive and therapeutic procedures) required to fulfil the needs of the South African population. The significance of the most recent amendments to the scope of mid-level dental professionals in South Africa has not been examined. Furthermore, mid-level dental professionals have been interrogated about the services that they have been permitted to offer, and whether these services are befitting of their role; as well as how specified procedures such as sealant restorations offered by mid-level dental professionals have affected interrelations between these occupations, needs to be examined. It is not evident which changes to the scope of practice are being contested in the workplace, nor how the latest amendments have influenced professional status, roles and responsibilities, and the education and training. Accordingly, the current study looks at perceptions about the changes to the scope of practice and how this influences daily practices and inter-professional relations of dental occupations.

[7] *(Scope_of_Profession_Oral_Hygiene_Final_Gazetted_21_July_2017.Pdf, n.d.), (Government-Gazette-ZA-Vol-566-No-35644-Dated-2012-08-31.Pdf, n.d.), http://www.gpwonline. co.za/Gazettes/Gazettes/31958_43-09_Health.pdf*

Moreover, the responsibility of mid-level dental professionals regarding direct access to patients has been highlighted in the literature. The notion as to whether autonomous practice is welcomed by the dental profession in South Africa also warrants investigation. It must also be established whether, for instance, dental procedures require a referral by or to a dentist, and the extent to which the instituted changes have created conflict or synchronisation across the three occupations. Because of this, reservations regarding mid-level occupations' daily work as well as the adequacy of their education and training have emerged.

1.4.5 Education and Training for Dental Occupations

The training of dental professionals varies according to the scope of practice, which constitutes the specified procedures that may be performed in the workplace. This has a bearing on the competence levels and control that are anticipated in the workplace. With changes in autonomy and jurisdiction, the knowledge and skills taught must inculcate the required competencies. Yet, it is not apparent which knowledge and skills are being advanced in mid-level dental qualifications, and how these are used in daily practice (Johnson, 2008; Nash, Friedman, Mathu-Muju, et al., 2014). Questions regarding the training of the three dental occupations have also been raised. Specifically, a central question concerns how these professionals are prepared for work, and in what ways such preparation affects the type of work they do. Additionally, the question of what knowledge is valued within the dental profession has been posed (Vergotine, 2015). The question of what knowledge is required to perform tasks common to the three occupations has not, however, been addressed. Further, the differences and/or similarities of knowledge types in the curriculum for the common tasks performed by dental occupations need to be identified.

These debates illuminate several questions that need to be addressed regarding the work and education interface. They show that there are several ways in which the arenas of work and education overlap and impact one another. Finally, it raises multiple questions about relations within the dental profession, and how boundary contestations may arise.

1.4.6 Personal Perspective

As the researcher in this thesis, it is essential to state my position regarding the importance of this topic. My involvement in the dental sector is extensive, having worked as an oral hygienist in different settings for more than thirty years. It is from my numerous years of lecturing to oral hygiene students and performing external examination duties for dental therapy programmes that I am interested in the debates around professionalisation for mid-level dental occupations.

I argue here that the policy changes for mid-level dental occupations require an analysis of the activities within the labour market and higher education. Examining the perceptions of various interested parties about the work and education of dental occupations will indicate the extent to which legislative changes are shifting boundaries in the labour market and educational settings.

In my current employment at the Centre for Researching Education and Labour, I have a keen interest in trying to understand the relationship between education and labour. This thesis focuses on the preparation for work, delving into what occurs in workplaces and educational settings, specifically how the role of knowledge influences the advancement of professional jurisdiction and autonomy in the workplace. Investigating the content for common tasks within curricula could facilitate our understanding of the significance of the most pertinent knowledge for mid-level dental occupations. The study will explore activities in preparation for work that guide how tasks occur in the workplace, and how this influences professionalisation.

The study could offer a perspective on how dental occupations in South Africa cooperate daily (e.g., through referral systems and supervisory practices) and what students are taught in preparation for work. I see this as a transitionary phase in the dental profession, in which debates about the professionalisation of mid-level dental occupations have appeared.

1.5 Statement of the Problem and Rationale

My starting point is that there are education and work challenges within the dental sector. The inclusion of mid-level dental occupations in the dental workforce has been to deliver basic curative and preventive dental services, mainly where access to dental care is poor. Over the past three decades, mid-level dental occupations worldwide have been undergoing several regulatory and educational transitions to advance themselves as occupations (Johnson, 2003; Singh, 2011; Nash, 2012). The literature confirms the emergence of inter-professional conflict between dental occupations, due to advances in their jurisdiction and autonomy (Reinders et al., 2017; Brocklehurst et al., 2014; Nash, 2012). These authors indicate that dental occupations share several procedures, and are expected to work toward a common goal of improving oral health. However, there is a professional hierarchy, which leads to competition. More specifically, what is not clear is the degree to which the hierarchy within the dental profession in South Africa enables and/or constrains the implementation of the expanded scope of work given to mid-level dental occupations (specifically hygienists).

The literature emphasises that mid-level dental occupations have predominantly been employed by dentists, working under their direct supervision. The amendments to autonomy and the expansion of the scope of mid-level dental professionals in the South African labour market have increased these mid-level professionals' work options. Antagonism has arisen between the three dental groups for domination over their work (Mthethwa, 2019; Singh & Combrinck, 2011). Gordon (2015) focuses on job satisfaction among mid-level dental occupations in SA, which reveals that they are happy with their occupations and the procedures that they perform. However, this study was undertaken before the latest changes granting independent practice to hygienists and thus does not examine how autonomy has influenced relations between these three dental occupations. Singh (2011) focuses on dental therapists in South Africa and highlights the competition between therapists and dentists, revealing that relations are strained between these two groups. These studies provide a good depiction of work challenges for mid-level dental occupations. However, these studies do not reveal perceptions of the three dental

occupations and the extent to which the scope of specifically oral hygienists is contested in the labour market and its influence on the professionalisation of this occupation.

Another area of interest is how knowledge is inculcated during education and training to increase the status and jurisdiction of professionals if it is to meet the human resource needs of countries. Some South African dentists argue that education and training for dental occupations ought to be more relevant to the oral disease demands of a country (Bhayat & Chikte, 2019; Lalloo, 2007) so that more preventive and basic curative needs can be met. This has intensified the call for the number of dentists to be trained to be curtailed so that the skill mix in South Africa could include more primary care dental professionals to address the common oral diseases (such as dental caries and periodontal disease) (Bhayat & Chikte, 2019; Lalloo, 2007).

To meet the mandate of providing proficient human resources described above, the literature shows that jurisdiction and autonomy for practice require suitable knowledge and skills (Brocklehurst & Macey, 2015; Brocklehurst et al., 2014; Vergotine, 2015; Singh, 2011). The literature lends insight into several matters regarding the education and training of the three dental occupations. This involves a suitable skill mix of dental professionals to be trained; curriculum debates about the selection of knowledge and ways it is related to dental work; and which knowledge is valued by occupations. Another issue that is evident in the education and training arena is the global expansion of qualifications for mid-level dental occupations (Johnson, 2008; Nash et al., 2008), which indicates that there is a movement by mid-level dental occupations to professionalise. Missing from the literature is an account of the preparation for work of these three occupations, and their influence on what occurs in the workplace.

The pressure to change work practices and educational requirements has emanated from different spheres of influence, and it is unclear to what extent discord exists between social agents[8] within the dental sector. It could be argued that the dental profession in South

[8] *Social agents in the dental sector would include policy-makers, professional association members, HPCSA professional board members, academics, and private practitioners from within the three respective dental occupations.*

Africa is in transition, where perceptions of how past and current regulations influence daily work and training, or how this alters professional identities, are not evident.

From the discussion above, I draw out the following key claims:

1. The approved scope and autonomy to practice affect the daily work of occupations. In the case of the dental sector, it has expanded the jurisdiction and decision-making of mid-level dental occupations in specific ways. It is unclear how this change of scope is accepted and taken into the practice of hygienists. Moreover, it is not clear what the perceptions of dental professionals are regarding the roles and responsibilities of oral hygienists (Reinders et al., 2017, 2018). The literature does not allow for gleaning the perceptions of different social agents in the dental sector regarding shifts in boundaries across dental occupations.
2. The occupational hierarchy appears to have increased the inter-professional conflict between dental occupations. The nature of the conflict between dentists and mid-level dental professionals in terms of the scope and autonomy in the workplace has not been extensively examined (Brocklehurst et al., 2014). The increasing inequality in dental service provision affirms that there is still a need to realise the nature and reasons for competition and conflict, and the forms it takes in the labour market and higher education.
3. Third, since several procedures performed across the three occupations are common, this presents an opportunity to investigate the differences and similarities in the preparation for work of the three occupations. This is intensified by a need to better understand and clarify the training of mid-level dental occupations concerning knowledge and skills for the development of their performance of specified tasks. The fact that the three dental occupations perform common procedures provides an opportunity for doing a general comparison of the intended curricula of each occupation and the preparation of such tasks.

Several problems arise from the gaps in the knowledge discussed above. These problems are concerned with an apparent lack of substantive evidence of the South African labour market and training of the three occupations, namely dentists, dental therapists, and oral

hygienists. The above discussion indicates that numerous political, economic, and other societal drivers play a role in both the labour market and the education of the dental sector. This leads to the rationale for this study, which is to examine what occurs in the labour market and further how the preparation for such work is shaping the way work is performed by mid-level dental occupations.

1.6 Aim of the Study and Research Questions

To address the gaps in knowledge identified, and the emergent research problems highlighted above, the aim and research questions are outlined here. The primary aim of this study is to explore how the changes in scope and autonomy of mid-level dental professionals, specifically, oral hygienists have influenced professional boundaries within the dental profession. From this, the study has a few specific objectives, including;

1. To explore perceptions of the expanded scope of work of hygienists and their effects on professional relations in the dental profession.
2. To scrutinise how regulatory changes affect perceptions of the daily work practices for mid-level dental occupations (specifically oral hygienists).
3. To examine how the preparation for work in a diversifying sector is shaping the way work is performed daily by mid-level dental occupations.

1.6.1 Main Research Question

The main research question is thus formulated as follows: How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced professional boundaries within the dental profession? This research question can be interrogated further and is formulated in terms of the following sub-questions:

1. What are dental professionals' perceptions of the work practices of oral hygienists?
2. How are oral hygienists responding to the policy amendments?
3. How are dental curricula preparing learners for shared procedures (e.g., local anaesthesia, restorations)?
4. How does examining the work and education of dental occupations help us to understand inter-professional conflict?

Even though the discussion described above refers to mid-level dental occupations, this study focuses primarily on oral hygienists and takes into consideration how dental therapists and dentists perceive this occupation and their relations.

The changes to labour legislation are shifting the boundaries of these occupations, where their daily work and training are affected. This thesis serves to explore how such changes may influence the advancement of mid-level dental occupations. As part of the analysis, I locate conceptual tools to assist in understanding the empirical world of the dental occupation (in Chapter 4, concepts from the sociology and philosophy of work are identified). The underpinning assumption of the research is that all professions want to advance. Thus, we want to understand the power relations between the three dental occupations and to interrogate the strategies that are used to influence professional expertise in education and practice. This thesis proposes to examine perceptions of the work of dental professionals and the relationship between preparation for work and how this is displayed in the workplace.

1.7 Structure of the Thesis

Chapter 1 Introduction

This chapter introduces the study and provides an overview of the context within which it is set. It provides a discussion on the dental sector and the three occupations to be studied. The main problem addressed is stated as follows: dental occupations in South Africa are in transition, and it is not evident how regulations influence daily work and training, and how this alters the professional advancement of mid-level dental occupations. The main research question is thus, "How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced professional boundaries within the dental profession?" The study will examine how work and education in a diversifying sector are shaping the advancement of a mid-level dental occupation such as oral hygiene.

Chapter 2 Literature review: The labour market of the dental profession

The chapter offers an appraisal of the local and international literature by examining three areas: first, the supply and distribution of dental occupations and their relation to population needs are outlined (highlighting gender and professional hierarchies among these occupations); second, the regulatory environment is described for each occupation, revealing the official relations between the three dental occupations; third, the division of labour of the dental occupations is discussed, focusing on the types of tasks each occupation offers and how dental occupations express job satisfaction within the workplace.

Chapter 3 Literature review: Dental education and knowledge

This chapter describes how education and training play a role in shaping the identities of the different dental occupations and their influence on the advancement of each. The discussion is related to the country's disease burden and skills planning and implementation of dental occupations, and its implications for educational planning and curriculum design. Focus is placed on training trends and the development of qualification levels internationally and in South Africa. Furthermore, the chapter includes examples of dental curricula, and the knowledge which informs decision-making and/or measures used to evaluate the skill.

Chapter 4 Conceptual framework on work and education

The chapter outlines a conceptual framework that draws on literature from the sociology of education linking work and education. This is done in two ways: it describes a selection of concepts and elucidates what these will mean for this research, and then it provides an account of how these concepts are connected in a framework. The conceptual framework depicts the interplay between two main areas, namely: work practices and professional education. This allows for a discussion of concepts such as division of labour, autonomy, jurisdiction, judgement, and specialised knowledge. These concepts help to review preparation for work and show that negative competition and control arise within these arenas around decision-making for mid-level dental occupations, which ultimately affects their professionalisation.

Chapter 5 Methodology

The methodological foundations of the current study are outlined in Chapter 5. The research design is exploratory and qualitative. The study population includes stakeholders from the dental profession and includes professional body members, lecturers, and practitioners from the dentistry, dental therapy, and oral hygiene occupations. Methodological tools undertaken include a review of the regulatory environment, semi-structured interviews, and curriculum analysis of common tasks. The Gioia method of analysis (grounded theory) is explained and its application in the thesis is outlined. Reliability, validity, ethical considerations, and study limitations, are discussed here.

Chapter 6 Nature of relations between dental occupations

The first set of findings shows how regulations have shifted the professional relations of these three dental occupations. It reveals how mid-level dental occupations describe the perceived control by dentists in the workplace and training institutions. It also highlights how oral hygienists are holding back their advancement.

Chapter 7 Work practices and responses to policy amendments

The next set of findings confirms how regulations have shifted the division of labour and jurisdiction of dental occupations. It highlights working conditions and how work is performed and remunerated. The chapter raises issues of boundary keeping and crossing, control of jurisdiction, and competition in the workplace. It considers the true culprits that may be responsible for a lack of balance in the ecosystem. It thus reveals that the dominant occupation (dentists) continues to dominate and maintain its hierarchy in the workplace, while hygienists are hesitant to take up their expanded scope and independence.

Chapter 8 Findings on Education and Training

The final set of findings on education and training illustrates that changes in regulations and the workplace influence change in education and that these changes are cyclical. It shows how the shifts in the division of labour and jurisdiction of mid-level dental occupations have been translated into curricula of mid-level occupations and present issues of control of

knowledge through curricula for decision-making in training institutions. Further, there are several other factors which constrain the preparation for the work of oral hygienists.

Chapter 9 Discussion, Research contribution and conclusion

The final chapter brings together the literature review, the conceptual framework and the three findings chapters. The discussion highlights the consistencies and inconsistencies, which are seen in responses by dentists and oral hygienists concerning boundary conditions. A key empirical finding is that the regulatory changes have not been implemented, this is not only because of contestations by dentists but also because hygienists withhold their advancement. Dentists' power is exhibited in the labour market and education which justifies why the official legislative changes in scope are not being implemented. The contribution to knowledge the thesis offers is that hygienists place boundaries on themselves, which illustrates various ways in which hygienists limit their advancement.

CHAPTER 2

LITERATURE REVIEW: THE LABOUR MARKET OF THE DENTAL PROFESSION

2. SYNOPSIS OF CHAPTER 2

This chapter sketches a broad overview of international labour market shifts in the dental sector, thereafter shifting focus to South Africa. The labour market for dental professions has undergone several adjustments to the labour supply, division of labour, autonomy, and work practices. To render these changes here, the chapter provides an appraisal of the literature by looking at five key questions. Firstly, the broader context of health systems and how they relate to the dental sector is explained. The focus is on the types of systems within which dental professionals operate. Secondly, how does the supply of dental professions relate to population needs? This discussion also features concerns around gender, race, and age for these professions. Thirdly, it asks, how regulatory developments differ for the three dental professions. This includes the current official scope that these dental occupations have in common. Fourthly, the chapter considers, how the division of labour in dental occupations influences daily practice and professional relations. This is done by reviewing the types of work mid-level dental professionals undertake and their job satisfaction. Finally, it looks at what are the challenges which arise within the dental profession. This review provides a context for the dental sector, and the discussion is the first part of three literature chapters. The chapters to follow, Chapter 3 focuses on the education and training within the dental profession, and Chapter 4 provides a conceptual framework linking education and work.

2.1 Health Systems the Relevance for Dentistry

The broader context of this thesis is health systems, as such systems are guided by political and economic factors, which affect the organisation of the dental sector. Numerous parallels can be observed through developments in the greater health system, as well as the dental sector. To place the development of dental occupations in South Africa in this greater

context, a brief overview of global healthcare trends over the past fifty years is given. During the 1960s and 1970s, independence from colonial domination was granted to many poor countries. This stimulated the delivery of services, such as healthcare and education to their people (Hall & Taylor, 2003). It was during this time that these countries initiated numerous measures to provide their citizens with comprehensive, equitable, affordable healthcare. This is in parallel with what is seen in South Africa, as it is around the same time that dental schools were established, and mid-level dental occupations were introduced.

2.1.1 Primary Health Care Approach

To understand the shift that South Africa made to primary care, a discussion on this approach is outlined here. The Alma-Ata Declaration was adopted by the WHO in 1978, and its member countries acknowledged Primary Health Care as a vital approach to fulfilling Health for All by 2000 (World Health Organization, 2004). There was a substantial upsurge in the introduction of Primary Health Care, which directed healthcare provision to the grassroots. This approach envisaged universal coverage of basic services, intersectoral collaboration, and community involvement in the planning and implementation of healthcare services (Hall & Taylor, 2003; Lawn et al., 2008). However, primary health care was difficult to implement, especially in developing countries. Soon after the Alma-Ata Conference, the primary healthcare approach started to be condemned by politicians and funding specialists from developed countries (Hall & Taylor, 2003; Sanders et al., 2019). This was mainly due to these politicians and specialists, who implement their healthcare services (Hall & Taylor, 2003; Lawn et al., 2008). Selective Primary Health Care (SPHC) was introduced, which focused on interventions that assisted in reducing child mortality in developing countries. The SPHC took control away from communities, conceding it to foreign experts (Hall & Taylor, 2003; Sanders et al., 2019).

2.1.2 Health Sector Reform

The 1980s and 1990s ushered in full-blown neoliberal economics, which did not support primary healthcare needs (Sanders et al., 2019; Lawn et al., 2008). This led to the World Bank introducing the so-called Health Sector Reform, which was based on market forces and the economic benefits of better health (Berkley et al., 1993). The delivery of healthcare

changed, reducing government involvement in providing services (Hall & Taylor, 2003). According to Hall and Taylor (2003) the World Development Report of 1993 by the World Bank (Berkley et al., 1993), defined healthcare services as:

> … the economic benefit that improved health could deliver, and sees health improvement mainly in terms of improvement of human capital for development, rather than as a consequence and fruit of development (2003, p. 19).

This meant that healthcare provision was seen as a driver of economic development. It encouraged populations to be healthy, which would translate into economically prosperous countries. This strategy centred on the private sector delivering healthcare services and condensing government and community-led services. This new Health Sector Reform brought with it inequitable healthcare provision, limited access, and disregard for the health of the poor (Hall & Taylor, 2003). Furthermore, this reform contributed to the inequity in dental provision, with the private sector becoming the prominent sector in providing dental care.

2.1.3 Universal Healthcare Coverage

More recently, in 2005, the World Health Organisation introduced another strategy for accessing health services, namely Universal Healthcare Coverage, insisting that it should be implemented globally by 2030 (World Health Organization, 2016). According to Ji and Chen (2016), universal health coverage is "the current global rallying call in an ongoing movement aimed at strengthening national health systems to extend their reach and promote equity." (Ji & Chen, 2016, p. 11) Universal health coverage suggests that every person should have improved access to essential health services, without risking economic adversity when paying for these. Universal health coverage supports the re-establishment of primary health care through sustainable health financing. This strategy incorporates the complete suite of healthcare services, such as health promotion, prevention, treatment, rehabilitation and palliative care (FDI World Dental Federation, 2019). According to Fisher et al. (2018), the universal health coverage approach can contribute to a policy that will address poorly

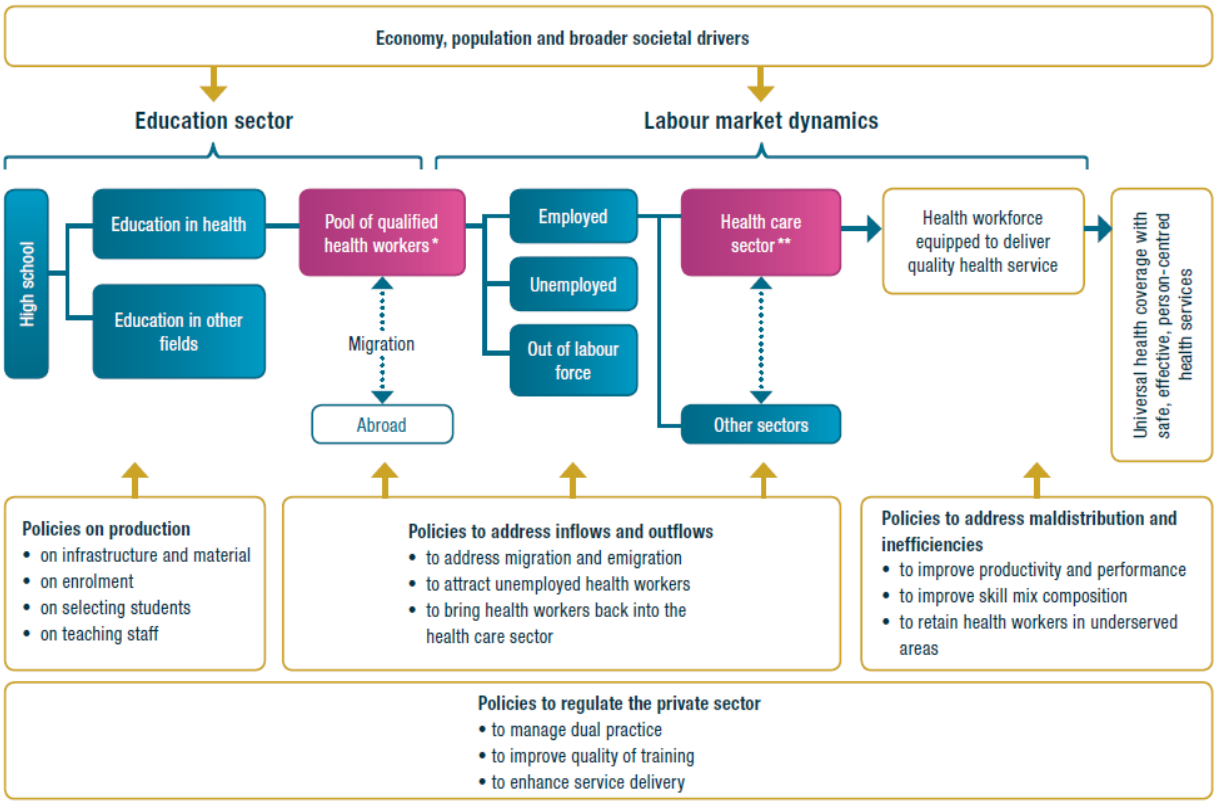
implemented primary dental service provisions. Such a policy would regulate spending associated with dental care in many countries, and consequently achieve universal health coverage.

The latest global strategy of human resources for healthcare outlines a vision of universal health coverage and the UN SDGs. It states that these goals can only be achieved with adequate human resources, and accelerates progress towards universal health coverage and the UN Sustainable Development Goals by ensuring equitable access to health workers within strengthened health systems (World Health Organization, 2016a). In short, the focus has shifted to the supply and demand of health workers, such that accessible healthcare provision is delivered.

2.1.4 Human Resources for Health

Several issues hamper the efficient supply of human resources for health. These often include skill-mix imbalances, unregulated practices, inefficient use of resources, poor working conditions, and diminished productivity and performance in workplaces (Sousa et al., 2013, p. 892). Furthermore, the supply of human resources for health is not able to deal with skills shortages, it offers unsuitable education and training, and endures barriers to inter-professional collaboration (World Health Organization, 2016, p. 11). These challenges lead to inequitable services across public and private sectors, rural and urban settings, and wealthy and poor communities alike.

Figure. 1 below provides a framework of a health labour market and the policy levers that drive the attaining of universal health coverage (Sousa et al., 2013). Sousa et al. (2013) highlight the economic, population, and societal drivers that influence the education sector and the labour market. By understanding the relationship between the education sector and the labour market, this study will examine perceptions of the changes to regulations in these two arenas for dental occupations. The framework in *Figure 1* depicts connections between the two arenas, revealing how crucial policies are in the delivery of healthcare services. These policies influence the production, flow, and distribution of health workers, and so the quality of health care delivery.



* Health worker supply = qualified health workers willing to work in the health-care sector.

** Health worker demand = public and private institutions constituting the healthcare sector

Figure 1 Health labour market framework and policy levers for attaining Universal Health Coverage

The framework shows four spheres of policy that influence whether universal health coverage can be achieved and maintained (Sousa et al., 2013). These are:

- policies focused on the production and ultimately the supply of healthcare workers. Such policies may be drafted by governments or within institutions and could include aspects such as student enrolment or selection;
- migration and emigration policies address the inflow and outflow into the education system and can affect demands in the labour market;
- policies to address the maldistribution and inefficiencies aimed at improving the productivity of the workforce; and
- policies to regulate the private sector, such as managing a dual practice, and improving training.

This emphasises that different spheres of policy ensure that the pool of healthcare workers can meet the needs of the healthcare worker demand in the healthcare sector. In this study, the demand for dental workers is high, the government has brought in policies that might allow mid-level dental occupations greater scope and autonomy to provide greater services to those in need.

2.1.5 Task Shifting

The lack of human resources in global health systems in 2006 saw the WHO[9] urge countries to delegate tasks to lower-level cadres (Lehmann et al., 2009; World Health Organization, 2006). The shifting of tasks has been employed in several countries to increase access to healthcare, especially in rural areas, and to reduce costs of service delivery. This would require numerous adjustments for occupations. According to Lehmann et al. (2009), this would include the rearrangement of healthcare teams, changes to scopes of practice and policies, improved education and training, and reliable funding support. Therefore, to achieve task delegation, governments would have to develop implementable policies and guide and support training institutions. This is crucial to note, as this study aims to examine the changes in the daily work and the education and training of mid-level dental professionals.

The discussion above shows the South African healthcare system located within a greater global health system. This accounts for how South Africa transitioned from primary health care to universal health coverage as it mirrors what occurred globally, and reveals the adoption of similar challenges and strategies (Van Rensburg, 2014). South Africa faces health workforce shortages, and poor access resulting from the improper distribution of human resources. Van Rensburg argues that the effects of racial segregation policies are still evident in "health-professional backlogs, unequal provincial HRH distribution, and differential access to health services for specific race and class groups" (2014, p. 11).

Post-apartheid policies saw significant changes to the South African health system and health professions (Van Rensburg, 2014). Free health policies and the district health system

[9] *This was documented by the World Health Organization (WHO): Working together for health. Geneva: The World Health Report 2006*.

were introduced to provide access for disadvantaged groups. However, there were challenges too, which saw numerous health professionals emigrating to developed countries and the private sector. This destabilised the public health sector and created further disparities in healthcare provision. One of the strategies to strengthen human resource capacity in the public sector is the introduction of a National Health Insurance plan, which is based on Universal Health Coverage. The government hopes that this plan will address the redistribution of human resources for health, creating more equitable access. Van Rensburg states that the success of the National Health Insurance plan will, however, depend on the equal distribution of the national health workforce (Van Rensburg, 2014).

The relevance of discussing dentistry and health care systems together is that dentistry does not exist in a vacuum. The discussion shows that dentistry is affected by what occurs more broadly in healthcare systems around the world, and how the South African government aligns itself with global approaches and political and economic policies. The South African government is devising policies and plans to adopt an NHI system, which will include all spheres of health, including dentistry. This will mean that private dental practitioners will operate in a system, which has Universal Health Coverage. The aim would be to remove the current system of competition for work to give all South Africans access to dentistry at little to no cost.

The discussion about the contextual setting shows that there is a shortage and an imbalance in the distribution of dental professionals in South Africa. It highlights a focus on curative and rehabilitative care for a small part of the population, with the majority receiving inadequate or no care. What is noted is that dentistry is shaped by global and local health system agendas, and must adhere to policies that affect the population.

2.2 Supply of Dental Professionals

The discussion on human resource supply focuses on the number and distribution of the three occupations, dentistry, dental therapy, and oral hygiene. The supply of human resources in the dental profession illustrates the accessibility of dental professionals to manage oral diseases and the levels of dental care these professionals can offer. This

discussion highlights the advancements made by these occupations across the world and the way each relates to the other.

2.2.1 Supply and Distribution

The supply of dental professionals represents a focus on curative care, with many people having limited access to these professionals. This analysis depicts a partial portrayal of the supply and distribution of dental professionals worldwide,[10] though this is a considerably good universal representation of what is transpiring in the dental sector. In a comparison of dental professionals, Nash et al. (2008)[11] use countries where therapists participate in the dental workforce. In this study, the number of dentists is approximately 280,000.[12] Most dentists practice in Europe and the Americas (69%) and serve a very small percentage (27%) of the world's population.

Countries with the highest number of dentists include the United States of America with 195 156, the United Kingdom with 34 621 and Canada with 22 454 (World Health Organisation, 2018). In Africa, access to dental professionals is significantly low, with only 1% of the global dental workforce practising there (Gallagher & Hutchinson, 2018). ***Error! Reference source not found.*** depicts the percentage of dental professionals working in fifty-four countries[13] in comparison with one another. This illustrates that proportionately, dentists make up the largest number of dental professionals (65%), which shows this group to be the primary providers of dental services. According to Thorpe (2006), even though the oral disease burden is high in Africa and the main need is for basic dental services, dentists remain the main providers of care.

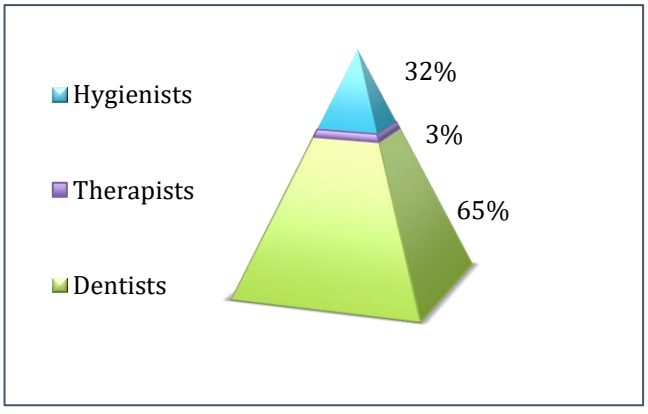


Figure 2 International supply of 3 dental occupations (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008)

[10] *Recent data available on global statistics for dental professions is limited as not all countries report their numbers to the WHO regularly year-on-year, which makes comparative reporting difficult (Gallagher & Hutchinson, 2018).*
[11] *The distribution and supply numbers of dental professionals indicated by Nash et al. (2008) reflects countries, where the dental therapy profession is practiced. A study by Nash et al. (2008) provides a means for comparison between the three dental professions.*
[12] *Gallagher (2018) show that there are more 1,6million dentists worldwide.*
[13] *This data is taken from only a few countries, in most other countries' dentists remain the sole providers of dental care (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008).*

Hygienists constitute approximately one-third (32%) of the global dental workforce with 137 600 practising in twenty-nine countries (Johnson, 2009; Nash et al., 2008). The highest numbers of hygienists are seen in Japan and the United States of America (200,000), then Korea (30,782), followed by Canada (18,350). Six countries in Africa have practising hygienists: Benin, Gambia, Nigeria, South Africa, Eswatini, and Zimbabwe (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008).

Therapists make up the lowest percentage of dental professionals (3%), with 14,441 practising globally (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008). The highest number of therapists is seen in Thailand (3000), Malaysia (2090), Australia (1242) and Nigeria (1100) (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, & Davenport, 2008). In Africa, there are sixteen countries where therapists work, namely Benin, Botswana, Burkina Faso, Ethiopia, Gabon, Gambia, Lesotho, Mauritius, Mozambique, Nigeria, Seychelles, South Africa, Swaziland, Tanzania, Togo, and Zimbabwe (Nash, Friedman, Mathu-Muju, et al., 2014b; Mokhethi & McCrindle, 2022). These numbers show a skewed representation of dental professionals internationally, where the focus is on specialised curative care offered by dentists rather than Primary Health Care, which is provided mainly by mid-level dental professionals.

In South Africa, the figure for registered dental professions in 2019 was 8372 (*HPCSA, 2020*). Of this number, 6365 are dentists (76%), 1240 hygienists (15%) and 767 therapists (9%). These percentages mirror that of dental professionals supplied internationally, as outlined above. It portrays dentists as being the main providers of dental services in SA, and therapists as the smallest group of dental professionals. The numbers also show a deficiency in the supply of dental professionals to meet South Africa's need to treat the oral disease burden, which has been prolonged over many years (Bhayat & Chikte, 2019; Singh, 2011; van Wyk & van Wyk, 2004). South Africa has a reported population size of approximately 60,6 million people serviced by dental professionals (Statistics South Africa, 2022). Dentistry does not meet World Health Organization recommendations for dentists-to-population ratios, yet it is not regarded as a critical skill (Gallagher et al., 2023; Vedan & Kotsane, 2016).

Therefore, it is crucial to understand the distribution of dental professionals within the current population's need for services, which is discussed below.

Numerous authors argue that the number of dental personnel should be distributed according to the types of services required (Nkambule et al., 2022; Bhayat & Chikte, 2019; Lalloo, 2007). Bhayat and Chikte (2019) argue that at the level of Primary Health Care the supply of professionals should be the greatest (see *Figure 3)*.

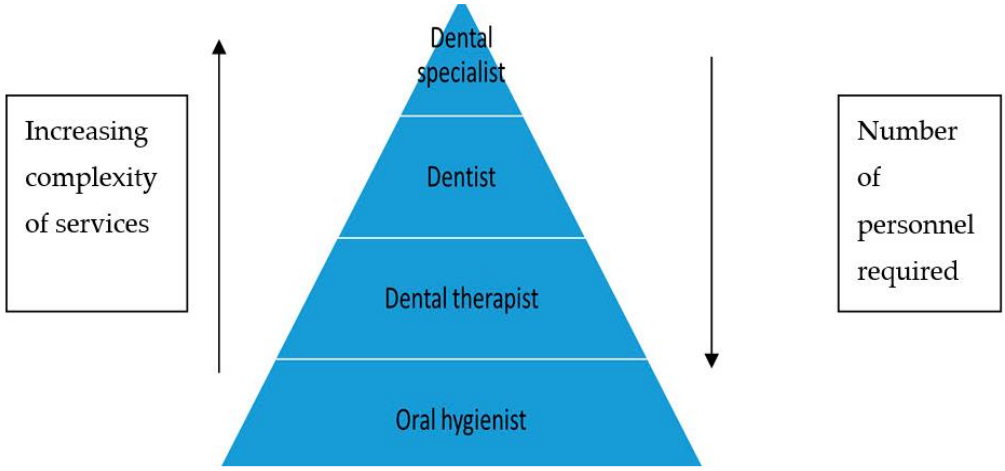


Figure 3 Personnel in terms of dental service delivery (Bhayat & Chikte, 2019)

The number of personnel required ought to be inversely proportionate to the complexity of services, meaning that most dental professionals should be offering basic services, with a smaller number offering complex services. Advocacy to increase the number of mid-level dental professions to offer oral health promotion and prevention in South Africa has been signalled by many (Nkambule et al., 2022; Bhayat & Chikte, 2019; Gordon, 2015; Lalloo, 2007; Singh & Combrinck, 2011). Yet, there are still significantly lower numbers of registrations of these professionals, as seen above.

These dental supply figures highlight the shortage of mid-level dental professionals in South Africa. This has consequences for the provision of basic services, as the country requires a dental workforce to manage the population's basic dental needs.

2.2.2 Private versus Public Distribution

Even though dental professionals are most needed in poor rural areas, there is a low uptake into the public sector systems that service those areas (Bhayat & Chikte, 2018; Strachan et al., 2011). In 2018, most dentists (91%) were registered in independent practice, while 7% were in the public sector (ibid). This distribution is similar to numbers seen in high-income to middle-income countries. Figure 4 provides an illustration of dental professionals per 10,000 for the public and private sectors in 2010 (Dept of Health, 2011), and these ratios have not changed much since (Bhayat & Chikte, 2018).

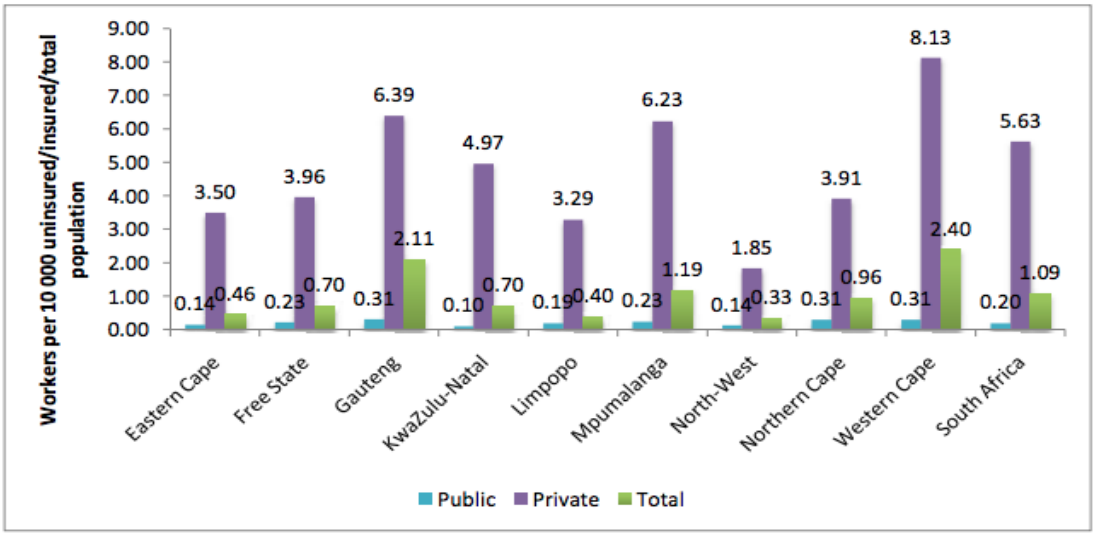


Figure 4 Dental practitioners in South Africa by province (Dept of Health, 2011)

Error! Reference source not found. above shows that populated provinces such as the W estern Cape, and Gauteng have the highest numbers of dental professionals in the country (Dept of Health, 2011). It also illustrates the private sector as the dominant sector in which dental professionals prefer to work. Other concerns are that the supply of professionals from South Africa's dental schools is not being absorbed into the public sector and that many dentists are lost to other countries through emigration (Strachan et al., 2011). The reasons cited for this poor uptake in the public sector are a lack of policy and planning to expand the number of professionals; deficient finance and posts; poor work conditions; and limited career prospects (Bhayat & Chikte, 2018; Strachan et al., 2011).

Since therapists in South Africa were allowed autonomous practice in 1992, many work in the private sector (Gordon, 2015; Singh, 2011; Bhayat et al., 2008). Bhayat et al. (2008) indicate that the main reasons why therapists choose the private sector are to grow economically and to have the freedom to work in urban rather than remote rural areas. Their concern is that therapists would "not be fulfilling their initial primary objective—to provide services to the underprivileged and rural communities who do not have access to private dental services" (Bhayat et al., 2008, p. 1136). This reveals that there is a misalignment of the purpose of dental therapists and what the state requires. Hygienists in South Africa mainly work in the private sector (Gordon, 2015; Gordon & Rayner, 2004) as this provides more flexibility around working hours, job satisfaction and financial reward, with public sector hygienists facing numerous barriers such as structural constraints and limitations to using an expanded scope (Gordon, 2015; Govender et al., 2013; Lukhozi et al., 2012). Professionals from both mid-level dental professions do not choose the public as their preferred option for work (Gordon, 2015). The above discussion is key as this study is focused on dental professionals in the private sector.

2.2.3 Gender Participation in Dental Professions

The literature points to the changes in gender[14] participation among dental professionals. There have been fears that the feminisation of professions could affect the status of a profession and impact the way a profession is practised (Adams, 2003, 2005). The three dental occupations have clear differences in gender participation.

Dentistry is known for being a male-dominated profession, however, there has been a significant increase in the number of female dentists globally (Parkash et al., 2006; Adams, 2005). Female student enrolment numbers show an increase in the United States (42%), as well as the United Kingdom (50%), while the number of female dentists in the workforce has increased significantly in both Finland (75%) and Russia (48%). Bhayat and Chikte (2019) show that, in South Africa, the number of female dentists almost doubled since 2002. According to Adams (2005), the feminisation of dentistry has not changed the status of the

[14] *In the discussion on gender participation, the researcher wants to clarify that gender construction does not exclude persons who do not identify as male or female.*

profession, or how it is practised. Gender differences among therapists depend on the country of origin, with the United Kingdom and Malaysia having more female therapists, while New Zealand, Tanzania and others have historically had more male therapists. In most countries where male therapists are dominant, there is also a shift toward balancing the numbers according to gender (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008). In South Africa, therapists were previously predominantly male, and currently, more than half (52%) are female, showing a good distribution across genders. The oral hygiene profession is predominately female (97%) across the world (Johnson, 2009), and according to Adams (2003), the feminisation of this profession has slowed the rate of its development. This is similar in South Africa, as almost all hygienists (95%) are female (Johnson, 2008; Gordon, 2015). This shows that in South Africa, there is a discrepancy in the gender of dental professionals across the three occupations, and historically, the dominance of male dentists bestowed them greater control over mid-level professions.

2.2.4 Racial Differences among Dental Professions

Job reservation in the South African dental sector was previously done according to race, where dentistry was previously reserved for the white minority population,[15] and dental therapy was initiated as a profession for a majority population of non-whites (P. Singh, 2011). By 2015, the number of non-white, i.e. coloured, black and Asian/Indian dentists increased sharply (Bhayat & Chikte, 2018). Bhayat and Chikte (2018) also highlight that younger dentists tend to be black and Asian women and that white male dentists make up the majority of older dental professionals. Hygienists qualifying from whites-only universities were previously generally higher in number than at non-white universities, where white hygienists have consequently been in much greater supply. Over the last 20 years, the number of black and coloured hygienists has increased (Bhayat & Chikte, forthcoming). Therapists have remained a profession for blacks and Asians, with very few whites enrolling in this occupation (Masetla & Mthethwa, 2018; Singh, 2011). Racial reservation may have influenced the status and the relations between these three dental

[15] *During apartheid, the South African population was classified into different groups based on racial designations of white, black, Indian and coloured.*

occupations. The race and gender of dental professionals are seen in leadership roles in the dental profession. Many national and provincial government offices and dental associations have been led by mainly white male dentists for years. This means that a certain demographic group has been influential in the advancement of dental occupations.

The gender and racial differences between the three dental occupations may affect their statuses in different ways. The discussion above highlights that when the comparison is made of the supply of these occupations internationally and locally, there appear to be similar trends, with dentists outnumbering mid-level dental professionals. Gender and racial distinctions show an increase among female dentists and therapists as well as non-white therapists and hygienists. The differences in supply and distribution for dental professions may influence the workforce skill mix, which affects the behaviour, the relations between professions, and their professionalisation. This thesis may provide limited insight into gender discrimination in the daily work practices of three dental occupations. The following section emphasises how each dental occupation operates within the labour system and examines local and international labour concerns in this regard.

2.3 Labour Matters Affecting Dental Professions

The expansion of the dental profession appears to be associated with the need for greater patient access to the identification, prevention, and treatment of oral disease. The professional roles of mid-level dental professionals are not well recognised and these professionals are not utilised to their full capacity (Mishler et al., 2018). Nonetheless, and irrespective of the distinctive purpose of each profession to provide care, rivalry has been developing between these three occupations, due to changing regulations and professional endeavours that the different occupations pursue (Adams, 2004; Kleiner & Park, 2010; Markowitz et al., 2017; Nash, Friedman, Mathu-Muju, et al., 2014). Thus, the debates on the skill mix, relevance, level of autonomy, and scope of practice in the dental profession have been intensifying across the world (Brocklehurst & Macey, 2015; Nash, Friedman, Mathu-Muju, et al., 2014; Kleiner & Park, 2010; Richards, 2011). The following section outlines how dental occupations are regulated, what occurs in independent practice, and the working conditions and remuneration concerns affecting them.

2.3.1 Dental Labour Policies

The role of the State is vital for defining and redefining the scope and autonomy of practice, it would be interesting to understand how these are contested daily in practice. Each occupation operates within a legislative framework, which specifies regulations on how its members are permitted to work. Such legislation is usually established to address the needs of the country and to allow for the successful delivery of oral healthcare to its population (as described in Figure 2.2 above). The regulatory matters described below are that of supervision and independent[16] practice, and the range of tasks sanctioned for each of the three dental occupations.

The changing oral health needs of populations across the world increase the need for the dental team to work together to provide greater access to care. Dentists historically worked independently with the first contact with patients; they diagnosed patients' conditions and referred specified tasks, accordingly to a therapist or hygienist (Brocklehurst et al., 2014; Northcott et al., 2013; Ross & Turner, 2015). The progression of mid-level dental professions to offer independent care has changed this work dynamic and created opportunities for dental service provision.

Brocklehurst and Macey (2015) indicate that different skill-mix models include role substitution and role supplementation. Role substitution refers to when different members of the dental team undertake tasks instead of a dentist, while in role supplementation team members augment the activities of the dentist (Brocklehurst & Macey, 2015). Mid-level dental professionals such as hygienists and therapists substitute dentists in many countries doing various tasks. Brocklehurst and Macey (2015) indicate two models of role substitution, namely, integrated and independent practice. Integrated practice is where mid-level dental professionals work within an existing team led by a dentist, while independent practice mid-level dental professionals work independently of another professional (Brocklehurst & Macey, 2015). Australasia has independent practice mainly for therapists; however, several restrictions are in place, such as agreements with dentists for a referral, or being able to provide care for children only. Sweden and the Netherlands were

[16] *The HPCSA describes independent practice as a practice where a registered health profession is conducted by a health practitioner without the supervision of another health practitioner (HPCSA Guidelines to Good Practice Booklet 1.Pdf, n.d.).*

among the first to legalise independent practice for hygienists in 1964 and 1978, with the other European countries following between 1994 and 2001, while North American countries such as Canada have varying degrees of independence for hygienists (Mishler et al., 2018; Brocklehurst & Macey, 2015).

2.3.2 Independent Private Practice

Changes in regulations on autonomy to practice mean that professionals would require the knowledge and skills to make diagnoses and provide appropriate treatment. The competence of mid-level dental professionals to practice independently has been interrogated across the world (Bozia et al., 2023; Freeman et al., 2013; Adams, 2004; Gatermann-Strobel & Perno Goldie, 2005; Freed et al., 1997; Perry et al., 1997).

As seen earlier, only some countries allow hygienists and therapists to work independently, as dentists are not convinced that mid-level dental professionals ought to transition from supervision to autonomy (Reinders et al., 2017b; Brocklehurst & Macey, 2015; Gatermann-Strobel & Perno Goldie, 2005; Johnson, 2008). A recent study by Bozia et al. (2023) shows that out of 26 countries surveyed only 58% allowed independent practice. Further, they cite underlying factors against independence for hygienists are related to financial reasons, opinions about competence level, and final responsibility (2023, p. 293).

There is evidence that therapists and hygienists have appropriate diagnostic abilities, and can recognise treatment needs within their approved scope (Brocklehurst et al., 2014; Galloway et al., 2002; Freed et al., 1997), yet dentists oppose independent practice for mid-level dental professionals, arguing that they lack competence. Kravitz and Treasure (2007) argue that dentists in the UK have little support for mid-level dental professionals to work independently and agree to employ hygienists, but are less likely to hire therapists. In a systematic review of the literature, Reinders et al. (2017) found that only a minority of dentists were positive about independent practice for hygienists, while the majority of hygienists stood in favour of it. In the USA, there is much debate about the inclusion of therapists in the dental team, whether therapists will provide equity, and the protective concerns of the dental profession (Edelstein, 2011).

With the international backdrop of dissatisfaction toward independent practice for mid-level dental professionals, there is evidence that dentists in South Africa are also dissatisfied with dental therapists' access to independent practice (Singh, 2011). This stems from the approved regulations for independent practice, as dentists previously held exclusive rights to practice independently, while therapists and hygienists practised under a dentist's supervision according to an integrated model. Therapists gained independent practice in 1992 (Singh & Combrinck, 2011) and hygienists advocated for independent practice in the 1990s (Gordon & Rayner, 2004; van Wyk et al., 1998) and were granted this status in 2013. This is on condition that mid-level dental professionals work under supervision[17] for one year before practising independently. According to Bhayat and Chikte, in 2015, two-thirds of therapists (66%) were registered for independent practice with 33% working under supervision, while 91% of hygienists worked under the supervision of a dentist (Bhayat & Chikte, Forthcoming). The difference in independent practice registrations would be that hygienists had only received this status in 2013. In South Africa, the independent practice may have influenced tension within the dental profession, with the nature of relations between these professions unclear. Therefore, this study seeks to examine such tensions and the influence independent practice has on their professional relations.

2.3.3 Scope of Practice

Another objective of government regulation is to specify procedures to be performed by the different professions, known as their 'scope of practice'. Across different countries, tasks performed by therapists and hygienists vary (Bozia et al., 2023; Chen et al., 2018; Reinders et al., 2017; Brocklehurst & Tickle, 2011; Johnson, 2008; Langelier et al., 2016). The number and type of procedures have implications for their professional status, referral, and teamwork.

The way in which dental occupations operate within the labour market intensifies the professional hierarchy. Dentists perform mainly a curative role, while mid-level dental

[17] *The regulations for dental therapists indicate that supervision can be performed by a dentist or a dental therapist, while the regulations for oral hygienists indicate that supervision can be performed by a dentist, a dental therapist, or an oral hygienist (Govt. Gazettes for Therapist and hygienist scope of practice, HPCSA).*

professionals perform largely preventive functions (Baltutis & Morgan, 1998; Gordon, 2015). For mid-level dental occupations, professionals have been striving to gain control over the work that they perform (Brocklehurst et al., 2014; Johnson, 2008; Nash, 2012; Reinders et al., 2017b). As seen internationally, the type of work performed by each professional group has further ingrained the hierarchical system, with the dentist entrusting basic work to a mid-level dental professional, so that the dentist has the time to do more complex work (Gallagher et al., 2013; Abelsen & Olsen, 2008; Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008). A study from the UK by Reinders et al. (2017) found that most dentists and hygienists are positive about the extended scope of hygienists. Further, Bozia et al. (2023), showed that worldwide there is a lobby for the expansion of the scope of hygienists to administer local anaesthesia. This is mainly because the number of dentists is not expected to keep pace with the demand for dental services (Bozia et al., 2023, p. 288). However, they also found that in these countries, many hygienists were not allowed to buy, store or do a full block anaesthesia. With regards to dental restorations, Bozia et al (2023) found that only 15% of the 26 countries surveyed, were allowed to place restoratives. This shows that even when hygienists are granted certain procedures there are constraints to them performing these freely.

In South Africa, studies have shown mid-level dental professionals advocating for the expansion of their duties. Oral hygienists wanting additional procedures, such as local anaesthesia, minor extractions, and emergency treatment (Potgieter, 2007; Gordon & Rayner, 2004; van Wyk et al., 1998), and therapists striving for the inclusion of crown and bridge-work, dentures, the prescription of medicines, endodontic treatment and surgical extractions (Gordon, 2015; Singh, 2011). This has been a concern for dentists as they feel that mid-level dental professionals would not be fulfilling their primary roles (Bhayat et al., 2008; Singh, 2011).

Regulations about the scope of practice for mid-level dental professionals in South Africa have expanded several times over the past three decades.[18] The specific procedures which were included in the expansion of oral hygienists' scope of practice in 2000 and 2013 can be

[18] *E.g. Therapists could prescribe medicines and perform aesthetic procedures since 2010, while oral hygienists could perform local anaesthesia and basic restorative work since 2000 and bleaching and diagnosis-making for oral disease since 2013 .*

seen in the figures below. These procedures include several aspects of specialist care such as Orthodontics, Prosthodontics, and Periodontics which hygienists share with dentists. As well as common procedures shared by all three dental professionals, such as making a dental diagnosis appropriate treatment plan, and performing local anaesthesia and sealant restorations.

2000:

- ART, cervical abrasion lesions, temporary restorations and temporary cementation of inlays, crowns and bridges;
- Placement of tissue conditioners;
- Orthodontics: cephalometric tracings and the relief of trauma caused by intra-and extra-oral appliances;
- Cytological smears, and
- Local anaesthesia

2013:

- Periodontal splinting;
- Sealant restorations;
- Tooth whitening;
- Fabrication of vacuum formed mouth guards;
- Developing, implementing and evaluating oral health promotion programmes ;
- Making a dental hygiene diagnosis and developing an appropriate treatment plan within the scope of the profession of oral hygienist, and
- Smoking cessation

The granting of independent practice contributed to this expansion of procedures, which allowed for dentists' scope to be further disseminated amongst mid-level dental occupations. The contest for increasing the scope of practice has become evident through varied opinions between professional bodies, regulatory boards, training institutions, and other interested parties.

In the section to follow, aspects of the common daily labour practices for each of the three dental occupations in South Africa describe the possible sources for contestation. Government regulations[19] specify the procedures executed by the three occupations through the scope of practice. According to regulations on the scope of practice, dentists can perform any procedure in the mouth, while mid-level dental professionals perform

[19] *These include government gazettes, which describe the scope of practice for therapists, hygienists and dentists.*

selected procedures, with therapists' and hygienists' scopes varying slightly. To facilitate later analysis, in *Table 1* I have categorised extracts of the scope of practice for dental occupations into the following: preventive and promotive, curative, surgical, and rehabilitative procedures.

Table 1 Selected examples of procedures performed by dental providers

	Preventive and Promotive	Curative	Surgical	Rehabilitative
Dentists	**Diagnosis making, fluoride treatments, fissure sealants, patient education, health promotion**	**Dental restorations** including root canal treatments, **local anaesthesia, scaling and polishing and root debridement, aesthetic procedures**	**Dental extractions under LA** and GA, maxillofacial surgical procedures, and biopsies, prescribing medication	Dentures, **including relining of dentures** crown and bridgework, basic orthodontics
Therapists	**Diagnosis making, fluoride treatments, fissure sealants, patient education, health promotion**	**Dental restorations, local anaesthesia, sealant restorations, scaling and polishing, root debridement, aesthetic procedures**	**Dental extractions under LA**, treatment of bleeding post-extraction, alveolitis and sutures, treatment of minor trauma including splinting of teeth, prescribing medication	
Hygienists	**Diagnosis making, fluoride treatments, fissure sealants, patient education, counselling, health promotion**	Selected restorations (Temporary, Cl V, sealant restorations), **local anaesthesia, scaling and polishing, root debridement, aesthetic procedures**		**Relining of dentures**, temporary replacement of crown and bridgework, limited orthodontics

Table 1 above illustrates a sample of the division of labour of the three dental occupations, indicating that there are several procedures that they have in common. Dentists perform every procedure in all four categories, while they share specific procedures in each category with the dental therapists and oral hygienists. The highlighted text in the table indicates the procedures, which are included in the scope of practice of all three occupations. Dentists and therapists provide similar curative and surgical services, such as restorative procedures, non-surgical removal of teeth under local anaesthesia and the management of post-extraction complications (seen in *Table 1*). However, dentists perform additional rehabilitative procedures, such as the fitting of removable and fixed prostheses such as

dentures, crowns and bridges, performing simple orthodontic and endodontic procedures, and prescribing medication and taking biopsies (Bhayat & Chikte, 2019).

The mid-level dental professionals' scope differs mainly in the surgical and rehabilitative categories. Therapists perform procedures such as extractions and dental restorations, while hygienists perform selected rehabilitative specialist dentistry work such as limited orthodontics and prosthodontics.[20] During an oral examination, the mid-level dental professional assesses patient risks, makes a diagnosis, and develops a comprehensive patient-centred treatment plan (within the scope of the profession of oral hygienist/dental therapist). They perform preventive procedures such as scaling and polishing, the application of fluorides, pit and fissure sealants, and preventative resin restorations.

A study by Lukhozi et al. (2012) showed that hygienists who gained expanded scope do not use those procedures daily, and the dentists they work with are not fully aware of what the expanded scope of a hygienist comprises. Another point raised by numerous authors emphasises that even with the expansion of scope, mid-level dental professionals mainly perform basic procedures (Mishler et al., 2018; Gordon, 2015; P. Singh & Combrinck, 2011). It is not clear how much work is referred to and/or delegated between the three professions and how the expansion of scope for mid-level dental professions affects the hierarchical system within the dental sector.

In conclusion, the discussion about work practices has revealed that mid-level dental occupations have greater access to independent practice and an expansion of their scope. This can be seen through the following challenges in the workplace; first, mid-level dental professionals have become further established through the regulation of independent practice. Second, several procedures within the scope of dentists have been fragmented and dispersed among mid-level dental professionals causing contestations within the dental profession. This study will examine these tasks within the dental profession. Third, dentists' legal control over mid-level dental occupations has been weakened. Fourth, numerous

[20] Such procedures must be prescribed to an oral hygienist by a dentist or dental specialist.

studies show that mid-level dental professionals mainly perform basic tasks, which raises the question of why the extended scope is not being implemented.

This study thus examines the ways in which South African regulations have shifted the professional boundaries of occupations, and how this has affected relations within the dental profession. The uncertainties around the allowance of expanded scope for mid-level dental occupations trigger questions about their preparation for work (which will be discussed in the next chapter). To further this discussion, I move to the workplace environment, by outlining the daily practices of the three dental occupations and how these relate to one another.

2.4 Daily Practice and Professional Relations

This section outlines the working conditions of dental professionals and their satisfaction within their occupations. It then delves briefly into economic factors that influence dental practice and how these influence professional relations.

2.4.1 Independent Private Practice Patterns and Working Conditions

Several studies examine practice patterns and working conditions and report on how this influences job satisfaction within the dental profession. Adams (2005) shows that dentists are largely satisfied with their profession and irrespective of gender, dentists have similar working hours and professional goals for private practice. Dentists have various work options, which include owning a solo practice, being an associate/partner, or being employed in a large organisation (e.g. Medicross or Intercare) (Brown, 2012). According to Andersen (2009), many dentists select the private sector, as it is economically more rewarding: they practice autonomously and offer a range of dental services, with flexible time schedules. Adams (2005) found that dentists differ according to the type of practice and income, with male dentists mostly in solo practice, with higher income, and female dentists practising as associates with lower incomes. In South Africa, dentists are generally satisfied with their profession due to the autonomy and flexibility of independent private practice, while their dissatisfaction comes from working long hours and restricted funding (Matjila et al., 2019; Snyman, 2016). These dentists work between 40 to 55 hours and treat

more than seventy patients per week (Snyman, 2016). Snyman (2016) further indicates that half of the dentists surveyed felt their practices were busy, while a third felt that they were not busy enough. This reveals that many dentists in South Africa are satisfied in private practice, while there is at once a growing trend of discontent in terms of the economic practicalities of the profession.

In comparison, examining mid-level dental practice patterns, Singh (2014) found that therapists in South Africa were discontented with their work, as their scope is limited in the private sector, and they are unhappy with the lack of posts, and ill-functioning facilities in the public sector (Gordon, 2015; Singh, 2014). Approximately half of the therapists (47%) have been working in the private sector since the early 2000s, with 10% in public service, while nearly 40% pursue study further (specifically dentistry) or leave the profession to enter into different sectors (Singh, 2014). Therapists are often employed by dentists in their private practices to provide basic dental care. Results from a South African national survey of oral hygienists published by Gordon and Rayner (2004) indicate that most hygienists (73%) work in the private sector, 14% in public service, and 13% in non-traditional settings. More than half (60%) of hygienists are employed by dentists on a full-time basis, while the rest work part-time (Gordon & Rayner, 2004). According to Toogood et al. (1998), hygienists work for six to eight hours daily. Regarding basic conditions of service, about half of these hygienists work full-time, and a fifth work as part-time hygienists with employment contracts (Gordon & Rayner, 2004). This highlights the vulnerability of hygienists in the employment of dentists. Since the autonomous practice option was promulgated for oral hygienists, there has been no research on their practice patterns in independent private practice.

In summary, these work and practice patterns show that dental professionals in South Africa prefer working in the private sector with dentists being the main employer of hygienists (working mainly under supervision) and therapists mainly working independently (Gordon, 2015; Bhayat & Chikte, 2019). Keeping this in mind, I now move on to literature that describes job satisfaction in the different occupations and the relationships these occupations have in the workplace.

2.4.2 Job Satisfaction and Work Relations

The previous section covered types of practice patterns and basic conditions of employment. This section takes the discussion forward and involves examining the satisfaction within the working environments of dental professionals and their interprofessional relations.

Several studies show that dentists do not delegate all legislated procedures to hygienists, however, they have high regard for hygienists' involvement in their practices. This includes hygienists' clinical and general roles, such as patient management and interpersonal skills (Mishler et al., 2018). Hygienists feel their professional status is high, and see it as equal to that of physiotherapists, nurses, radiographers, and dental therapists (Toogood et al., 1998). Another study shows dentists' opinions of hygienists in terms of their role definition and patient care is lower than what hygienists think of themselves e.g. "Most hygienists reported they perform clinical examinations all of the time, whereas only two-thirds of the dentists reported the hygienist always performs an examination" (Pritzel & Green, 1990, p. 269) Despite oral hygienists in South Africa feeling vulnerable, as mentioned above, there is evidence that they believe their job to be worthwhile, and are satisfied with their occupation (Gordon, 2015; Gordon & Rayner, 2004; Toogood et al., 1998). It appears that hygienists and dentists generally have better interprofessional relations, even when dentists have control over what hygienists do. Yet, there are contestations over the boundaries of the two occupations, where there is evidence that dentists are not keen for hygienists to perform certain procedures. On the other hand, dental therapists generally feel dissatisfied with their occupation and that they are not valued members of the dental team (Naidu et al., 2006; Nash, Friedman, Mathu‐Muju, et al., 2014). In South Africa, the type of work the therapist is allowed to perform is a minor part of what a dentist does and is not specialised as the hygienist. Therapists are less satisfied than their counterparts in other countries and less satisfied than hygienists in SA (Bhayat & Chikte, 2019; Gordon, 2015; Singh, 2014). Their dissatisfaction stems from their poor working conditions, limited scope, and poor remuneration (Singh, 2014). As a solution, Singh (2011) proposes that the number of

therapists in the private sector ought to be decreased by allowing them to convert to dentistry.

The literature suggests better cooperation between dentists and hygienists, while there is much more discord among dentists and therapists. The kind of work performed in practice and the financial rewards received affect the satisfaction experienced within the different occupations. This leads the discussion to the economic influences on occupations.

2.5 Economic Challenges in the Dental Sector

Another factor in terms of the relations between the three dental occupations is linked to the economic viability of private dental practices/businesses. Dentists have largely been private practice owners and employers of mid-level dental occupations, which allow these professionals little control over their remuneration. The approved regulations for the independent practice of therapists and hygienists in South Africa now permit these mid-level dental professionals unrestricted access to the patient base, which increases competition for labour and income, especially in urban settings.

Considering that therapists and hygienists offer mainly preventive procedures, it is pertinent to explore how this type of care may contribute to economic competition. There is a very low uptake of routine preventive dental services in South Africa even among those with medical insurance (Ayo-Yusuf et al., 2013). These researchers show that low socioeconomic positions and certain racial groups are significantly less likely to keep preventive dental visits. This could mean that professionals from the three dental occupations may compete for the few patients who seek preventive services and that public awareness of prevention must be enhanced (to be discussed in the section that follows). However, other factors also impact the economic competition within the dental sector.

2.5.1 Political and Economic Effects on Dental Utilisation

Several politically directed measures, such as striving for universal health care, and introducing a national health insurance scheme (described in Section 2.1) have effects on service provision and income in the dental profession. According to Ayo-Yusuf et al. (2013),

introducing such measures may encourage the public to increase the utilisation of preventive dental services. However, Ji and Chen (2016) describe challenges with the introduction of universal health care, as it must consider the required health workforce, the introduction of new technologies, and information systems. This type of financing system will comprise the pooling of public and private funds and will demand the cooperation of policymakers, dental providers, taxpayers, medical aid insurance companies, and patients (Ji & Chen, 2016). In South Africa, the implementation of such collaborative strategies has been a difficult task for many sectors. With the skewed number of dental professionals in the public vs. private sectors, and many working in the private sector, there is a small part of the population that have access to medical aid/insurance, which shrinks the pool of patients over which dental professionals can compete even further.

The impact of economic shifts also affects the income of independent dental practitioners. Dental utilisation drops when there is a significant economic crisis (such as the 2008 recession), which leads to the poor and unemployed becoming most exposed to not having their dental needs met (Fernández et al., 2015; Kostas & Dimitris, 2017; Manski et al., 2014). Economic fluctuations have implications for South African dental utilisation and thus the income of dental practitioners could decrease. This could also play a role in the competition between dental professionals providing dental care in the urban private sector.

In summary, this section warns us that political and economic changes influence the utilisation of dental services, which affects the relations between dental professionals.

2.5.2 Payment for Dental Services

The payment for dental services is done either "as a fee for service",[21] or by medical aid/insurance, which has become the most common form of payment in developing countries (Garla et al., 2014), despite this coming from a minority of the population. Dentists previously set tariffs for procedures themselves, taking into consideration their expenses from techniques and innovations in dentistry. In 2004, a decision by the

[21] *This is where payment is made immediately, this money comes from the patients' disposable income (Garla et al., 2014)*

Competition Commission prohibited such pricing among practitioners and organisations (such as SADA) as it would be regarded as collective bargaining or price-fixing (Green, 2014). This allows medical schemes to set tariffs for dental procedures, which puts dentists at the mercy of such schemes. Snyman (2016) and Green (2014) report that dentists think that dental procedures are priced at considerably low rates. Medical insurance payouts have become one of the most significant challenges that dentists encounter in their practices (Snyman, 2016). As a consequence, even though it is regarded as one of the main forms of payment, control mechanisms by medical aid companies have made it difficult for dentists to claim their payments.

Green (2014) reported on a statement about medical schemes from the chief executive officer of the South African Dental Association (SADA):

> Dentists are losing their practices left, right and centre because of the unsustainability of the current model. At present, funding private dental health and treatments falls under the ambit of a medical scheme but… oral health benefits for members have been decreasing year on year. Medical schemes many years ago provided quite extensively for oral health. Over the years, what's happened is they have taken the oral health benefit out of the risk pool of schemes and put it in your day-to-day benefits... Members' day-to-day benefits, which are often in the form of a savings account – a portion of their own contribution they must ration over a period of a year – need to cover, among other things, over-the-counter medicine and general practitioner visits. That means dentist visits or procedures need to compete in terms of share of wallet with all these other things, meaning patients often neglect their mouths. (Green, 2014, para 1)

The dentists feel that their income is affected negatively by the financial limitations implemented by medical schemes, and this impacts the way they manage their practices. However, according to Green (2014), the Discovery Health medical scheme refutes that dentists are struggling financially, or losing their practices. The scheme indicates that the number of claims by dentists has been increasing, where dental visits doubled compared to open medical schemes, which warrant the effectiveness of their medical savings account.

Thus, the conflict between dentists and medical schemes produces further competition for work as it places an economic strain on all stakeholders within the sector.

Dentists in the private sector are placed in a position where they are searching for strategies to compensate for their lowered income. Snyman (2016) outlines the different strategies dentists use to deal with reduced medical insurance payouts. These include charging fees that schemes will pay for; pre-authorisation and determining member benefits before treatment; knowing the rules of the different medical schemes, and regularly following up on payments from medical schemes. Some dentists avoid medical schemes by having cash-only practices, requiring patients to make upfront payments, and claiming back from medical insurance (Snyman, 2016, pp. 15–16).

The other major challenge that dentists are confronted with is when patients must pay "as a fee for service", which often leads to non-payment. This is because there is a notable decrease in the disposable income of patients (Snyman, 2016; Green, 2014). With dentistry being expensive, any shifts in the economy make it difficult for patients to find funds to gain access to dental professionals. Dentists use various strategies when dealing with limited disposable income, they set rates according to patient demographics, work within the patient's budget, provide affordable treatments, extend payment plans and down-payments, assist with interest-free financing, and assist patients in procuring loans (Snyman, 2016). These strategies by dentists are all attempts to secure economic feasibility for their practices. The literature describes mainly remuneration for dentists, where there is limited coverage of the challenges that oral hygienists and dental therapists experience in this regard.

2.5.3 The Contribution of Mid-level Professionals to Dental Practice

Preventive, therapeutic and educational services offered by mid-level dental professionals are said to make a significant economic impact on consumers, and benefit communities where access to dental services is poor (Stull et al., 2005). In a review conducted as early as the 1980s of the economic contribution that hygienists provide to private practices, Walsh (1987) found that preventive services were less remunerative for dentists when they

performed these themselves. The recommendation, therefore, was for dentists to delegate preventive services to hygienists. This being said, Walsh indicates that practices with a low number of patients will not benefit from hiring a hygienist as it is not economically beneficial, however, in practices with an excess of patients, the employment of hygienists contributes significantly to the productivity of the practice. This is because the payment for preventive services is lower and time-consuming for dentists, and they would therefore not provide such services themselves (Lewis, 2001; Walsh, 1987). According to Lewis (2001) the benefits of unsupervised (independent) hygiene practice, will increase access to dental care for special groups e.g. the elderly living in institutions. When compared to hygienists, dental therapists are viewed as costly for dental practices and their economic impact is limited. This is because the lower tariffs charged for patient services generated by therapists are less than the cost of their salaries and other overheads that the practice has to carry (Bailit et al., 2012; Beazoglou et al., 2012; Harris & Burnside, 2004). This discussion highlights dentists' readiness to employ and delegate services to hygienists as they contribute to productivity. The demand for therapists by dentists in private practices is limited because the costs of hiring them outweigh the income they bring to the practice (Beazoglou et al., 2012; Bailit et al., 2012).

2.5.4 Economic Viability of an Independent Dental Practice

Another concern for dental practitioners is the initial capitalisation costs for establishing an independent private dental practice/business[22]. In South Africa, the start-up costs range from approximately R700,000 for a basic one-chair practice, which excludes the cost of the premises, to R6 million for a four-to-five-chair practice with sophisticated technology (Green, 2014). This is prohibitively high when compared to medical professionals. In historically less wealthy areas, where patients have limited access to advanced dentistry, Black dentists struggle to establish and maintain private dental practices in their communities, because patients don't have the income they would require to access dental care (Matjila et al., 2019; Green, 2014). Dentists express increasing economic challenges with opening private practices (Snyman, 2016).

[22] *Independent dental practice is used instead of multidisciplinary practice as this study wants to zone into how independent oral hygienists are coming in a single practice setting.*

When considering the economic viability of independent practice for mid-level dental professionals, concerns have been noted about whether it would be profitable for these professionals to open their own practice/business. Beach et al. (2007) developed a business model to assess the break-even point of independent hygiene practice through varying initial capitalisation, financial interest, employee salaries, and the owner's draw. The authors found that under the ideal regulatory and financial environment, a practice would break even after 26 months. However, the owner would not equal the earnings of a salaried hygienist until the initial loan is paid off after seven years (Beach et al., 2007, p. 250). Their and other findings suggest that under perfect conditions, the profitability of an independent hygiene practice may be likely (Beach et al., 2007). Dental therapists working in independent practices feel that they are economically successful, however, they are concerned about the differences in tariffs for dentists and therapists (Singh, 2011). Their main concern is that their scope is limited and that their pursuit of expanded scope would place them in a better economic state for the private sector.

2.6 Conclusion of the Labour Market of the Dental Sector

To conclude the discussion on the labour market of dental occupations, it is evident that contestations between dental occupations are rising globally. While it seems that there is cooperation among some occupations, there are still contestations about the types of procedures, which ought to be performed by mid-level occupations (Brocklehurst et al., 2014a; Johnson, 2008; Nash, 2012; Reinders et al., 2017b). In South Africa, legislation has sanctioned changes for mid-level dental occupations based on the need for greater primary dental care provision, where these changes have increased the sharing of common procedures, influenced job satisfaction, and raised challenges around remuneration, which have affected relations between the three dental occupations. This study, therefore, sought to establish the perceptions of dental professionals in South Africa regarding the nature of these changes.

The chapter highlights several shifts in the labour market both internationally and locally. These shifts are as follows:

Firstly, there are discrepancies in terms of the distribution and supply of dental professionals. This can be seen through the ratio of dental professionals to the population as many countries including South Africa have a general shortage in the dental workforce to manage the burden of disease. This is further exacerbated by the low number of mid-level dental professionals. The concerns about gender distribution reveal a high number of males within dentistry and the oral hygiene occupation nonetheless a highly feminised occupation, leading to gendered domination by dentists. The remnants of racial discrimination in South Africa position black dental professionals at a disadvantage in terms of their lower numbers.

Secondly, regulatory developments for the three dental occupations have highlighted that the scope and autonomy for mid-level dental occupations depict these professionals becoming more established through autonomous practice while dentists' control over mid-level dental occupations has been weakened. Even though more of dentists' scope has been dispersed among mid-level dental professionals, mid-level dental professionals take on mainly their initial scope.

Thirdly, the division of labour in dental occupations influences daily practices and professional relations. Competition has arisen out of mid-level dental professionals' expanded roles, which are placing a strain on dentists' labour and remuneration opportunities.

These matters have prompted reservations regarding mid-level occupations' daily work practices as well as the adequacy of their education and training. Therefore, it is during this transitionary time in the search for the professionalisation of mid-level dental occupations that this study finds its relevance. This study will assist in understanding uncertainties that have arisen about the preparation for work and what occurs in daily practice. It is unclear how recent changes to the scope of practice in South Africa are perceived and experienced by each of these occupations. Thus, it would be essential to develop a richer understanding of how each occupation is prepared for work and how this influences their perceptions of the decision-making distributed across the three occupations. The next chapter, therefore, directs the discussion to education and training matters for the three dental occupations.

CHAPTER 3

LITERATURE REVIEW: DENTAL EDUCATION AND KNOWLEDGE

3. SYNOPSIS OF CHAPTER 3

Up to this point of reviewing the literature, the focus has remained on the labour market and work in the dental sector and has not included much detail about the preparation for the work of dental professionals. Professional work cannot be discussed in earnest without investigating the elements of education and training that create the knowledge and skills required of a qualified professional. The identification of improvement areas and the expectation of gaps within dental education and the labour force in South Africa need us to access a transparent curriculum. This chapter considers the literature on dental education and training and explains the influence that educational preparation has on the advancement of dental occupations.

A discussion about the requisite knowledge and skills to address the oral health disease burden in the country is covered here. The purpose of each occupation and the length of training influence the distinctiveness of curricula. This takes into account how curriculum design influences the advancement of dental occupations and how these relate to the scope of practice for each occupation. This could provide further insight into why the country's oral health disease burden continues to be unmet despite the regulations to professionalise mid-level dental occupations.

This chapter reviews the literature on the undermentioned aspects of education and training. Section 3.1 examines skills planning and the supply of dental occupations and makes links to the demand for the different occupations. Section 3.2 reflects on the different curriculum paradigms that underpin qualifications and curricula that engender professionalisation. Section 3.3 provides an account of knowledge and curriculum debates within dental education to highlight the curriculum knowledge that each occupation values. This chapter thus aims to show how education and training play a role in the advancement of dental occupations.

3.1 Dental Skills Planning and Supply

The ethical challenge of dental care disparity described in Chapter 1 suggests that it is essential for an appropriate number and mix of dental professionals to be trained well and to work toward combating disease. However, what we see is that the skills requirements and training trends of countries are sometimes not aligned, i.e., dental education does not necessarily comply with the skills needed to manage the oral disease burden of a country. Chapter 2 shows that the supply of South African dental professionals is not sufficient to meet the disease needs, which contributes to the surplus of untreated diseases (Singh, 2011; van Wyk & van Wyk, 2004). This suggests that there should be greater consideration of the skill mix in dental occupations, the types of qualifications offered, the length of training, and the pathways into different occupations.

3.1.1 Dental Training: Skills-mix

Dental professionals' training has been reviewed as to its length and relevance to delivering a practitioner with the required knowledge and skills. The duration of training of dentists is lengthy and expensive for both individuals and governments, which adversely adjusts the supply of these professionals (Pyle et al., 2006). So, instead of training more dentists in the context of increasing oral disease burdens (mainly in developing countries) and rising treatment costs (in more developed countries), the training of mid-level dental professionals has become a trend.

Across the world, mid-level dental occupations have seen the development of different options for skills to practice. New Zealand and Australia have created mid-level dental professionals, namely 'oral therapists', who complete dual training in dental therapy and oral hygiene training and could opt to work as either-or-both (Coates et al., 2009; Nash, 2012; Reinders et al., 2017b). These changes in New Zealand occurred due to legislative requirements for registration, workforce shortages, and improved educational and clinical practice requirements (Coates et al., 2009, p. 1001). In a country such as the Netherlands, there has been a significant increase in the supply of mid-level dental professionals, such as hygienists and therapists (an increase in the number of hygienists at 43%, which means almost 300 more per year). The length of their training increased from two to three years

(Nash, 2012; Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008; Reinders et al., 2017). Another instance is the United States, where debates were about whether to include therapists in their oral health workforce (Nash, 2009; Nash et al., 2017). In addition in the USA, there has been lobbying for the introduction of advanced dental hygienists, which would grant them greater scope and increased autonomy (Darby & Walsh, 2014). This shows that mid-level dental professionals are being introduced in more countries than before, with increasing scope and autonomy. Whereas, in Africa, there has been a much slower provision of mid-level dental professionals, which I discuss below. The next two sections outline how dental schools supply dental professionals and present pathways for advancement.

3.1.2 Dental Training: Supply

Globally, there are significant differences in the number of dental training programmes offered, and a few examples are outlined below. In a developed country such as the USA, there are approximately 70 dental schools graduating dentists approximately 7000 dentists per annum (ADA, 2022). Dental therapy has been introduced slowly, with only a handful of states such as Alaska and Minnesota offering training (Mertz et al., 2021). There are approximately 335 dental hygiene education and training programmes in the USA, with approximately 6,700 dental hygienists graduating annually (ADEA Commission on Change and Innovation in Dental Education et al., 2006).

According to Komabayashi et al. (2006), China has approximately 50 dental schools, and graduates are awarded a Bachelor of Dental Surgery degree (BDS). About 10 dental schools provide a seven-year programme, which combines a five-year BDS degree and a two-year Master's degree, with PhD programmes available (ibid.). There are no hygienists or therapists trained in China, and the dental team comprises dentists, denturists, dental nurses, and dental technicians (Komabayashi et al., 2006).

A developing country such as Brazil has 191 higher education institutions which grant degrees in dentistry (Saliba et al., 2009). Furthermore, they note that around 10,000 professionals graduate per year, which is one of the highest rates in the world. Brazil also

does not train oral hygienists or therapists but instead has an equivalent to the hygienist, namely an oral health technician, who has operated legally since 2008 (Sanglard-Oliveira et al., 2012).

In Africa, twenty-three dental schools offer training for dentists, with less than four countries offering training for mid-level dental occupations (Thorpe, 2006). In South Africa, five dental schools train approximately 250 dentists, with fewer than 50 therapists and 80 hygienists qualifying per annum (*Professional Boards - HPCSA*, n.d.). Dental therapists are trained in Botswana, Nigeria, South Africa and Zimbabwe, while oral hygienists are trained in only four countries in Africa, viz. Mozambique, Nigeria, South Africa, and Swaziland (Thorpe, 2006). In South Africa, a Bachelor's degree in Oral Hygiene is offered at five institutions, making South Africa the biggest provider of training for hygienists in this region (Thorpe, 2006). Edgington, Pimlott and Cobban (2009) argue that training should focus on primary oral health care provision and prevention, due to the much-needed services required by so many. Yet, in Africa, where the need for preventive care is high, few dental schools offer training mainly for dentists, with less than a handful of countries offering training for mid-level dental occupations (Thorpe, 2006). This shows the increase in the number of dentists, while there is a slow expansion in mid-level dental training in Africa and South Africa. This slow supply of professionals has been questioned by Thorpe (2006) and Lalloo (2007), indicating that the oral disease needs in the continent might not be met. What can be seen from this is:

- The supply of dental personnel is much higher in developed countries with much higher numbers of hygienists being trained than therapists (as therapists have not been accepted fully by many countries).
- In Africa and South Africa, training quantities are not sufficient to meet oral disease demands, with very few mid-level dental professionals being trained.

3.2 Education Models in the Dental Profession

Education and training differ for the three dental occupations across the world. The exploration of the different education models and the learning pathways which exist can be linked to the perceptions of preparation for mid-level dental professionals in this study. This

review of the literature may be used to investigate how hierarchies in dental practice are initiated or to examine the contradiction of expanding the scope of mid-level dental professionals and their limited access to postgraduate training opportunities.

3.2.1 Developments in Dental Education

In most countries, dentists' entry into general dental practice requires a bachelor's in Dental Surgery (BDS/BChD). According to Donaldson et al. (2007), students generally start dental training after completing their secondary education, with this type of curriculum lasting at least five years. In countries such as Canada and the United States, dental students must conclude predental education of three to four years at a college or university. This is seen as a permit to access dental school, which has a four-year curriculum (ibid). Dentists may undertake a postgraduate qualification and specialise in dental specialty areas such as Prosthodontics, Orthodontics, Maxillo-Facial Oral Surgery, Community Dentistry and Periodontology & Oral Medicine. There is also the possibility for further postgraduate study for general dentists who wish to complete an MSc Dent or Ph.D.

Internationally, basic qualifications for hygienists and therapists have shifted from being mainly diploma programmes to now having pathways from Bachelor's, Master's, and PhD programmes (Chen et al., 2021; Johnson, 2003). This shift reveals that there has been substantial development in the education and training for mid-level dental occupations.

Dental therapists' entry to general dental practice requires a Bachelor's in Dental Therapy (BDT), which is a three or four-year degree. There are no specific postgraduate qualifications for therapists, however, they may do the MDent and PhD postgraduate qualifications, which are offered to general dentists. Multiple studies show that dental therapists tend not to be well accepted in dental training institutions (Cutler, 2021; Satter et al., 2020; P. Singh & Combrinck, 2011; Wanyonyi et al., 2014). There is a plea for dental schools to introduce interprofessional training early so that dentists are introduced to the role and scope of mid-level dental professionals (Chen et al., 2021; Cutler, 2021).

Several studies describe the education and training of hygienists and their qualifications (Johnson, 2003; Kanji et al., 2011; Luciak-Donsberger & Eaton, 2009). A study by Johnson (2009) profiling the education and training of hygienists in twenty-one countries indicates that educational models used for entry to practice differ. Ranging from two-year 'Diploma' programmes, three-year 'Diploma' or 'Baccalaureate' degrees, and four-year 'Baccalaureate' degrees with a few countries offering Master's Degrees. Most entry-level programmes offered are two to three-year 'Diploma' or 'Associate Degrees' (Johnson, 2009a). There has been a shift from the Diploma towards the Baccalaureate degree qualification as seen in many countries, including South Africa (Johnson, 2003; Kanji et al., 2011). This indicates that massive headway is being made toward professionalising the occupation. There have been advocates appealing for the education of hygienists to improve so that the public can have the same respect for this occupation as other allied health occupations, where:

> An associate degree no longer assure[s] that dental hygienists would prosper in our global, knowledge-based economy. Professions ha[ve] to be educationally competent to earn societal trust and recognition. As a whole, dental hygienists [a]re generally less educated than practitioners in occupational therapy, physical therapy, physician assistant, and audiology (Smith, 2011; p. 37).

The shift toward professionalising the oral hygiene occupation through enhancing the types of qualifications has introduced more academic traits, with the intent to prepare students for expanded roles, and enable critical thinking and the use of evidence-based knowledge for decision-making[23] (Chen et al., 2021; Kanji et al., 2011). This would include the expansion of their clinical functions and shift to other internationally defined roles, thereby developing oral hygienists who could operate in diverse contexts. There are only a few countries with specific Oral Hygiene Master's degrees, which compels students to complete a Master's degree in another discipline. There are currently only four doctoral programmes internationally, with some countries under possible development. This is seen as a concern by many researchers as it affects the quality of research, which consequently limits

[23] *It is not clear which are the expanded roles Kanji et al. (2011) refer to, and whether these roles will depend on disciplinary knowledge from the sciences. Their notion of 'critical thinking' and 'evidence-based decision-making' refer to the student being able to critically appraise the literature and apply their conceptual knowledge to the practice.*

theoretical knowledge development (Vergotine, 2015; Cobban et al., 2007; Luciak-Donsberger, 2003).

What can be seen from this is:

- developments in the education and training of dental occupations are occurring throughout the world, with new models and policies for training dental occupations being introduced and considered;
- dental qualifications have increased in terms of their length, with the advancement toward bachelor's degree qualifications for mid-level dental professionals;
- interprofessional training is being advocated for introduction in dental schools to allow for better teamwork after training.

Education and training in dental occupations require further investigation to understand the role that they play in the professional identities of each occupation.

3.2.2 Dental Qualifications in South Africa

Over time, education and training within the dental profession have evolved and a summary of what has occurred in South Africa is provided here. The purpose of each dental occupation and their length of training differ and influence the distinctiveness of their curricula. Curricula are accredited by various national bodies; namely the South African Qualifications Framework (SAQA), the Council of Higher Education (CHE), and the Health Professions Council of South Africa (HPCSA). A short description of the South African National Qualifications Framework (NQF) shows that qualifications are ranked in “a single integrated system for the classification, registration, publication and articulation of quality-assured national qualifications” (2008). This is stipulated in Section 4 of the NQF Act, 2008 (Act No. 67 of 2008) for all Higher Education Institutions to follow. The National Qualifications Framework (NQF) has ten levels, and Higher Education qualifications occupy six of these on the NQF, namely Levels 5 to 10 (see Table 2). The undergraduate qualifications (except the Professional Bachelor’s Degree, which is at Level 8) are on Levels 5 to 7. The postgraduate qualifications are on Levels 8 to 10.

Table 2 SAQA NQF levels 5-10

NQF LEVELS	QUALIFICATION TYPES
10	Doctoral Degree Professional Doctoral Degree
9	Master's Degree Professional Master's Degree
8	Honors Degree Postgraduate Diploma Professional Bachelor's Degree
7	Advanced Diploma / Bachelor's Degree
6	Advanced Certificate Diploma
5	Higher Certificate

Source: The Higher Education Qualifications Sub-Framework (CHE, 2013)

Currently, five higher education institutions (HEI) in South Africa offer undergraduate and postgraduate qualifications across the three dental occupations, and Table 3 shows an overview of these qualifications, their length, credits[24], and pathways in the dental sector.

Table 3. Overview of dental qualifications in South Africa

Profession	Qualification	HEI	Prior length of the qualification	Current length of the qualification	NQF Level	SAQA credits	Postgraduate qualifications
Dentist	Bachelor in Dental Surgery (BDS/BChD)	UWC UP WITS SMU	6yr (Bachelor)	5yr (Bachelor)	8	840 (UWC) 1038 (UP) 836 (SMU) 660 (WITS)	BSc Dent; MSc Dent; MDent; MDS; PhD
Dental Therapist	Bachelor in Dental Therapy (BDT)	SMU UKZN	3yr (Bachelor)	3yr (Bachelor)	7	396 (SMU) 384 (UKZN)	No related area of specialisation (same as for dentists BSc Dent; MDent; PhD)
Oral Hygienist	Diploma (DipOH) Bachelor in Oral Hygiene/Health Sciences (BOH/ BOHSc)	UWC UP SMU WITS UKZN	2yr (Diploma) (UWC, WITS, UP) 3yr (Bachelor) (MEDUNSA, UDW)[25]	3yr (Bachelor)	7	400 (UWC) 360 (UP) 368 (SMU) 392 (WITS) 384 (UKZN)	No related area of specialisation (same as for dentists BSc Dent; MDent; PhD)

Table 3 shows that dentistry is a five-year professional degree at NQF Level 8, and dental therapy and oral hygiene qualifications are three-year bachelor's degrees at NQF Level 7.

[24] *Credits are defined by the South African Qualifications Authority as "A measure of the volume of learning required for a qualification or part-qualification, quantified as the number of notional hours required for achieving the learning outcomes specified for the qualification or part-qualification. One credit is equated to ten (10) notional hours of learning."(SAQA-NQFpedia-Version-3. 2018, n.d., p. 21)*

[25] *In the 1980s, the University of Durban Westville and the Medical University of Southern Africa introduced three-year degree programs, but these were soon phased out and restructured into two-year diploma programs (Potgieter, 2007),*

The number of credits also differs at the five universities, which shows that the hours of learning differ. Also, the SAQA credits vary at the various qualifications and postgraduate pathways are clear for Dentistry and no specialisations are in place for Dental Therapy or Oral Hygiene. This shows that within the country, there are variances in how qualifications are classified and how they are articulated in postgraduate studies.

The training of dentists began in the early 1920s in South Africa and was originally offered as a six-year degree, and today, dentistry students complete an undergraduate professional bachelor's degree, which spans five years.[26] Table 3 above shows that currently, dentistry is currently offered at four tertiary institutions (the University of the Western Cape,[27] the University of Pretoria, the University of the Witwatersrand, and Sefako Makgatho University[28]). Dentists may undertake an MDent postgraduate qualification and specialise in dental specialty areas such as Prosthodontics, Orthodontics, Maxillo-Facial Oral Surgery, Community Dentistry and Periodontology and Oral Medicine. If a general dentist does not want to complete a specialty, there is the possibility for further postgraduate study by completing an MSc Dent or Ph.D.

The SAQA level shows that dentistry is offered at NQF level 8, with the different universities having various credits, such as UWC with 840 credits, UP with 1038, SMU with 836, and Wits with 660 credits. Table 4 provides examples of postgraduate qualifications for dentists.

Table 4 Example of qualification types at UWC

DEGREES			
Qualification types		**Credits**	**NQF Level**
Bachelor of Dental Surgery	BDS (previously BChD)	840	8
Bachelor of Oral Health	BOH	400	7
Master of Science	MSc	180	9
Master of Dental Surgery	MDS (previously MChD)	505-630	9
Doctor of Philosophy	PhD	360	10
Doctor of Science in Odontology	DSc (Odont)	360	10

[26] *This was made mandatory in South Africa in the early 2000s.*
[27] *The University of the Western Cape and the University of Stellenbosch dental faculties merged by government in 2004 as part of the restructuring and mergers of the post-apartheid tertiary education system (Mouton et al., 2013).*
[28] *Sefako Makgatho University is the new name for what was formerly Medunsa.*

DIPLOMAS			
Postgraduate Diploma in Dentistry	PGDip	120	7
Postgraduate Diploma in Sedation and Pain Control	PGDip Sedation and Pain Control	120	7
Postgraduate Diploma in Implantology	PGDip Implantology	120	7

As the practice of mid-level dental occupations becomes more autonomous and their scope continues to change, qualifications for each occupation have had to adapt. Dental therapy was introduced in South Africa in 1974 as a three-year Bachelor's degree at two universities, namely the University of Durban-Westville and Medunsa. This was to allow for the training of non-white therapists, to service the rural non-white population (Hugo, 2005). This occupation was not widely accepted or acknowledged within the dental profession, because it was perceived to be a creation of the Apartheid system (Reddy, 1985). At present, training is offered at these same two universities (now renamed the University of KwaZulu-Natal and Sefako Makgatho University). One study shows a decline in the number of therapists trained in South Africa over the past fifteen years (Singh & Combrinck, 2011), while a more recent study shows an upward trajectory (Masetla & Mthethwa, 2018). Despite the differences in reporting on dental therapy student enrolments, a concern is that overall, there have been significantly low enrolments when compared to dentistry. In 2006, the Department of Health recommended that therapists were critical to the provision of primary oral health and that their training should be offered at all dental schools. Furthermore, this recommendation proposed an increase in the numbers being trained (in 2005) from 25 to 600 by 2009 (Dept of Health, 2011). In response, stakeholders such as the South African Dental Association and the Committee of Dental Deans called for an immediate moratorium on the training of therapists, and their reason was that there was uncertainty about the need for training therapists. This issue has since not been resolved, and data pertinent to the training and deployment of therapists is still under review in South Africa, with continued low numbers of dental therapists being supplied. Another huge concern is that approximately 20% (of a therapy graduate cohort) convert to dentistry after completion of the therapy degree (Singh & Combrinck, 2011), which allows an even smaller group to enter the practice. The SAQA credits and levels show that dental therapy at SMU is 396 credits and at UKZN 384 credits both at Level 7.

In South Africa, the training of oral hygienists commenced around 1972, and their training has undergone several changes over time. The qualifications offered at the time were, either a two-year Diploma in Oral Hygiene (the University of Pretoria, University of the Witwatersrand, University of the Western Cape, and the University of Stellenbosch) or a three-year Bachelor in Oral Hygiene degree (the University of Durban-Westville and Medunsa) (Potgieter, 2007). The Bachelor in Oral Hygiene was downgraded to a diploma at SMU and UKZN, and anecdotal evidence attributes this to the decreasing number of students enrolling for the degree program. Later, the transition from the oral hygiene diploma qualification to a bachelor's degree was accelerated because of the Department of Higher Education policies in the early 2000s (DHET, 2002) and took place over several years at different universities, namely UWC (2002), WITS (2007), UP (2009), SMU (2015) and UKZN (2019). This policy proposed that universities offering initial career-focused diplomas should motivate why they should remain at universities instead of being offered at Technikons. At the time of this study, four universities (UWC, UP, WITS, SMU, and UKZN) offer a three-year bachelor's degree in oral hygiene, and UKZN is completing its first cohort of students for the bachelor's degree. This means that diploma programmes are not offered in South African training institutions.[29] What is clear is that over the years, the oral hygiene occupation has seen shifts from degree to diploma, and then back to a degree. The minimum SAQA credits required for the diploma were previously 240 at Level 5, and the Bachelor is currently 360 credits at Level 7. The SAQA credits and levels show that oral hygiene at Level 7 requires 400 credits at UWC, 392 credits at Wits, 384 credits at UKZN, 368 credits at SMU, and 360 credits at UP.

The professionalisation of oral hygienists has been a matter of debate within the dental profession for decades. Gordon and Rayner (2004) show that 92% of oral hygienists in South Africa wish to upgrade their diploma qualification to that of a degree showing an eagerness to professionalise. The only formal pathway for postgraduate qualifications was an Advanced Diploma in Oral Hygiene for hygienists previously offered at UP, which has been

[29] *Two-year Oral Hygiene Diploma programmes in South Africa were upgraded to three-year Bachelor's degree programmes. This is as a result of changes in the National Qualifications Framework; Oral Hygiene would be placed on Level 7 as a Bachelor's degree (Council of Higher Education Framework for Qualification Standards in Higher Education, 2011).*

put on hold since 2018. Progression routes for hygienists occur outside of the occupation as there is no formal pathway into postgraduate study in SA. Hygienists complete postgraduate qualifications in different fields of study according to their areas of interest, e.g. Education and Public Health or Sciences, however, this falls outside of their area of specialisation (Vergotine, 2015).

In South Africa, a laddered approach is not available for mid-level dental occupations, as there is no formal transition from oral hygiene into dental therapy. However, a student who has completed the first year of an oral hygiene diploma could transfer into the second year of a dental therapy degree. Further, to progress from being a hygienist or a therapist to becoming a dentist, the student would have to start at year one of dentistry training and receive little to no recognition for prior learning from their mid-level qualifications. What can be seen from this is the following:

- mid-level dental qualifications are at the same level, and the various universities offer a similar number of credits; and
- the learning pathways for mid-level dental professionals in South Africa are protracted and opportunities for further development are limited as there is no laddered entry into a dentistry qualification.

This section provided a brief overview of qualifications and pathways for the three dental occupations. What is apparent is that there have been strides in advancing qualifications for oral hygienists. What I will discuss next is the curriculum and knowledge issues raised in the dental literature.

3.3 Curriculum Knowledge Debates

A clear vision of the ideal graduate and dental professional a country needs must be planned so that dental programmes are designed and implemented accordingly. In addition, a good comprehension of the types of students and their relations should be distinguished and forged at this initial stage. As simple as this may sound, it is challenging to get all stakeholders to have a common vision of curricula and to implement strategies consistently. The consequences of these challenges are apparent in the type of graduate that the country

is working with today. The separate question as to whether the dental students produced are what this country needs or deserves lies beyond the scope of the current study. Some of the issues that will notably be examined include the alignment of required clinical skills and training trends in the country i.e., that dental education does not necessarily comply with the skills needed to manage the oral disease burden of the country (van Wyk & van Wyk, 2004).

It is within this context that I examine the literature, which provides limited descriptions of dental curricula and the knowledge most valued by the different occupations. There is a need to understand the developments within the education and training of dental occupations and how dental professionals are prepared for work. Next, I move on to broadly describe how the literature depicts the curricula of the three dental occupations.

3.3.1 Dentistry Curriculum Content

When explaining dental curriculum content, Donaldson et al. (2007) provide two philosophical approaches according to which dentistry qualifications are designed. They indicate that dental curricula across the world are developed along either the odontology or stomatology models. These models influence the content of the curriculum and how dental professionals approach their daily work. These authors describe the Odontology model as "a more focused study of the diagnosis, treatment, and prevention of diseases and disorders of the oral cavity" (Donaldson et al. 2007, p. 414). This model is prevalent in the Americas (four-year curriculum), Northern and Western Europe, Japan, India, and Australia (five-year curriculum) and concentrates on dental education being viewed as an autonomous discipline. Stomatology, on the other hand, is viewed as "the 'medical' study of the mouth and its diseases within the broader context of overall human health and disease" (ibid.).

This model is found in other parts of Europe and China and dentistry is seen as a specialty of medicine and could be either a five or six-year curriculum. I selected an example of a dental curriculum from China as it focuses on the stomatology model. This curriculum is also standardised across all Chinese dental schools with all using the same textbooks

(Komabayashi et al, 2006). These authors outline the dental curriculum from China as seen in Table 5 below.

Table 5 Chinese dental curriculum with subjects, teaching and practical hours

Year	Subjects	Hours of lectures & practices
1	Politics	74
	English	133
	Physics	95
	Physical Education	74
	Advanced Mathematics	60
	Inorganic Chemistry	**114**
	Organic Chemistry	**105**
	Biology	36
	Human Anatomy	**162**
	Histology & Embryology	95
2	Philosophy	72
	English	88
	Genetics	18
	Physical Education	72
	Physiology	**160**
	Biochemistry	**144**
	Microbiology	**108**
	Pathology	**108**
	Pathophysiology	36
	Pharmacology	**108**
3	Political Economy	72
	Physical Diagnostics	**135**
	Surgery	**103**
	Laboratory Diagnostics	52
	Radiodiagnostics	54
	General Surgery	44
	Traditional Chinese Medicine	70
	Internal Medicine	**121**
	Ophthalomology	25
	Otolaryngology	50
	Gynecology & Obstetrics	25
	Pediatrics	25
	Dermatology	25
4	Latin	24
	Oral Histopathology	80
	Dental Anatomy & Occlusion	40
	Regional Anatomy	60
	Orthodontics	93
	Oral Surgery	**268**
	Prosthodontics	**268**
	Oral Internal Medicine*	**332**
5	Clinical Training†	1840
	TOTAL HOURS	**5668**

*Includes Restorative Dentistry, Endodontics, Periodontics, Pedodontics, Preventive Dentistry.
† Includes Oral Internal Medicine (15 weeks), Prosthodontics (15 weeks), Oral Surgery (16 weeks). One Clinical Training week consists of 40 practical hours.

The curriculum consists of four years of theoretical training, and one compulsory year of dental clinical internship. Medical and dental education is integrated into the curriculum due to the traditional use of stomatology. During the first year, the Chinese curriculum emphasises fundamental sciences, such as Chemistry and Anatomy, with dental students studying alongside medical students. The second year accentuates additional theoretical and practical courses such as Physiology, Biochemistry, Microbiology, and Pharmacology, while the third year more time on lectures in Physical Diagnostics, Surgery, and Internal Medicine, with a series of rotations in a medical facility. In the fourth year, students start dental coursework, and commence clinical contact with patients, with most of their time focused on Oral Surgery, Prosthodontics, and Oral Internal Medicine. The fifth year of study is a full year of dental clinical training, during which students participate in patient care only. The number of hours for the entire five-year curriculum totals 5668 hours (Komabayashi et al., 2006). What we see from the Table is that the curriculum favours strong use of basic sciences in the first four years of dental training, which is said to strengthen theoretical knowledge to assist in decision-making in clinical settings (Donaldson et al., 2007). Despite the positive strength of the theoretical knowledge base, these authors note that the dental curriculum is weakened due to the deficiency of dental techniques. This means they feel that these dental students will not have the clinical ability to perform dental procedures well.

Several studies examine dental undergraduate programmes in the European Union. The focus of these studies is on harmonising dental curricula, to allow for credit transfer in the region (Chuenjitwongsa et al., 2018; Cowpe et al., 2010; Manogue et al., 2011; Murtomaa, 2009; Plasschaert et al., 2007). Plasschaert et al. (2007) present a brief account of dental undergraduate curricular structure and content and provide several examples of dental programs offered in different countries. These examples are from Helsinki, Finland; Malmö, Sweden; Nijmegen, the Netherlands; Madrid, Spain; and Leeds in the UK. From these five examples, all of the curricula span five years and they all follow an odontology model, with dental content integrated from the first year of study (Plasschaert et al., 2007).

According to Donaldson et al. (2007), there is a need for both models to be considered in dental curricula, where they explain that,

> The education of dental professionals for this century will require increasing knowledge of new technology and of the human body. The future of dentistry depends on the production of educationally qualified, culturally competent, and ethical dentists, who are grounded in expert technical skills (odontology) and sound medical knowledge (stomatology) (p.415).

This explanation shows that dental curricula require both technical skills and specialised knowledge. By understanding that these two aspects of dental curricula are crucial to the development of dental professionals, we can use the two types of dental curricula as a tool through which to assess how curricula are developed and implemented. It also offers a lens through which to assess how mid-level dental occupations develop their curricula, and where the focus is in terms of technical skills and specialised knowledge.

3.3.2 Dental Therapy Curriculum Content

Dental therapy training is offered across most countries where these professionals work. Qualifications are often offered as a two-year diploma or a three-year degree within university settings (Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008). Curriculum content is outlined by several authors (Evans, 2011; Nash, Friedman, Mathu-Muju, et al., 2014; Singh, 2011). Evans (2011) proposed curriculum content for the training of dental therapists in the USA, indicating that it should include content areas and depth comparable to what is taught in oral hygiene programmes. The curriculum could be an in-depth two-year curriculum or a one-year curriculum added to a standard oral hygiene curriculum. Evans (2011) outlines five main curriculum content areas (see Table 6) namely, biomedical concepts, dental sciences content, dental therapy sciences, general education, and telehealth communication. The dental therapy curricula must incorporate foundational knowledge early in the programme, which would comprise much of the biomedical concepts.

Table 6 Proposed content areas for dental therapy curricula (Evans, 2011)

Areas	Contents
Biomedical concepts	head, neck and oral anatomy, development of the dentition, physiology, microbiology/immunology, general pathology, nutrition, and pharmacology
Dental sciences content	dentition and tooth morphology, oral function, oral pathology, radiography, periodontology, cariology, pain management, and dental materials
Dental therapy sciences	oral health and oral health counselling, health promotion and prevention, patient management, clinical dental therapy, infection control, community oral health, medical and dental emergencies, and legal and ethical dimensions of dental therapy practice
General education	oral and written communications and cultural competence
Telehealth communication	using electronic media to record and transmit images for consultation and diagnosis

The separation of the content areas of dental sciences and dental therapy sciences, suggests that there are specialisation areas for dental therapists, when in fact the content is no different from what a dentist would learn about, for example, oral health counselling, health promotion, or infection control. Evans suggests that the training of therapists in such a degree programme would ensure that therapists are taught how to work under the supervision of dentists. This is to be followed by a year of working under the supervision of a dentist.

A dental therapy curriculum from South Africa is examined by Singh (2011), who advocates for "the training of mid-level workers who are competent to provide health promotion, prevention and basic curative care to schoolchildren and disadvantaged communities, in the public sector only" (p.311). In her study, Singh raised six concerns about the dental therapy curriculum at UKZN. These include that the curriculum lacked community-based training, teaching was mainly discipline-based and was taught mainly in departmental silos, there was no problem-based or case-based learning, there was little emphasis on epidemiological priorities for SA, and finally, the link between oral and general health was not taken into consideration. Singh proposes a revised curriculum for therapists seen in Table 7, which would address the six concerns that she found in the curriculum.

Table 7 Revised curriculum content areas for dental therapy degree. Singh (2011)

<table>
<tr><th colspan="2">LEVEL 1</th><th colspan="2">LEVEL 2</th><th colspan="2">LEVEL 3</th></tr>
<tr><th>Semester 1</th><th>Semester 2</th><th>Semester 1</th><th>Semester 2</th><th>Semester 1</th><th>Semester 2</th></tr>
<tr><td rowspan="2">GENERAL FOUNDATIONAL KNOWLEDGE
i. Academic Skills & Clinical Practice
ii. English Language Development
iii. Basic / Intermediate isiZulu</td><td>DENTAL FOUNDATIONAL KNOWLEDGE
i. Oral Biology Structures</td><td rowspan="2">DIAGNOSTICS SKILLS
i.Diagnostics, Infection Control & Dental Specialties
ii. Ethics
iii.Practice Management</td><td>PRECLINICAL
i.Minor Oral Surgery
ii.Restorative Dentistry</td><td>CLINICAL
Mid-Jan to Mid-May
Restorative Dentistry
Theory & Clinic at the training hospital</td><td>CLINICAL
August to October
Restorative Dentistry
Rotation between hospital, schools, rural & urban clinics</td></tr>
<tr><td>PRECLINICAL
i. Radiography & Photography
ii. Cariology, Periodontology and Prevention</td><td></td><td>CLINICAL
Mid-Jan to Mid-May
Minor Oral Surgery, include Emergency Care
Theory & Clinic at the training hospital</td><td>CLINICAL
August to October
Minor Oral Surgery
Rotation between hospital, schools, rural & urban clinics</td></tr>
<tr><td>COMMUNITY-BASED STUDIES
i.Psychosocial Orientation for Health Care, including ethics
ii.Introduction to Anatomy and Head & Neck Anatomy
iii.General Basic Physiology</td><td>COMMUNITY-BASED STUDIES
i. Community Studies -
Multidisciplinary with other Health Science Professions</td><td>COMMUNITY-BASED STUDIES
i. Health as a human right
ii. Health education & promotion
iii. Preventive care
iv. Dental epidemiology
v. Research proposal</td><td>COMMUNITY-BASED STUDIES
Schools & Community Clinics
i. Health Education & Promotion,
ii. Prevention
iii.Epidemiological Surveys
iv. Research study</td><td colspan="2">COMMUNITY-BASED STUDIES
Comprehensive patient care in rural clinics, schools and municipal wards
as part of the NHI
Mid-May to Mid-July (8 weeks)</td></tr>
<tr><td rowspan="2">DENTAL FOUNDATIONAL KNOWLEDGE
i. Oral Biology – Embryology and Physiology
ii.Cariology, Periodontology and Prevention – introduction</td><td rowspan="2">PROBLEM-BASED LEARNING
Integration of the foundational knowledge in the basic, dental, preclinical and community-based aspects will be integrated.
Reflective logs, portfolios and learning journals will facilitate such learning.</td><td colspan="2">CASE-BASED LEARNING
link between oral and general health & focus on oral health priorities
i.General Pathology & Microbiology
ii.General Medicine & Special Patients
iii.Oral Medicine, Oral Pathology & Clinical Pharmacology
Reflective logs, portfolios and learning journals will facilitate such learning.</td><td colspan="2" rowspan="2">PROBLEM-BASED AND CASE-BASED LEARNING TO FACILITATE COMPREHENSIVE PATIENT CARE
i. Diagnostics & Radiology
Foundational knowledge is combined with the preclinical and clinical domains, and the community-based studies to develop competence in comprehensive patient care.
Reflective logs, portfolios and learning journals will facilitate such learning.</td></tr>
<tr><td>CLINICAL
Health Promotion & Prevention, Scaling & polishing,
Dental Radiography</td><td>CLINICAL
Radiography
Clinical Dentistry – holistic patient management – with clinical diaries</td></tr>
</table>

Singh incorporates a three-year degree curriculum with general and dental foundational knowledge, community-based studies, preclinical and clinical and problem-based and case-based learning pedagogies. The introduction of preclinical training is to be from the first year of study, which is aligned more with an odontology model. With this, Singh, who is a dentist, is suggesting that therapists ought to be allowed to work with children and disadvantaged patients only and should be limited to operating in the public sector. With this revised curriculum, the focus is on integrating knowledge early and incorporating more applied knowledge. This curriculum has content areas similar to what Evans (2011) proposes, emphasising basic sciences and community studies as specialised knowledge for therapists. These two curriculum proposals promote more integration of dental concepts and a focus on community studies. They suggest subordination for therapists by continuing to work under the supervision of dentists. This means that these curricula may not be strengthening the role of therapists, and will invalidate their ability to practise autonomously. Since the study by Singh (2011), there have been a few studies conducted concerning curricula, however, they do not provide specific analyses of curricula knowledge distinctions. One such study addresses Singh's call to include community-based training and shows the implementation of the curriculum and the objectives of interprofessional collaboration (Moodley & Singh, 2018). The research raises several challenges to the implementation of such a curriculum, including; scheduling a common time for implementation, difficulties in matching numbers of students with similar backgrounds, skills and levels of clinical knowledge, funding, and staff and leadership buy-in (Moodley & Singh, 2018, p. 24). The study by Singh thus provides the latest examination of the knowledge found in a dental therapy curriculum.

3.3.3 Oral Hygiene Curriculum Content

The literature about oral hygiene curricula and how knowledge is organised in them has been scarce until recently. I have found some discussions in this regard in the international literature and for my MEd dissertation, in which I examined knowledge types in oral hygiene curricula in South Africa. The section below focuses on oral hygiene curricula, and how learners are prepared for practice.

Since the inception of the oral hygiene profession, the traditional role of the oral hygienist has broadened, from performing technical functions such as scaling and polishing teeth to being more knowledgeable with many roles and an expanded scope (Darby & Walsh, 2014; Johnson, 2009; Vergotine, 2015). With these changes new content has been added to curricula, resulting in dense oral hygiene curricula. Preparation of oral hygiene students has remained technical and does not adequately equip students for work in other contexts,[30] or their additional roles (Cobban et al.; 2009; Vergotine, 2015).

The literature suggests that longer curricula help students to become better at decision-making. An extended curriculum allows for more clinical time, the better the use of critical thinking using evidence-based research which emphasises clinical and managerial skills (Forrest & Miller, 2001; Rowe, Massoumi, Hyde & Weintraub, 2008; Knevel & Luciak-Donsberger, 2009; Kanji et al., 2011; Vergotine, 2015). A student completing a longer programme, such as a Baccalaureate degree, will thus be more inclined to become a more knowledgeable lifelong learner.

The additional time in the curriculum for areas other than learning clinical/technical skills allows students to increase the complexity and range of their knowledge (Rowe et al., 2008, p. 406). The emphasis shifts away from practical training and includes knowledge, which enhances other professional attributes. The expectancy is that students will learn to practice with greater conceptual understanding to critically judge how they perform their tasks.

The advancement of hygienists into knowledgeable workers is promoted via curriculum development. With the varied curricula, Blitz and Hovius (2003) propose guidelines for oral hygiene programmes that would meet international standards. They split knowledge into seven content areas, namely General Education, General Sciences, Biomedical Sciences, Dental Sciences, Dental Hygiene Sciences, Vocational practice, and Areas of Special Interest (Blitz and Hovius, 2003). The selection of the content areas solicits queries about the emphasis of curricula and the relevant knowledge for two-and three-year programmes (see

[30] *Other settings include working for corporate companies as sales and marketing experts in oral health care, or in public health institutions engaging in oral health promotion, or policy development.*

Table 8 Oral Hygiene content for two- and three-year programmes (Blitz & Hovius, 2003) below).

Table 8 Oral Hygiene content for two- and three-year programmes (Blitz & Hovius, 2003)

Content areas	Content in two-year programme	Content in three-year programme
General Education	Sociology	Sociology
	Psychology (patient motivation, child development and pain management)	Psychology (patient motivation, child development and pain management)
	Oral, written and electronic communications	Oral, written and electronic communications
General Sciences		Statistics, interpretation of data, application of data into practice, evaluation of current scientific literature, self-assessment skills, peer-assessment skills, practice management skills
Biomedical Sciences	Anatomy, Physiology, Chemistry, Biochemistry	Anatomy, Physiology, Chemistry, Biochemistry
Dental Sciences	Tooth morphology, head, neck and oral anatomy, oral embryology and histology, Oral pathology, Radiology, pain control, dental materials, dental caries, non-carious tooth wear	Tooth morphology, head, neck and oral anatomy, oral embryology and histology, Oral pathology, Radiology, pain control, dental materials, dental caries, non-carious tooth wear, Dental epidemiology, Paedodontics, orthodontics, psychopathology, administration of local anaesthesia
Dental Hygiene Sciences	Oral Health education, preventive and nutritional counselling, health promotion, patient management and comprehensive clinical dental hygiene, services for special needs patients, community oral health, medical and dental emergencies, legal and ethical aspects of hygiene practice, infection and hazard control management, intraoral photography, implant care.	Oral Health education, preventive and nutritional counselling, health promotion, patient management and comprehensive clinical dental hygiene, services for special needs patients, community oral health, medical and dental emergencies, legal and ethical aspects of hygiene practice, infection and hazard control management, intraoral photography, implant care. Teamwork, quality systems, for patient care, clinical self-evaluation, cultural competency, variety of patient groups, cooperation with other health groups
Vocational practice	Professional practice, ethics, legislation, team dentistry, safe practice, quality care	Professional practice, ethics, legislation, team dentistry, safe practice, quality care.
Areas of special interest		Hospital dentistry, restorative, special needs, dental hygiene education, public health, orthodontics, Paedodontics

Blitz and Hovius suggest that Dental Hygiene Sciences is the main content area required for hygienists, while other content areas come from knowledge borrowed from different fields such as Biomedical Sciences, General Sciences, and General Education. The clinical scope and specialised knowledge of the hygienist are split between three areas: Dental Hygiene Sciences, Dental Sciences, and Areas of Special Interest.

In my own MEd study (Vergotine, 2015), I examined whether preparing students is for them to be either technical workers or knowledge workers. The study looked at curricula to understand where knowledge is borrowed from, and the selection and pacing of content. This investigation assists us in determining whether a curriculum is focused on clinical techniques and tasks, or more on conceptual knowledge domains, such as larger discipline areas, such as the pure sciences or social sciences.

This investigation assists us in seeing whether a curriculum is focused on clinical techniques and tasks or more on conceptual knowledge domains such as larger discipline areas, e.g., pure, or social sciences. Each module was mapped according to one of the following knowledge types - 'hard-pure', 'soft-pure', 'hard-applied', 'soft-applied', 'clinical applied' and 'generic' knowledge types from Muller's typology of knowledge presented in Table 9 below (Vergotine, 2015). I used the time spent on the topics of each module and documented the sequencing of each module.

Table 9 Muller's typology of knowledge adapted from Muller (2009) and Hoadley (2010)

Disciplines	**Occupational fields e.g.**	**Disciplinary distinctions (Biglan)**	**Type of knowledge (Becher)**
Pure sciences (Natural sciences)	Physics	hard-pure	Cumulative; concerned with universals; impersonal; value-free; clear criteria for knowledge verification and consensus over significant questions
Humanities and pure social sciences (Social sciences)	Psychology	soft-pure	Reiterative; holistic; concerned with particulars; personal; value-laden; dispute over criteria for knowledge verification and obsolescence; lack of consensus over significant questions
Technologies (Science-based professions)	Engineering	hard-applied	Purposive; pragmatic; concerned with mastery of physical environment; applied heuristic approaches; uses both qualitative and quantitative approaches; criteria for judgment are purposive
Applied social sciences (Social science-based professions)	Teaching	soft-applied	Functional; utilitarian; concerned with enhancement of semi-professional practice; uses 'case' studies and case law to a large extent

I found that oral hygiene curricula in South Africa differed as to their purpose and how the clinically applied knowledge was spread. It showed that the lecturers have aspirations to professionalise the occupation, yet curricula reinforce technical and generic knowledge and skills. The study shows that universities have curricula with different purposes despite having the same scope of practice. This has steered me to expand my examination of education and training to understand its influence on daily practice and whether it is what happens in the workplace that influences what is taught in training institutions.

The local and international; oral hygiene curricula presented here include general education, incorporating sociology and psychology, which aligns with the role of hygienists as educators. They also promote more integration of dental concepts and a focus on

community studies. The curricula may be weakening hygienists' ability to practise autonomously, as the focus is not on hard-pure knowledge.

3.4 Conclusion of Dental Education and Training

In conclusion, this review of the literature provides an overview of the education and training in the dental profession, focusing on changes and advancements in qualifications both locally and internationally. Chapter 3 provides exemplars of curricula and allows for analysis and discussion of the current curricula in later chapters 8 and 9. The discussion reveals that there are advances in training mid-level dental professionals due to the demand for economical dental services, yet further training is limited for mid-level dental occupations. Such advances include moving away from diploma programmes to degree programmes and expanding the depth of knowledge in curricula.

The chapter raises the following claims about curricula:

- The odontology model uses the integration of dentistry content from early training, which results in more applied knowledge.
- Specialisation areas for mid-level dental occupations focus on community-oriented studies.
- There is still a tendency to prepare mid-level occupations for work under the supervision of dentists.

The chapter shows that there is much debate around changing the curriculum to improve teaching and learning, yet there is not enough investigation around changes in curricula concerning independence. For this study, it is important to establish in what ways the training of mid-level dental professionals has encompassed the legislated changes set by the South African government. Further, the study has to elucidate how knowledge coverage in curricula of dental occupations affects independence in daily work practices. A closer look into their preparation for work includes what the students are being taught, what is assumed they learn and what they truly learn to become more independent.

CHAPTER 4

CONCEPTUAL FRAMEWORK: LINKING DENTAL EDUCATION AND WORK

4. SYNOPSIS OF CHAPTER 4

The previous chapters 2 and 3 provide a review of the literature within which this research is set and focus on education and work within the dental sector locally and internationally. In this chapter, I outline a conceptual framework that will aid in analysing the findings of this study.

The expansion of the scope of practice for mid-level dental occupations affects different professional spheres and leads to competition for jurisdiction over tasks within the dental profession. In this chapter, I examine what the expansion of scope means for mid-level dental occupations by linking education and work perspectives. This takes into consideration the broad aim of the study, which is to examine how changes in scope and autonomy of mid-level dental professionals, specifically, oral hygienists have influenced professional boundaries within the dental profession I use lenses from sociology and philosophy of work to explain how relations between the three occupations are perceived within the dental profession, with a specific emphasis on control over boundaries.

A fundamental connection between education and work is that the purpose of the curriculum is to prepare individuals for work, by conveying knowledge and skills. Through this study, I intend to determine the role of education and training in advancing professional jurisdiction and autonomy in the context of changing the scope of work. My main argument is that what happens in the work sphere has a profound influence on the developments in education and training which impacts the professionalisation of an occupation.

The literature in this chapter is crucial to the broader scope of the study, however, I first clarify two points about how this review is composed. First, I present what is included, what the focus of the review is, and how this aids in analysing what the study is seeking to

achieve. Second, I specify what the review does not incorporate and what is not intended for discussion in this chapter. The chapter outlines concepts from education and work to distinguish how professionals are prepared for the workplace. Specifically, understanding how preparation for work assists professionals in controlling their work through specialised knowledge, which helps to shape their professional boundaries. This study is not trying to examine approaches for improving professional identity, and therefore, the literature review does not examine different approaches to identity formation or the factors influencing it. Furthermore, the literature covered in this chapter is not aimed at discovering whether skills in education match the needs in the workplace and thus does not focus on the demand and supply of skills for the workplace. Finally, the review does not want to depict pedagogy in training institutions and how different teaching styles might influence professional development.

The main purpose of this chapter is to describe concepts from sociology and philosophy of work on the division of labour of occupations, with the view to understand the nature of relations between them. The six concepts I cover in this chapter are occupations, division of labour, autonomy, jurisdiction, judgement, and specialised knowledge. I propose that these concepts be used as a theoretical basis for analysing the education and work of dental occupations in South Africa, and the boundary contestations within the occupation more specifically as discussed in chapters 6,7, and 8. The chapter is divided into four major sections as follows: the first section (4.1) briefly introduces the concepts that link education and work. The next section (4.2) highlights the nature of professional relations by clarifying the theoretical underpinnings of the division of labour in occupations and how it is shaped by jurisdiction and specialised knowledge. This explains the relationship between knowledge and jurisdiction in determining (often amongst power relationships and conflict) the control an occupation obtains to practice certain tasks. The following section (4.3) is about the concept of specialised knowledge, which is detailed through theoretical work on types of knowledge and specialisations. Section (4.4) concludes the chapter by reflecting on how the concepts support the analysis of preparation for the work of occupations in this thesis. The chapter thus outlines concepts that will assist in analysing what is required to control work

and to recognise relations with other occupations, to better understand what shapes professional boundaries.

4.1 Introducing the Concepts

The chapter foregrounds the importance of preparing one for work and highlights challenges that arise in the workplace and during training. This account of the literature shows how selected concepts are brought together to assist in explaining the establishment and maintenance of boundaries in the context of competition that operates in education and the work of occupations.

Theories from the sociology and philosophy of work literature bring together concepts about education and work. The main theorists that I draw on to elucidate these concepts are Andrew Abbott and Elliot Freidson who are sociology of work scholars, and Christopher Winch, a philosophy of education scholar. These scholars shaped my conceptual understanding by illuminating the following concepts: occupations/professions, division of labour, autonomy, jurisdiction, judgement, and specialised knowledge. These concepts also help me to understand ideas about preparation for work.

4.2 Work and Relations between Occupations

In this section, I offer an outline of the sphere of work, by describing relations in the workplace. I highlight that professional relations are influenced by the division of labour and autonomy of practice. This serves to show how changes (such as policies on scope) affect the relations and advancement or regression of occupations.

To understand the evolution of professions and the boundary shifts between them, I turn to Abbott, who highlights the importance of studying work and its impact on the jurisdiction obtained by a profession. Abbott indicates that “it is control of work that brings the professions into conflict with each other and makes their histories interdependent” (Abbott, 1986, p. 190). When work is controlled by one profession, various interactions occur between itself and other professions. Further, he indicates that professions anticipate another’s control over certain tasks, which allows these professions to exist in

interdependent systems, with opposing or similar jurisdictional claims (Abbott, 1988). Thus, when one profession aims to achieve greater control of a task, another profession's boundaries are affected. By this Abbott indicates that professions cannot be viewed as developing in isolation and that they play a role in one another's respective progression or regression (Abbott, 1986, p. 190). This shows us that professions become reliant on and/or in conflict with one another when they are in search of advancement. Despite such reliance on each other, professions also have differences in intra-professional prestige and access to professional power, further shaping their advancement. Such development is often caused by the involvement of the state through changes in legislation (Abbott, 1988, p. 71), which will be discussed in Section 4.2.4.1.

In this study, professional development is influenced by the legislative changes in the scope of mid-level dental occupations. What the study aims to investigate is how such changes affect the advancement of the occupation and the relations between dental occupations. Following this discussion, namely that relations affect the advancement or decline of professions, I now move to show that the division of labour, the request for autonomy, and the jurisdiction process give rise to shifts in the boundaries of occupations. In this section, I explore three main areas. First, I examine the link between occupations and professions. Second, I provide an outline of how the division of labour explains the differentiation of who performs the tasks in an occupation. Third, I explain professional autonomy and jurisdiction over the work performed within an occupation and how it affects the relations across and within occupations.

4.2.1 Linking Professions and Occupations

Freidson (1988) argues that professions are occupations and that there are several ways in which occupations differ. He indicates that occupations vary in terms of labour market structure, the nature of the work their members perform, how they perform it, who controls what the work shall be, and how it is performed and evaluated (Freidson, 1988, pp. 424–425). Freidson (1988) describes a profession as "a kind of occupation whose members control recruitment, training, and the work they do" (Freidson, 1988, p. 425). When looking at these criteria, it is apparent that having control over education and work influences the

shift in status from an occupation to a profession. Such control is dependent on specialised knowledge, this is highlighted by several authors as a fundamental criterion for attaining the status of a profession. Abbott describes professions as "exclusive occupational groups applying somewhat abstract knowledge to particular cases" (Abbott, 1988, p. 8). According to Freidson (2001), in occupations, professionals have specialised knowledge, which informs their ability to provide services and organise and control their work (Freidson, 2001). He argues that professionalism has two social processes which establish the social and economic status of professional work, this is a "belief that certain work is so specialised as to be inaccessible to those lacking the required training and experience, and the belief that it cannot be standardised, rationalised" [all sic] (p. 25). Winch describes occupations as "ways of organising work for economic purposes, but they are also ways of organising and acquiring knowledge" (Winch, 2010, p. 12).

These explanations speak to the importance of attaining knowledge for the development of professions. They suggest that an occupation becomes an exclusive profession when its knowledge base is specialised both theoretically and practically, which permits a professional to have discretion and control over the work that they do. The literature thus shows us that professions are typically associated with specialised knowledge (systematically organised knowledge) that defines and creates boundaries around practice. Specialised knowledge is one key concept in this study as it is used by occupations to gain power and control and maintain their status in the labour market as either an occupation or a profession. As this chapter unfolds, I outline the role of specialised knowledge in the workplace, as well as in education and training. In this study, the use of the 'dental profession' denotes that the three dental occupations rely on specialised knowledge that defines each one and creates boundaries around how they practice. In the next section, I describe how specialised knowledge is linked to the division of labour.

4.2.2 Division of Labour

Occupations differ due to the tasks that their members perform. This can be seen through the range of tasks that exist within a social system such as an occupation. Freidson describes the 'division of labour' as "the structure of social relationships that organises and

coordinates the work of related specialisations and occupations" (Freidson, 2001, p. 41). The division of labour thus represents the structure of occupations through the tasks they cover as well as the specialisation thereof.

It is useful to describe how specialisation is clarified in the context of occupations. Freidson defines specialisation as "the use of a circumscribed body of knowledge and skills to gain productive ends" (Freidson, 2001, p. 18). He differentiates between two types of specialisation - mechanical and discretionary specialization, respectively (Freidson, 2001, p. 23) as seen in Figure 5. In mechanical specialisation, individual judgement is minimised and is demonstrated when different parts of work are performed by different workers, and become routine. Mechanical specialisation requires primarily the knowledge that adults learn in everyday activities, and here specialised knowledge is low. Freidson contrasts this with discretionary specialisation, indicating that some tasks require the exercise of judgment.

Figure 5 Relative proportion of each type of knowledge and skill in each type of specialization (Freidson, 2001)

Type of specialization	*Everyday knowledge*	*Practical knowledge*	*Formal knowledge*	*Tacit knowledge*
Mechanical	High	Low	Low	Moderate
Manual discretionary	Moderate	High	Moderate	High
Mental discretionary	Low	Moderate	High	Low

Discretionary specialisation requires a body of knowledge obtained through special training that maintains the disciplines and the formation of professions (ibid.). Here he distinguishes between two types of discretionary specialisation (mental and manual) by outlining the knowledge required in professional workplaces. Freidson suggests that mental discretionary specialisation is associated with the acquisition of high levels of formal knowledge. He indicates that when professionals make use of mental discretion they require low levels of everyday knowledge, moderate practical knowledge, high formal knowledge, and low tacit knowledge (as seen in Figure 5). This suggests that formal knowledge is crucial for discretionary specialisation, permitting professionals to control their work. In manual discretionary specialisation, everyday and formal knowledge is moderate, while practical and tacit knowledge is high. So, depending on the type of task required and the

specialisation achieved by the profession, the worker uses either manual or mental discretionary judgment.

This discussion shows that getting to understand the extent of specialisation within an occupation is essential, as it accentuates the degree of advancement and maturity the occupation has attained. I expand on this in Section 4.3.1 when I discuss the relations between propositional (or conceptual) knowledge and professional action. The next section provides a discussion on the relationship between the performance of tasks and professional autonomy.

4.2.3 Professional Autonomy

As indicated above, when a profession has autonomy over its work, its members have the exclusive right to perform their specified tasks. Freidson (2001) points out that occupations are regarded as professions when they have power over task setting and control the evaluation of work. He states that “organised occupations create the circumstances under which its members are free of control by those who employ them” (Freidson, 2001, p. 12). Standing (2010) adds that working in an occupation increases autonomy and contributes to greater satisfaction. This suggests that a profession must have “autonomy” over its’ work, which leads to greater fulfilment. This emphasises that autonomy gives an occupation greater freedom and satisfaction with their work.

According to Abbott, several professions influence one another in terms of how tasks are controlled, noting that "Sometimes it has full control, sometimes control subordinate to another group" (Abbott, 1988, p. 2). Freidson expounds on this showing how such control is manifested. He suggests that ideally, the division of labour could have either a horizontal structure (parallel occupations which cooperate on tasks) or a vertical structure (some have control over others because of their expertise in content and character) (Freidson, 2001, p. 56). Freidson (2001) suggests that in autonomous practice, control is negotiated, which occurs through deciding which tasks are central, which takes priority over others, and the order in which tasks are performed. A profession may thus direct and supervise another in the division of labour, resulting in work being authorised by a superordinate profession. The

subordinate profession does not have the autonomy to make decisions regarding tasks, and their jurisdiction is limited. This elucidates the vertical structure between professions, where regulations have affected autonomy to practice. This form of control brings professions into further relations of conflict, competition, or collaboration. Such interdependence, together with the quest for control, foregrounds interprofessional competition, as well as reliance on jurisdictional boundaries between professions. According to LaMere (2012), Abbott depicts a messy, complex, expansive system of professions, where tasks are always changing and boundaries are continually negotiated and contested. Further, Abbott (1988) notes that the high knowledge system increases the intra-professional status of a given profession, which produces competition within a profession or in the workplace.

In the dental sector, the vertical structure between occupations has been obvious, as dentists have had the right to much control over tasks, while mid-level dental professions have been subjected to direct supervision under dentists. The changes to legislation for mid-level dental professions have created the opportunity for boundaries to shift. This study examines the extent to which legislative changes to the scope and autonomy of hygienists have influenced relations between dental occupations. Thus, the discussion above about competition, control, and the shifting of boundaries serves to interrogate the motives for the jurisdictional authority and the influence this may have on dental occupations. In so doing, it is necessary to recognise the levels of autonomy of the three occupations, what has influenced autonomy, and whether this has altered professional relations. Until this point, I have discussed the first three concepts central to the sphere of work, occupations, division of labour and autonomy. In the next section, I examine 'jurisdiction', a term that encompasses specialisation and autonomy, which allows for control over tasks. By understanding that division of labour and autonomy require judgement, the next section leads us to consider what is meant by jurisdiction, and how this is influenced by reasoning.

4.2.4 Jurisdiction

According to Abbott, jurisdiction is seen as the control over tasks of professions, where such tasks are "human problems amenable to expert service" (Abbott, 1988, p. 35). The type of work that is performed, how professions address problems over which they claim control,

and their abstract knowledge, all affect jurisdiction (LaMere, 2012). Jurisdiction, therefore, typifies the extent and type of tasks a profession has control over, allowing one to differentiate between professions as well as between occupations within professions.

Abbott provides a theory through which to understand how a professional's work addresses the problems over which it claims to control. He refers to problems that need to be addressed by a professional as having either objective or subjective properties (Abbott, 1988, p. 36). A profession is said to have objective properties because of the type of problems it encounters, e.g., it could be made of natural, cultural, technological, or organisational facts. In this case, professions such as engineering or architecture have objective jurisdiction as they construct problems as they work with them, e.g. bridge building or design. In another case, when a problem has subjective properties, the cultural logic of a profession is imposed on the problem. Abbott provides the example of Theology, indicating that in this profession, subjective properties mean the mere projections of the mind which have been culturally constructed. Tasks are constructed from the problems currently held by the profession, and in the case of subjective jurisdiction, professions aim to classify the problem, reason about it, and then take action on it (Abbott, 1988, p. 40). When a profession uses subjective jurisdiction, tasks could be attacked by other professions interested in interprofessional poaching. The strength of the subjective construction of a jurisdiction determines how open the particular jurisdiction is to attack (Abbott, 1986, p. 190). The above analysis by Abbott was extended by contrasting the technical and social divisions of labour put forward by Murphy (1993) cited in Buchanan et al. (2020, p. 25). The technical division of labour is described as the organisation of the production processes in particular tasks, while the social division of labour is about how workers are allocated those tasks. Murphy (1993), indicates that economic analysis assumes that the technical division of labour drives the social division of labour. Reworking Aristotle's basic notions of order and human activity, Murphy argues that the key concepts for understanding order are nature, custom and stipulation. Hence, while the technical division of labour may be tightly defined by 'technical' and quasi-natural forces, the allocation of workers to it is not so constrained. Rather, forces of custom or conscious stipulation often shape this process. It is because of this, Murphy argues, that issues relating to work and production are saturated

with ethical and moral concerns. Many social divisions of labour are compatible with different (but equally technically efficient) configurations of tasks' (Buchanan, et al., 2001, p. 25). In this thesis, I am arguing that the social division of labour in the dental profession restricts the work of mid-level dental professionals more than the technical division of labour.

Abbott (1986) recommends three considerations for analysing the jurisdiction of professions. First, one must understand the link between a profession and its work, through the actual work it performs. Second, it is necessary to examine the social structures sustaining the profession. Third, one ought to observe how jurisdictional links between professions determine the history of individual professions (Abbott, 1986, p. 190). In this study, I plan to analyse the links between dental occupations, investigate common work, and how control over work is changing. To understand jurisdiction better, the following three aspects will be discussed, namely the settings within which jurisdictional claims are made by professions, the settlements within which jurisdictions are claimed, and the conflicts which arise because of jurisdictions (these will be discussed next).

4.2.4.1. Jurisdictional settings

Abbott (1988) argues that the system of professions is complex, and identifies different settings in which professionalisation is negotiated. He provides three settings in which professionals endeavour to make jurisdictional claims, namely through the legal system, the public, and the workplace.

The first setting, according to Abbott (1988, p. 71) is the state (legal), which confers formal control of work to a profession. Legal jurisdiction relies on various institutional structures through which a profession attempts to make jurisdictional claims, e.g., ministries, courts, and regulatory boards. A profession acts against competing professions in these situations, as they seek monopoly of service, payment for services, or exposure of unauthorised or unethical professionals. Professions use policies developed by the state to determine how other professions should be dealt with when contravening legislation and to limit the advancement of new professions (Abbott, 1988; Freidson, 2001; Standing, 2010). In the

legal setting, all members of a profession are viewed the same way, and the nature of their jurisdictions is sharply differentiated (Abbott, 1986, p. 191). Professions also use the legal system to protect their knowledge and qualifications, by setting up education systems and regulating scopes of practice (Abbott, 1988). Freidson (2001) indicates that the relationship between the state and profession is complex, as experts who guide the State come from the profession, and have the profession's interest at heart. For example, the three dental occupations have seats on professional boards and can influence how relevant policies are regulated.

The second setting where claims are made is in the public sphere. Here professionals create images that convince the public of its status. Abbott describes public jurisdiction as claims for social and cultural authority (1988, p. 60). Control is used in three ways: to perform tasks as the occupation sees fit; to define tasks; and to exclude contending professions from this process. The jurisdiction of different professions is manipulated through various forms of media coverage, advice columns, feature material, personal appearances, and enforcement of standards for media presentations of professionals (Abbott, 1988, p. 147). Members of a profession are viewed as the same by the public. The nature of the established jurisdictions is less sharply differentiated but is still clearly differentiated (1988).

The third setting, the workplace, is where jurisdictional claims become more blurred than in legal and public jurisdictions. In this setting, professionals enforce their legal jurisdiction, control professional language, and execute direct and symbolic subordination. The members of a given profession have internal differentiation and their established jurisdictions are extremely hazy (Abbott, 1986, p. 191). The professionals make rules within the workplace regarding which tasks they perform, and which ones they will refer to other professions (1988, p. 64). In this way, divisions of labour become entrenched, as professionals negotiate tasks in different situations. Boundaries become less evident in the workplace, with the different professions performing tasks allocated to one another. The shifting of boundaries is determined through on-the-job knowledge transfer (referred to as assimilation) between professions, as is becoming more apparent. This is how a subordinate or related profession acquires the means for diagnostic and therapeutic care. One of the vital aspects of

workplace jurisdiction is that the output of an individual is more significant than their credentials or status. Abbott indicates that "it is in the workplaces, then, that the actual complexity of professional life insists on having its effect" (1988, p. 65).

Even though legal and public jurisdictional claims are dominant, a key aspect of the latter can be made through the assimilation of knowledge in the workplace. In dental occupations, the assimilation of tasks has become pervasive, as hygienists have been working under the direct supervision of dentists for many years. Tasks such as making a dental diagnosis have been transferred to hygienists, and they find themselves at times to be the first port of call for patients in the practice. The study will consider how dental occupations negotiate the boundaries of others in different jurisdictional settings.

4.2.4.2 Jurisdictional settlements

When a profession controls its work, there can either be total dominance or numerous versions of limited control. According to Abbott, every profession strives to dominate its jurisdiction, and he states that control ought to be legitimated by the profession's knowledge, and should be established in the law. Further to this, it should shape the public understanding of the tasks that it performs (1988, p. 71). Halpern defines professional dominance as "control over the jurisdiction of a neighbouring occupation" (Halpern, 1992, p. 995). According to Abbott (1988), control is not always total dominance. In each of the settings described above, professions make use of distinct ways to settle a claim to jurisdiction. Abbott outlines five limited settlements through which a profession can be in control of a problem in Table 10.

He indicates that each settlement can serve as a transition to some other form, although there are characteristic relations between them. First, he indicates that conflict over jurisdiction can be settled through the subordination of one profession under the other. Second, subordination can be intellectual, with the dominant profession having cognitive control of the jurisdiction, and consenting to practical jurisdiction being shared. Third, professions can form a division of labour by splitting jurisdiction into two parts, and sometimes sharing a common area with another profession. Fourth, one profession has

advisory control over certain aspects of the work. Finally, jurisdictions can be divided not only according to the content of work but it could be according to the nature of the client (1988, p. 70).

Table 10 Types of limited jurisdictional settlements (Abbott, 1986, p. 191)

Settlement Type	Explanation
Subordination	A junior profession accepts the tutelage of a senior one in exchange for control in its limited sphere.
Intellectual control	A profession is unable to fully service a jurisdiction and claims control over others' practice within it on the grounds of providing the cultural capital of practice. It has cognitive control.
Division of labour	Control of a given area of work is split between different professions. It sometimes reveals differentiation of function – but this is not required.
Advisory control	A profession has the right to offer advice or partial services to clients of other professions.
Clientele differentiation	A profession deliberately fails to serve certain client groups, usually because they lack the funds to command professional service. Here new groups arise to compete with the dominant profession. Jurisdiction is divided according to the nature of the clients.

Subordination is the most familiar form of settlement, and here, the superordinate profession controls a complex division of labour, with subordinates taking their places in it (Abbott, 1986, p. 71-72). Subordinate professions often acquire knowledge and skills through workplace assimilation and try to subdivide tasks for themselves. This form of settlement is advantageous for the superordinate professions, as it allows for an extension of the work without the requisite expertise, and delegation of routine work. This type of jurisdictional settlement is seen as an example in the nursing profession. According to Kroezen et al. (2013), countries differ in the jurisdictional settlements of the nursing and medical professions concerning the prescribing of medicines. Sometimes, nurses share jurisdiction with the medical profession, and at other times, nurses prescribe from a more subordinate position. This example brings together competition under jurisdictional settings and settlements. In Figure 6 Kroezen et al. (2013) suggest internal and external forces that lead to the introduction of the task of nurses prescribing medicines. These forces could be occurring in one of the three jurisdictional settings (arenas), either through the legal system, the public, or the workplace. Furthermore, different jurisdictional settlements, as described above, can influence the jurisdiction of a given profession.

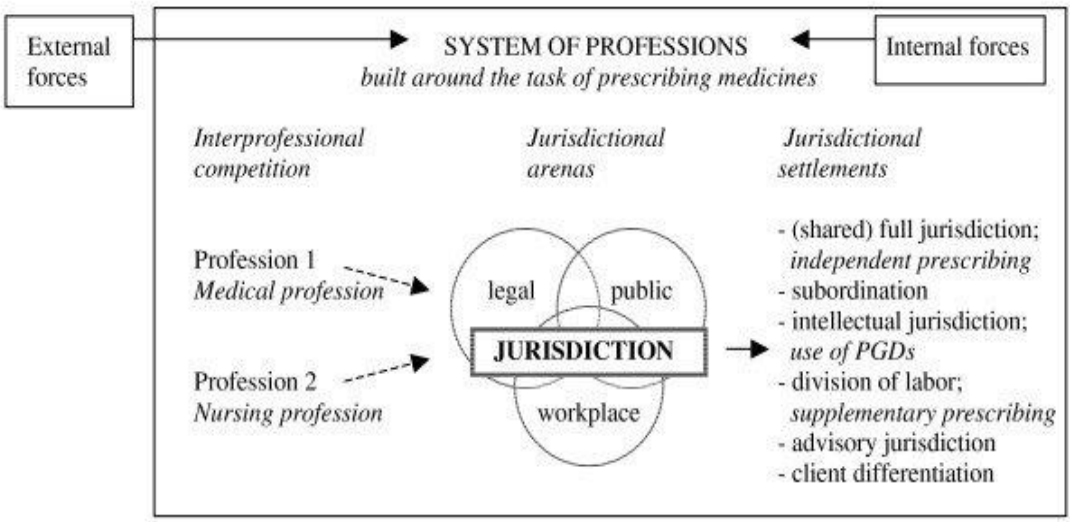


Figure 6 Jurisdictional settlements and prescribing medicines in the nursing profession. (Source Kroezen et al, 2011)

The illustration shows that in this case, nurses have gained intellectual jurisdiction through the use of postgraduate degree programmes, as well as the jurisdiction of division of labour through supplementary prescribing. In dental professions, anecdotal evidence indicates that hygienists have been performing tooth whitening techniques before it was legislated as their scope. The workplace assimilation has been to the benefit of dentists as they would have an increased income for such tasks done by hygienists, and because these hygienists are striving to claim these tasks for themselves. The distinction between different settlements made by Abbott (1988) provides a mechanism through which to evaluate whether this has changed for dental occupations. The study will investigate whether jurisdiction is being claimed through the different settlements among dental occupations, and assess contestations of jurisdictional claims.

4.2.4.3 Jurisdictional conflicts

When professions lay claim to certain tasks, competition or conflict may arise. There are three forms of jurisdictional conflict described by Abbott, namely: those arising from excessive jurisdiction, insufficient jurisdiction, and invasions with price-cutting (Abbott, 1986, p. 195). First, he explains excessive jurisdiction, where the profession is unable to handle increased demands and thus faces invasion by outside professions. This differs if such expansion for demand is quantitative or qualitative. With the quantitative expansion,

the profession already possesses a sort of cultural or subjective jurisdiction and protects the expansion using the best possible form of settlement (i.e., either through division of labour, subordination, intellectual settlement, or clientele differentiation) (1986, p. 195). Whereas, with qualitative expansion, the cultural jurisdiction of the profession is not clear, so an invading profession has the opportunity to gain the profession's cultural jurisdiction. Second, conflict arises when an occupation has insufficient jurisdiction, therefore the occupation has to look for work. In the case of insufficient jurisdiction, a profession may either want to expand its existing settlements, or move into new jurisdictional areas (ibid.). Abbott points out that when there is an excessive expansion of jurisdiction or insufficiency of jurisdiction, such expansion occurs in the workplace at first, and later establishes itself in public and legal settings. The third type of conflict may arise when professions with established jurisdictions are invaded by any other profession that provides the same services at lower prices, which causes conflict. Such professions can convince the public that their jurisdiction is as good as the other profession at a lower price e.g., through campaigns advertising their lower costs (Abbott, 1986, p. 195). In the dental sector, it is evident that mid-level dental occupations are searching to develop their jurisdiction and are offering dental services at lower prices, which may have started conflict with the dental profession. This discussion provides an approach to investigating why professions compete or have conflict over jurisdictions. As I try to appreciate workplace inter-relations between dental professions, the emphasis would be on distinguishing the areas of conflict.

4.2.5. Summary of Work and Relations

As seen above, several conditions assist in the process of professionalisation and autonomy over work practices. They facilitate and/or constrain professions' ability to maintain specialisation and to possess control over tasks. For a profession to preserve an exclusive division of labour and have autonomy over tasks, they need to negotiate the right to perform these tasks. Professions negotiate exclusivity over their jurisdictions through various arenas, which allow for either the advancement or regression of an occupation. Jurisdictional claims are made in different settings such as the legal system, the public, and the workplace. Another path to control is that there are different ways to settle a claim to jurisdiction. The relations between occupations generate different jurisdictional

settlements, which assist in how control is afforded. Finally, different types of jurisdictional conflict become evident depending on the extent of the claims made by an occupation. The type of jurisdictional conflict that arises among occupations creates opportunities for one occupation to extend its control over more tasks.

As the literature in the previous chapters has shown, dentists have maintained control over the tasks they perform. While mid-level dental occupations desire greater control and expansion of their scope, this is evident when they advocate for claiming jurisdiction over certain tasks for example different local anaesthesia techniques. This would require more specialised knowledge (e.g., Anatomy, Pharmacology, etc.), which should be taught in greater depth. In this study, I want to clarify the jurisdiction that mid-level dental occupations have over common tasks, by studying what occurs in education and training.

The concepts of division of labour, specialisation, and autonomy also refer to the role of knowledge in jurisdiction-making in work situations. Thus, an exploration of training specifically for those tasks common to the three occupations. In the main, knowledge informs discretion, which leads to jurisdiction over claims. This points the discussion in the next section toward specialised knowledge and practical skills, which are critical for investigating ways in which curricula prepare for work.

4.3 Professional Judgment, Specialised Knowledge and Curriculum

As already stated above, in practice, there are different processes whereby occupations control the work of others. In this section, I move to explore more specifically how specialised knowledge influences the division of labour and decision-making in occupations. The capacity to possess specialised knowledge sustains dominant professions' position and control, which is entrenched through professional training, recruiting, and licensing (Abbott, 1988). This means that the specialisation of knowledge allows professionals to make better judgements in their work. Kroezen et al (2013) show that claims made by nurses over the knowledge that they possess shape their professional status, inter-professional competition, and the jurisdictional settlements between themselves and the medical profession. This thesis concerns the professionalisation of mid-level dental occupations and attempts to

explore the extent to which education and training are used by the dominant occupation, dentistry to control them.

Numerous researchers concur with Abbott (1988) that the systematic acquisition of bodies of knowledge enables judgement at work and the advancement of an occupational identity (Shalem & Slonimsky, 2013; Young & Muller, 2014; Wheelahan, 2010; Winch, 2010). According to Eraut (cited in Winch, 2014), professional curricula ought to develop the skills required to reason, make judgements, and act in complex and unpredictable work situations. Eraut argues for the importance of differentiating knowledge and how they are understood and stated in the intended curriculum. This section considers the link between professional tasks and professional knowledge, the different knowledge types, and the implications of including specialised knowledge in professional curricula, which strengthens judgment.

4.3.1 Professional Judgment and Tasks

To understand professional judgement, it is vital to make the connection between professional tasks that are performed in the workplace and knowledge taught in educational institutions. The analysis in this section adds to my intent to provide an approach with which to discover the observations of dental occupations regarding their ability to make decisions independently.

The study by Nelson and Silvers (2009) on the professionalisation of the Event Management industry, uses Abbotts' argument to show that it is still struggling to determine the relevant specialised knowledge and skills that are required to advance this profession. Nelson and Silvers indicate that the knowledge found in various associated curricula is not aligned and differs across training courses in different countries. In Figure 7 below, Nelson and Silvers represent the types of conceptual knowledge that according to Abbott professions draw on when they exercise judgement and how they draw on such knowledge (Abbott, 1988, p. 53). Abbott indicates that formal knowledge is ordered and organised by concepts. Abbott identifies three acts of professional practice as key for making a jurisdictional claim.

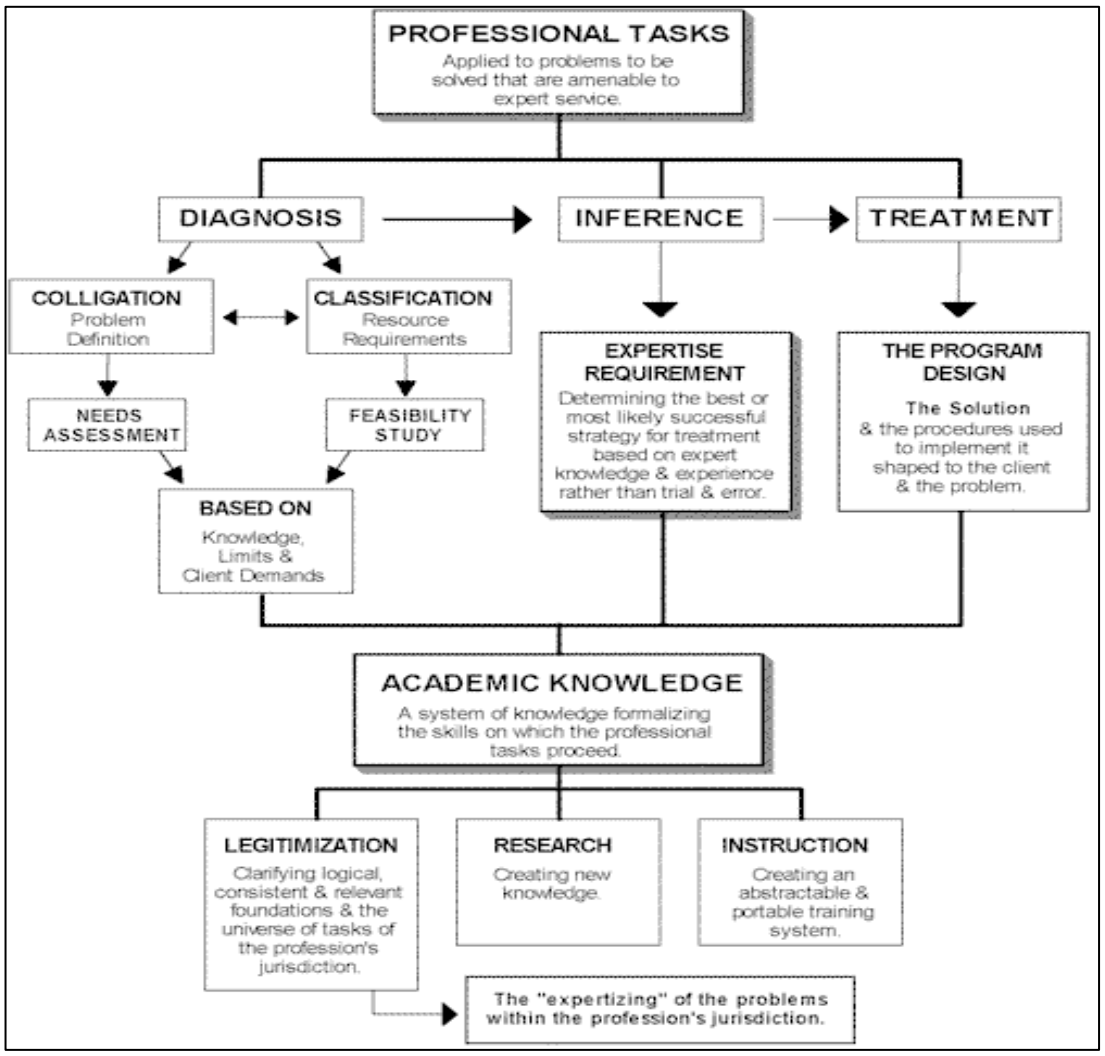


Figure 7 Parameters of professional work (Rutherford Silvers, 2003)

The acts are diagnosis (classifying the problem), inference (reasoning about it), and treatment (to take action on it) (Abbott, 1988, p. 40). These acts are tied to a system of knowledge that formalises the process of judgment required for work. During 'diagnosis', information is taken into the knowledge system using two processes, namely 'colligation' and 'classification'. Colligation refers to when a picture is constructed from a problem, using rules of the occupation, which will determine the relevance, validity, or ambiguity of the information to make the diagnosis. Classification links that picture to problems within a profession, where, during this process, problems are related to the professions' concepts, evidence, and relevance (ibid.). In the 'treatment' process, instructions are brought back from the knowledge system and here problems are clumped together with similar treatments. Depending on the association between diagnosis and treatment, there may be

demands by one profession to delegate tasks or de-professionalise another (Abbott, 1988, p. 46). This will depend on whether the profession has the specialised knowledge to consider the information coming into the system or whether the profession can implement a solution to the problem. Control that a profession may possess can be weakened by the efficacy of treatment or the measurability of results. 'Inference' occurs when the relation between diagnosis and treatment becomes uncertain. Being unable to use inference makes a jurisdiction weak, whereas too little inference makes tasks routine, thereby setting the stage for delegation to subordinate professions or de-professionalisation by the State. Shalem (2014) indicates that having the ability to make inferences is key to specialisation, where understand what prompts an inferential act for judgement-making, one has to recognise the conceptual structure and complexity of the body of knowledge. Furthermore, she mentions that lacking this, professional judgment will remain context-bound and untrustworthy (Shalem, 2014, p. 101). Too much inference, by contrast, makes tasks impossible to validate (Abbott, 1988, p. 52). In both situations, the jurisdiction of the profession becomes undermined. If there is no rigour in subjectivity, other professions may intervene in jurisdiction-making.

In the process of diagnosis, inference, and treatment, there is a reliance on academic knowledge, which gives a profession control over their tasks. Such academic knowledge is supported by three actions (seen in Figure 7), namely: legitimisation, research, and instruction. Through a process of legitimisation, the professional develops the expertise to deal with the profession's problems by acquiring logical, consistent and relevant foundational knowledge. The process of research serves to generate knowledge and instruction and provides a formal transferable training system for the profession.

In the discussion above, the relationship between propositional (or conceptual) knowledge and professional action highlights the use of discretion. Winch (2010) agrees that discretion is essential for work, and reflects on the role of judgement in professional acts. He suggests that professional judgment is supported by "reasoning that leads to judgment" informing an action (Winch, 2010, p. 106). The quality of judgements is not determined by the existence of a procedure but by the knowledge base, as well as its situational relevance (Winch, 2010,

p. 108). Furthermore, Winch (2014) argues that it is difficult to be taught a technique for judgement-making, as decisions ought to be made in challenging situations and then reflected upon. Shalem (2014) discusses professional judgement in teaching and argues that to recognise professional judgements, it is necessary not only to know the process of making a judgement, but also to understand the distinctive epistemic arrangement of professional knowledge. In this regard, she indicates that the knowledge that informs the decision to attend to a particular situation must be more extensive than what the specific situation entails. Shalem (2014) states that

> Classifications that are formal, content-rich, domain-specific, and contain externally verifiable evidence, bind judgement in specific situations. They provide the basis for the inferential act and keep the jurisdiction within the profession and protect its specialisation (2014, p. 103).

In the process of obtaining jurisdiction, a professional must develop the ability to make sound judgements in practice. This focus on specialised knowledge helps an occupation to hold its jurisdiction and protect the specialisation (Shalem, 2014). Situations with increasing complexity ought to be built into the professional curriculum to develop judgment-making.

In dentistry, certain tasks (e.g., scaling and polishing) have become so routine for dentists that these tasks have been delegated to mid-level dental occupations. Furthermore, complicated tasks such as restorations and local anaesthesia have also been delegated to hygienists, which require greater specialised knowledge according to which they would need to make appropriate judgements. In such a situation, certain knowledge types inform judgment and give a profession jurisdiction over tasks. This thesis will capture the preparation for the specialisation of mid-level dental occupations and how this has influenced their advancement. Consequently, the discussion now moves to the typologies of knowledge bases which will help in analysing the idea of specialised knowledge in the curriculum. From such an analysis implications may be drawn regarding the discretion-making that occupations gain through the knowledge found in their curriculum.

4.3.2 Differentiating Professional Knowledge

The division of labour within occupations requires different knowledge types. These differences lead to questions about the most valued knowledge required by occupations in preparation for work. This section outlines knowledge typologies and further distinguishes between theoretical and practical knowledge.

4.3.2.1 Knowledge typologies

Professional knowledge is comprised of different types and distinguishing these types contributes to the basis of curricula. Several scholars propose knowledge typologies (Bernstein, 2000; Freidson, 2001; Gamble, 2016; Muller, 2009; Vergotine, 2015) to distinguish the types of knowledge and their use within occupations. Here I provide a brief review of knowledge typologies by Muller (2009) and how these were used in this research on curricula (Vergotine, 2015).

Muller (2009) provides distinctions of professional knowledge (based on the work of Biglan), which proposes the following knowledge types: 'hard-pure' (e.g. physics), 'soft-pure' (e.g. psychology), 'hard-applied' (e.g. engineering) and 'soft-applied' (e.g. teaching). These distinctions help to analyse the curricula of different occupations. In prior research (Vergotine, 2015), a knowledge typology (drawn from Muller) was constructed to analyse oral hygiene curricula. This typology helped to distinguish the dominant knowledge found in two respective Bachelor in Oral Hygiene curricula. I accessed all the courses in the two curricula to determine how much emphasis is given to the different knowledge types. In addition to Mullers' knowledge types, I included generic knowledge and introduced a new category of 'clinical applied' knowledge that highlights specific 'applied' dentistry content. The findings of my MDiss showed that the two curricula focus on 'clinical applied' knowledge, some generic knowledge, and a small emphasis on 'pure' knowledge. The study proposes that in one of the curricula, procedural preparation for practice is paramount, and students are trained on more technical aspects of practice (Vergotine, 2015). While the other curriculum had less of a procedural slant, with greater emphasis on 'soft applied' knowledge. The study has helped me to have a better understanding of how the selection of knowledge types in curricula prepares students for work. This understanding of curricular

knowledge lends itself to an examination of how the distinction between theoretical and practical knowledge assists in the preparation for mid-level dental work.

The research described above demonstrates how distinguishing knowledge types contributes to our understanding of what is required to prepare us for work. Despite having different descriptions of knowledge, these authors claim that a profession must have access to formal knowledge. I move to various authors that differentiate between theoretical and practical knowledge.

4.3.2.2 Theoretical vs. practical knowledge

To explore professions and their actions in the workplace, another distinction arises between the theoretical and practical. Many theorists describe theoretical and practical knowledge differently, as outlined below.

Theoretical knowledge is described either as formal knowledge (Freidson, 2001; Gamble, 2016), abstract knowledge/academic abstractions (Abbott, 1988), knowledge-that/systematic knowledge/propositional knowledge (Clarke & Winch, 2004; Winch, 2010, 2013). In this study, I use Abbotts' view of abstract knowledge which he defines as organised, structured, and efficient in training institutions (Abbott, 1988).

Practical knowledge is known as either procedural knowledge (Gamble, 2016), know-how (Winch, 2013), or manual discretionary work (Freidson, 2001). The context-specific knowledge displayed in the workplace is described as disorganised and coupled to the requirements of clients and tasks (Abbott, 1988). Practical knowledge requires further explanation to understand its role in judgment-making in the workplace.

For Winch, abstract knowledge is explained as propositional knowledge, whereas his suggestion comes from an explanation of knowledge in the German language.
German distinguishes between two kinds of propositional knowledge, viz. Kenntnis, which concerns contingent and discrete propositional knowledge, and Wissen, which is organised propositional knowledge, including what in English would be called scientific and theoretical

knowledge. Wissen is important for our inquiry as it is claimed, for example, within the German vocational system that mastery of a Beruf involves the application of Wissen to practice. It might be possible to attribute Kenntnis and even a degree of Wissen to someone based on observation of their actions in the workplace (Winch, 2010, p. 103).

Here, Winch argues that having both ‘Kenntnis’ and ‘Wissen' will ensure that propositional knowledge is accessible for judgement-making, and can be applied in the performance of practical tasks. This means that occupations require the application of structured bodies of knowledge to perform tasks in the workplace. According to Paul Hirst (cited in (Winch, 2010), organised bodies of knowledge involve the knowledge of both propositions and tasks.

4.3.2.3 Linking propositional knowledge to professional action

Winch (2010) argues that to do something practically (knowledge-how) one has to have the 'propositional' knowledge (knowledge-that) that is true. He distinguishes between two kinds of 'know-how' essential for systematically organised knowledge. The first is 'knowledge of inferential relations between propositions', which includes being able to reason about factual knowledge and ideas, principles, and techniques. The second, 'knowledge of the procedures in assessing, testing, and acquiring new knowledge', are the judgements made to produce new knowledge (Winch, 2010). Inferential comprehension occurs continuously while performing a skill that relies on the professional to relate ideas to one another to make decisions.

Winch (Winch, 2013) demonstrates how propositional knowledge is linked to practical tasks in the workplace. He indicates that the professional must know how to perform a variety of interconnected tasks to be effective. These tasks vary depending on the type of task and the workplace setting. Know-how can thus be applied to tasks in different yet related ways; these are: exercising a skill, transversal abilities, and project management abilities (2013, pp. 284–295). When exercising a skill, types of tasks mainly require hand-eye coordination and/or manual dexterity. These tasks have a routine and are easy to perform because their operations and procedures have been pre-approved. The exercise of skill is an intentional

activity and involves aspects of agency by the professional. Thus, there are criteria for how well a skill is exercised. The knowledge required for mastering a task is more than just describing the technique, but includes tacit elements of the technique, together with the judgement that is learned in the workplace (Winch, 2013a, pp. 283–286).

Polymorphous/transversal abilities highlight that some activities are not connected to a single task, but are transferable in different instances. This type of know-how can be demonstrated in different ways, depending on the context. They include planning, controlling, coordinating, communicating, and evaluating. This requires the professional to select and organise their different skills using professional judgement, which develops over time. The manner in which these activities are undertaken is evaluated to assess the thoroughness with which it is done, as well as whether the judgement was used beforehand (Winch, 2013, pp. 288–290). Project management emphasises that different transversal activities can be assigned to professionals. In this form of know-how, agency is more complex and requires creativity and deeper contemplation when formulating a strategy and procedures. These professionals' knowledge and skills become more advanced over the long term, and the professionals understand how to manage their roles and responsibilities. Vast project management abilities could lead to professional mobility, thereby advancing oneself within the profession and increasing autonomy and responsibility (Winch, 2013, pp. 293–294).

The three types of know-how described above are related, in the sense that skills are regarded as first-order activities manifested as the performance of tasks. Polymorphous abilities are second-order abilities that can be conveyed through a sequence of tasks and demonstrated according to the sequencing of the first-order tasks. To manage a project, different mixes of second-order abilities are required and involve forms of independent action. Winch (2013) indicates that these are nested within each other, and one would require skill, as well as transversal abilities, to manage a project, showing that in project management, one cannot plan or coordinate without having the first and second-order skills. They are vital in decision-making, where the professional uses different concepts to reason despite the difficulty of the problem or the context in which it must be performed.

The arguments cited here have come to similar conclusions, namely that occupation requires access to bodies of knowledge that guide professionals when addressing a specific problem (Abbott, 1988; Freidson, 2001; Winch, 2013). In Winch's words "systematically organized [sic] knowledge can be used to form professional judgements in occupational situations" (Winch, 2010, p. 114). This allows the professional to make a diagnosis of that which applies to the problem.

This thesis examines how specialised knowledge is emphasised in the intended curriculum and how such knowledge influences professional action in the workplace.

Furthermore, such theoretical knowledge is also foundational for experiencing different types of practical knowledge (know-how) (Winch, 2013). Accordingly to this, professions possess systematically organised knowledge and three types of practical knowledge. The exclusive specialisation of content confers control over the judgment-making of its members.

4.3.3 Relevance of Knowledge Types in Curricula

The discourse regarding the difference between theoretical and practical knowledge has been outlined above. The claim is that theoretical knowledge is the foundation for practical knowledge, and this can be demonstrated in professional curricula. According to Barnett, it is especially crucial to understand the relationship between theoretical and practical knowledge for curricula that 'face both ways' (Barnett, 2006, p. 152), that is, inwardly toward disciplines, and outwardly toward fields of practice. Practical knowledge in professional curricula requires systematically organised bodies of knowledge to problem-solve, which includes various combinations, together with theoretical knowledge (Abbott, 1988; Freidson, 2001; Gamble, 2004; Shay et al., 2011; Winch, 2010, 2013). Freidson (2001) indicates that,

> to solve an abstract problem, one must not only have command over the body of knowledge connected with the problem, but also the rules of discourse (that is, the rules of evidence and reasoning), and the capacity to employ these so as to arrive at an acceptable solution (Freidson, 2001, p27).

This means that a professional requires a good grasp of the different bodies of knowledge to make inferences about a problem within a profession. This will include the main concepts of both the abstract and practical knowledge of a task, to test their knowledge claims.

Lecturers recontextualise abstract knowledge so that it applies to the practical demands of work. In this process, skills, techniques, and processes of practice are transformed into abstract knowledge (LaMere, 2012, p. 2). Forms of knowledge in the workplace and forms of knowledge in the curriculum need to be differentiated (Gamble, 2016).

In this study, I plan to examine the intended curricula of dental occupations in preparation for work and the tasks they share. This is to show differences and similarities in education and training specifically in their common procedures. In the dental profession, theoretical knowledge and practical knowledge and skill are required to perform procedures, I intend to establish the theoretical knowledge underlying common tasks in mid-level dental curricula to understand how these occupations are prepared for work.

4.3.4 Summary of Professional Judgment and Preparation for Work

Specialised knowledge is crucial for professionals when making judgements in practice, as it helps an occupation to hold its jurisdiction and protect its specialisation. Many different knowledge typologies underpin preparation for work. In this thesis, I focus on theoretical and practical knowledge examining their place in the curricula of dental occupations.

The debates in this review of the literature show that hierarchy in the division of labour is influenced by discretion and jurisdictional claims to exercise practical knowledge through different kinds of know-how. These are underpinned by systematically organised bodies of knowledge. Occupations with expert knowledge possess a form of capital that confers status and power to their members. This helps these occupations to sustain their positions of control and competition over others, which is further entrenched by specialised knowledge. The preparation for work differs in terms of what is taught, what is emphasised, the knowledge valued, and how procedures are contested. All of this influences the discretion,

levels of proficiency, status, and thus the professionalisation of occupations. This study will analyse different issues related to the preparation for work and the specialised knowledge about the common tasks performed by mid-level dental occupations.

4.4 Conclusion of Contextual Framework

I created a visual representation, captured in *Figure 8* below, to show how I have tried to put together the different concepts into a framework, as discussed throughout this chapter. These concepts point to the two arenas of education and work, which are related and ultimately influence professionalisation.

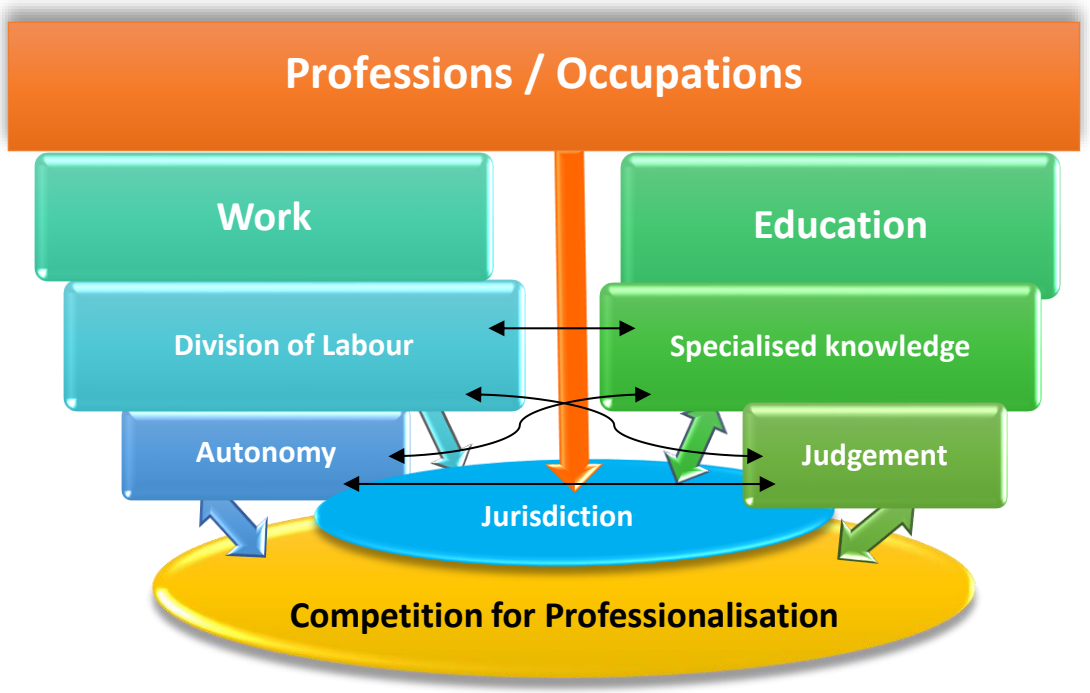


Figure 8 Conceptual model for researching practice and education

The framework for researching education and work comprises critical concepts for understanding what occurs in the education and work arenas. As uncovered in this chapter, this conceptual framework consists of five concepts, namely: division of labour, autonomy, specialised knowledge, judgement, and jurisdiction which operates within the context of

occupations/professions. These concepts are linked through the competition, which emerges in the 'professionalisation' process, or more broadly in the relationship between education and work. In the sphere of work, the concepts include the 'division of labour' and 'autonomy'. These concepts emphasise that the structure and social relations, together with the control over tasks, give rise to boundary shifts among occupations. Work is divided and hierarchies are created around who controls the different tasks that comprise the occupational field, in this case, the field of dentistry. Concepts that are crucial for understanding the sphere of education include 'specialised knowledge' and 'judgement'. These concepts refer to the use of systematically organized knowledge in preparation for work and how this allows members of an occupation to make judgements. Finally, specialised knowledge and professional judgement are key concepts when investigating preparation and specialisation for work, which aid in an occupation having jurisdiction over their tasks. They constitute the underlying conceptual framework of this project, which would aid in analysing participants' perceptions of boundary contestations within the dental profession. By outlining these concepts, I will be able to assess the relations within the dental profession, how work is controlled and how boundary shifts are maintained or pressured.

In the framework, the black arrows depict specialised knowledge that influences the division of labour, autonomy, judgement and jurisdiction which ultimately affects the professionalisation within an occupation. This chapter has described these concepts and shows the associations to the study of occupational boundaries in the dental sector. A dentist's objections to the advancement of the oral hygiene profession are expected. This is evident as dentists dominate daily practice and as they manipulate this process further during training. This is also expected given the hierarchical relationship within the dental profession. However, there is a more interesting outcome, which is somewhat unexpected, that exposes the fact that hygienists themselves seem to be hesitant to take on the expanded scope. The concepts portrayed will be used to develop a better understanding of the hygienists' response to the contestations in the labour market and training institutions.

The underpinning assumption of this conceptual framework is that the theoretical ideas provide a lens with which to interrogate different strategies that protect and advance professional expertise and the power relations between the three occupations. The six concepts outlined in the framework will be operationalised into criteria with which to examine the empirical objects found within the dental field (this will be illustrated further in the methodology to follow). With these concepts and criteria in mind, the study examines changes in the division of labour of the dental profession, boundary contestations, the preparation for work, the types of knowledge in the different curricula, and how perceptions regarding the daily work practices of the three occupations are understood.

The analysis suggests that professions require specialised knowledge to gain control over their work and to have social acceptability. This study will interrogate attempted shifts in hierarchy and control among dental occupations and any possible contestations that may have arisen within the dental profession in South Africa.

The debates in this review of the literature show that hierarchy in the division of labour is influenced by discretion and jurisdictional claims to exercise practical knowledge through different kinds of know-how. These are underpinned by systematically organised bodies of knowledge. Professions with expert knowledge possess a form of capital that confers status and power to their members. This helps these professions sustain their positions of control and competition over other professions, which is further entrenched by how knowledge is acquired from curricula. The curriculum differs in terms of the types of knowledge valued, the focus of certain knowledge types, and how these are sequenced within curricula. All of this influences the discretion, levels of proficiency, status, and thus the professionalisation of occupations. This study analyses the knowledge about the common tasks performed by mid-level dental occupations.

4.5 Summary of Literature Review Chapters

This section focuses on the main claims and concepts of the three literature review chapters. The literature described in Chapters 2, 3 and 4 has raised the following claims. In Chapter 2 the literature exposes the following key claims, the supply of mid-level dental

occupations has been slow, and there is competition in daily practices and professional relations of dental professionals. Chapter 3 highlights that education and training opportunities are limited for mid-level dental occupations. It also shows the structure and content of different curricula, the maintenance of our programmes and the adequacy of mid-level dental education and training are being questioned. In Chapter 4, the relationship between occupations and their work raises questions about jurisdiction, showing that social structures that sustain occupations and control over work are changing. The link between education and work is that dominant occupations use specialised knowledge to have power and control over subordinate occupations. The preparation for work has to focus on specialised knowledge which includes propositional knowledge which culminates in professional action.

CHAPTER 5

METHODOLOGY

Chapter 1 outlines the directive of the South African government to enable the dental profession to provide services equitably and ethically to the entire population. It highlights that this shapes the scope and autonomy of dental occupations influencing boundaries in the workplace and training institutions. This study hence explored how the different dental occupations relate to one another in various contexts to understand the boundary shifts in the dental profession in South Africa.

Considering the above and when discussing the methodology of this study, it is crucial to restate the main research question:: How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced professional boundaries within the dental profession? Further, the research sub-questions are outlined once more to appreciate the purpose of undertaking the study:

1. What are dental professionals' perceptions of the work practices of oral hygienists?
2. How are oral hygienists responding to the policy amendments?
3. How are dental curricula preparing learners for shared procedures (e.g., local anaesthesia, restorations)?
4. How does examining the work and education of dental occupations help us to understand inter-professional conflict?

This chapter will provide the methodological logic of this study; it includes the research approach and the methodological strategy used during data collection. Furthermore, the chapter explains the data analysis framework and procedures used to analyse the data. Finally, the limitations of the study and the ethical considerations that were considered during the study are provided.

5.1 Research Philosophy

The research philosophy outlines my beliefs about how this research has to be collected, analysed, and interpreted. I cover three aspects, a brief discussion about the research design, my role and position in qualitative research, and the motivations for this journey.

5.1.1 Research Design: A Qualitative Study

This research project made use of a qualitative research design using an interpretativist approach. According to Chesebro and Borishoff (2007), an interpretivist approach to qualitative research is where the conception of the world is made real through people's actions and thoughts—it emerges and does not exist in some external and readily discovered form (p.11). In this study, stakeholders in the dental profession offer a glimpse into their world by providing different perceptions of their daily experiences.

5.1.2 My Role as a Researcher in Qualitative Research

In this section, I discuss my role as the primary researcher in this interpretivist qualitative study and how this type of research influences my actions and the outcomes of the study. Qualitative research is dependent on the quality of the researchers' interpretation of the findings and how these are explained. The researcher, therefore, plays a fundamental role in the worthiness of the qualitative research process. Tracy (2013), notes that
In qualitative methods, the researcher is the instrument. Observations are registered through the researcher's mind and body. In such circumstances, self-reflexivity about one's goals, interests, proclivities, and biases is especially important (p.25)

Therefore understanding my role in this interpretivist qualitative research project has permitted me to acknowledge my ability to be self-conscious and reflexive during the research process. Furthermore, by being reflexive and explicit, issues of reliability and validity are addressed (Råheim et al., 2016). With this chapter, I want to show how my reflections on the dental profession helped me to explore this academic project and the research process with truthfulness.

5.1.3 Reflecting on My Research Journey

As a dental professional and academic with more than thirty years of experience in various dental settings, I am passionate about the quality of future professionals who will deliver dental services in South Africa. Earlier in Chapters 1 and 2, I cited research that shows that South Africa is an economically unequal country, where dental services are affordable mainly for the wealthy, leaving millions of citizens without this much-needed care. The literature review revealed that mid-level dental professionals contribute significantly to giving greater access to dental services. I, therefore, believe that they can impact the inequalities of the past by providing basic dental services to communities in need. However, there has always been a skewed combination of dental professionals offering these services, with mid-level dental occupations being in short supply and underutilized in terms of their scope of practice. This has prompted the demand for a mixed and well-integrated dental team with quality training that could address the massive disease burden in South Africa. This is the context of the underlying motivators during my research journey.

I, therefore, examined perceptions within the dental profession to assess how different dental occupational groups respond to changes in scope in daily practice and through curricula in particular. Being an oral hygienist and lecturer, my experiences over the years have shaped my perspective on what occurs in the workplace and during training. It has prompted me to think about my encounters with dental professionals and the relations between the different occupational groups. This has influenced my interest in examining the perspectives of dental occupations on interprofessional relations in South Africa. I came into this study as both an insider (oral hygienist) and outsider (researcher) which made me feel vulnerable, especially because of the demanding inherent dual roles I held.

At the commencement of this research journey, I was eager to understand how South African oral hygienists are adapting to the changes in scope and autonomy. This meant, that I planned to investigate mainly hygienists' perceptions and observe their daily practices. I aimed to illuminate perceived reasons for the domination of dentists over hygienists, as well as the concerns raised during training which I witnessed during my working life. During the interviews, I experienced the challenge of hierarchy and status among dental professionals.

As the project evolved, additional stakeholders were incorporated to get a wider perspective on some of the challenges that hygienists encounter. This comprised examining three dental occupations to understand relationships within the dental profession after scope changes were implemented for hygienists.

5.2 Methodological Framework

This section describes how the research was approached and the data collection and analysis processes which were undertaken. The research was carried out in two phases which used different data collection methods. In Phase 1 an analysis of relevant documents provided the basis for understanding the dental sector in South Africa. This assessment was mainly to understand the changes in scope for the three occupations and to discover the trajectory of mid-level dental occupations' progress to date. In Phase 2, interviews and a curriculum analysis were undertaken, to assess boundary contestations in the labour market and in education, respectively, related to the scope and autonomy of the three dental occupations.

5.2.1 Data Collection Methods

In my endeavour to determine how changing divisions of labour in the dental profession are associated with transformation in daily work practices, curriculum change, and occupational advancement, I used three data collection methods, which included document analysis, interviews, and analyses of curricula. The data types that were collected using the above three tools included relevant policy documents, correspondence and reports, interview recordings and transcripts, and university rule books and course outlines. A comprehensive description of how the three sets of data were collected is outlined below.

5.2.1.1 Data collection method 1: Document analysis

The first data collection tool involved a document analysis, which included gathering and analyses of relevant government policies and any other stakeholder documents. The researcher searched the webpages of the HPCSA and Sabinet for all policy documents related to the three occupations and the latest changes over the past 20 years. In addition, professional associations, universities and boards were requested to provide any

correspondence or reports on policy changes and queries they have dealt with in this regard. Table 11 indicates the various documents that were collected and analysed. The documents are broadly categorised into policy documents, correspondence, and reports.

Table 11 Documents collected and analysed

Document Type	Contents	Source	Sourced documents
Policy documents	Regulations to practice: Supervision and IPP Scope of practice Expanded functions	HPCSA website and professional boards	Scope of the Profession Dentistry Govt Gazette 31958 (R238) 2000 Dentists' regulations to practice Govt Gazette 21792 (R1201) 2009
			Scope of the Profession Dentists Gov Gazette No 31958, (R238) March,2009
			Scope of the Profession Dental Therapy Government Notice No. R 844 of 19 April 1991 Government Notice No. R.1741 of) 7 Sept 1993 Govt Gazette No. 33544 (R802) Sept 2010 Govt Gazette No. 40414 (R1391) Nov 2016
			Scope of the profession Oral Hygiene Gov gazette No. (R1729) 1985, Gov gazette No. (R1150) 2000, Gov gazette No. 36944 (R800) 2013, Gov gazette No. 40996 (R713) 2017
Correspondence and Reports	Supervision and IPP Scope of practice Remuneration Expanded functions	HPCSA professional boards	Letters and emails Letters and emails from DTASA scope and IPP
		OHASA	Emails from OHASA and board of healthcare funders on remuneration for procedures Letters and emails from OHASA scope and IPP
		HEIs	Letters - OH expanded functions courses 2016

Table 11 shows the relevant policies, professional bodies and higher education correspondence that were interrogated to uncover how jurisdiction and autonomy among the three dental occupations have been shared over time. Archived and current documents relating to policies and procedures on the scope of practice and autonomy over the past twenty years were requested from:

- two Health Professions Council of South Africa (HPCSA) professional boards: the Medical and Dental professional board and the Dental Therapy, Oral Hygiene and Dental Assisting professional board,
- three professional bodies: the South African Dental Association (SADA), the Oral Hygiene Association of South Africa (OHASA) and the South African Dental Therapy Association (SADTA) as well as,

- four higher education institutions: the University of Pretoria, the University of the Western Cape, Sefako Makgatho University, the University of KwaZulu Natal, and the Committee of Dental Deans.

The request for these documents included government policies, emails about jurisdiction, and reports or correspondence from the above institutions.

Archived and current legislated policies and procedures were sourced from the HPCSA website, while those which were not available were provided by the Medical and Dental Professional Board and the Dental Assisting, Dental Therapy, and Oral Hygiene Professional Board. Two professional bodies namely, the Oral Hygiene Association of South Africa (OHASA) and the South African Dental Therapy Association (SADTA) provided documentation, while the South African Dental Association (SADA) opted to withdraw from providing such due to the risk of breaking collegial ties with the other two professions.

The researcher analysed all the received documents to assess the additional scope of practice changes that have been instituted over time for the three dental occupations until 2018. This process focused on changes to the policy concerning regulations to practice for each occupation (which include autonomy versus supervision); the number, types, and level of complexity of procedures and their implications for referral, and contestations arising from policy changes. The findings of the document analysis (see Chapter 2) gave the researcher a better understanding of the dental sector and the information was used to inform the interview schedules.

5.2.1.2 Data collection method 2: Interviews

The second method of data collection included semi-structured interviews. The researcher recruited educators by sending individual emails to all lecturers teaching in the oral hygiene and dental therapy programs. Professional boards and associations were emailed, and telephonic requests were made but there were no responses. More than one hundred emails or LinkedIn profile requests were sent to practitioners to recruit individuals to participate in the study. The interviews were between 30 to 60 minutes and were initially

undertaken face-to-face at the interviewees' place of preference, and later it was done online via Teams because of COVID-19.

The sourcing of research participants was challenging as dental professionals were unwilling to divulge their opinions regarding professionalisation. The sampling was therefore purposive and the snowballing technique was used to increase the participation of the different stakeholders in the study. The selection criteria for the inclusion of interviewees were as follows:

- Professional association members, current or recent past presidents of the association, a branch chairperson, or an executive member.
- Regulatory board members from HPCSA boards. Selection criteria included the past or present board chairperson executive member.
- Lecturers from different universities. The selection criteria included lecturers involved with the teaching and curriculum development of each of the occupations.
- Dentists working in private practice with a minimum of five years experience, of which at least two are working alongside a hygienist or therapist and two dentists who have never worked with a mid-level dental professional.
- Oral hygienists, some qualified with a bachelor's degree and others qualified with a diploma, some that completed supervision, some should be working independently and some currently working under supervision.
- Dental therapists, with two to five years of experience, of which at least two should be working independently and two currently working under supervision.

A summary of the research participants that were interviewed is outlined in Table 12 below. This includes different professional groups from the three dental occupations involved at various levels in either education and training or practice.

Table 12 Interview participants' profiles

Participant groups	# of Participants	Gender	Age (approx.)	Professional experience	Qualifications
Dentist practitioner (DENTPrac)	5	Male (5)	Average age 51 years, ranging from 36 – 60 years	Ranging from 12 - 35 years, (2 group practice and 3 individual practice)	BDS (5)
Dentist lecturer (DENTLect)	4	Male (4)	Average age 50 years, ranging from 36 – 68 years	Ranging from 15 - 40 years,	BDS (4)
Dental Therapy practitioner (DTPrac)	5	Male (1) Female (4)	Average age 44 years, ranging from 34 – 55 years	Ranging from 12 - 35 years, (3 group practice and 2 individual practice)	BDT (5)
Dental Therapy lecturer (DTLect)	3	Female (3)	Average age 48 years, ranging from 45 – 55 years	Ranging from 20 - 35 years	BDT (3) PhD (1), Masters (2)
Oral Hygiene practitioner (OHPrac)	8	Female (8)	Average age 44 years, ranging from 25 – 60 years	Ranging from 5 - 35 years, (3 Supervision, 5 IPP)	Dipl OH (4) Degree OH (4)
Oral Hygiene lecturer (OHLect)	6	Female (6)	Average age 48 years, ranging from 36 – 62 years	Ranging from 15 - 35 years	Dip OH (2), Masters (3) PhD (1)
Professional association	1	Female (1)	Age 58 years	35 years	OH Diploma (1),
Regulating body (PBD)	3	Male (1) Female (2)	Average age 56 years, ranging from 50 – 65 years	Ranging from 25 - 40 years	BDS (1), BOH (1), BDT (1)
Total	**35**	**M (11) F(24)**			

Table 12 shows the different categories of the three dental occupations that were interviewed. These categories included 18 practitioners, 13 lecturers, 1 professional association member, and 3 regulatory body members. The interviewees represented the dental profession and included a combination of all categories from each occupation as follows;

1. The professional association executive members were selected based on their understanding of educational planning for each occupation. There was an option for the associations to nominate the most relevant members based on the scope of this research project and their availability to participate. Only one representing oral hygienists was interviewed, with SADA and SADTA stating that they were not available.
2. The HPCSA board members were selected from each professional board, namely the Medical and Dental Board and the Dental Therapy, Oral Hygiene and Dental Assisting Board. Three professional/regulatory board members were interviewed from each occupation.

3. The lecturers or academics come from different universities and are involved with curriculum planning for dental occupations. 6 oral hygiene lecturers, 4 dentistry lecturers and 3 dental therapy lecturers were interviewed.
4. Practitioners from each of the three occupations were randomly selected, these practitioners were from either supervised or autonomous private practice based in South Africa, but mainly around the Gauteng province. 8 oral hygiene practitioners, 5 dentists and 5 dental therapists were interviewed.

The four datasets of interviews informing the study which were voice-recorded were then transcribed using Otter.ai. The 35 recorded interview sessions equated to 176,787 words in the transcripts. Upon a review of the voice recordings and transcripts, a reduction and elimination process ensued on aspects that were not pertinent to the analysis These included introductions, the explanation of the study, and any personal discussions. This created more focused and refined transcripts, producing a reduced dataset of approximately 150,000 words which formed the basis of the analysis.

Interview schedules were developed for different stakeholders to provide a semi-structured approach when asking questions. A description of the questions is provided below. The questions in the interview schedules were based on the literature review chapters 2 – 4 and were aligned with the research goals and questions. The interview schedules were broadly related to; judgement, professional relations, professionalisation, training, and work challenges.

The first set of interviews was conducted with members of professional associations. Examples of questions that these participants were asked included issues of their members' professional identities and levels of recognition they receive from the other occupations in dentistry. Further, they were asked about any contestations that have arisen over their scope or their competence to practice. They were also asked about disputes regarding independent practice and whether their members are adequately prepared for such. These interviews assisted in answering the research questions related to understanding work

relations between the three dental occupations; and how dental professionals articulate their professional advancement.

The second set of interviews was conducted with three members from the HPCSA boards. Examples of questions that these participants were asked included their perceptions of the matters contestation of professional scope and autonomy to practice, how preparation to practice has been observed through qualification accreditation, and how the professional boards perceive and deal with problems related to training (found in the policy document analysis). These interviews assisted in answering the research questions related to South African policy amendments and how it has influenced work practices and the knowledge in the curricula of dental occupations regarding common procedures.

The third set of interviews was conducted with lecturers from different universities offering the three qualifications. Examples of questions that these participants were asked included what the lecturers' perceptions of autonomy and scope of practice are, how they perceived the occupational roles and the inter-relations between the three occupations, what they believe is the most important knowledge underpinning the curriculum and how this prepares the three occupations for decision-making situations which arise in the common procedures selected for analysis. These interviews assisted in answering the research questions related to South African policy amendments and how it has influenced work practices and occupational roles; and how knowledge of the curricula of oral health occupations prepares professionals for decision-making.

The fourth set of interviews was undertaken with a selection of practitioners from each of the three dental occupations. These interviews focused on practitioners' perceptions of their role in the workplace, their opinions of their training, inter-relations with the other two occupations and contestations they may have experienced or observed.

I experienced feelings of ambivalence about the questions I was asking the interviewees and how they would respond to these questions. I imagined that they would not answer truthfully, because I was from within the dental profession. I also had difficulty coming to terms with responses from some oral hygienists, because it was not aligned with what I was

expecting. Finding out that hygienists were not feeling ready for the changes in scope and autonomy surprised me because of my passion for the oral hygiene profession and the advancement of hygienists in South Africa and globally.

5.2.1.3 Data collection method 3: Curriculum Analysis

The third method of data collection included an analysis of the curriculum content, here the intended curriculum was examined to assess each occupation's most valued knowledge types. The curriculum documents examined included rule books, course outlines, and lecture notes from four universities. This investigation of the curriculum assisted in establishing the correlations between specialised knowledge and the advancement of the three occupations.

Specifically, the curriculum analysis explored and compared the knowledge required of dentists, therapists, and hygienists. Two types of analyses were undertaken.

- Differences in foundational knowledge in the courses across the mid-level dental occupations. Here the curricula for the first two years from three universities were analysed to assess the focus on the following knowledge types; hard-pure, hard-applied, soft-pure/applied, clinical applied, and generic knowledge (Vergotine, 2015).
- Modules relevant to these common procedures were examined to show variances and similarities in preparing the three occupations to exercise the common procedures, local anaesthesia was used as an example. The content for the local anaesthesia procedure was collected and analysed from dentistry, dental therapy, and oral hygiene curricula.

The analysis of the curricula attempted to identify the systematic bodies of knowledge, and variances in specialised knowledge in the intended curriculum of these three dental occupations broadly, and hone in on the specific knowledge used for decision-making for common procedures.

5.3 Data Analysis Process

This section depicts the analysis process that was used to examine the data. It elucidates how the data sets were translated into concepts and themes, using concepts from the conceptual framework. Using an interpretivist approach assumes methods that are open to refinement that can illuminate how subjects perceive reality; it does not presume a generalizable truth about reality (Chesebro & Borisoff, 2007, p. 11). The aim of analysing the data was to identify the meanings people conveyed as they interacted with the researcher.

5.3.1 Data Analysis Methodology

The data analysis included three sets of analyses. These were document analyses, analyses of interviews using grounded theory methodology, in particular the Gioia method, and curriculum analyses which are described below.

5.3.1.1 Document analysis

In the document analysis, I collated documents and analyzed them to gauge the extent to which daily work practices for dental occupations are legalized through government regulation of scope and autonomy to practice. These regulations are subject to interpretation by professional associations, education and training institutions and individual practitioners from different dental occupations. Thus, it is essential to understand the official scope of practice for each occupation.

The analysis of the documents gauged the changes in the scope of practice of the three occupations over time, to determine whether there might be grounds for contestations in the dental profession. Firstly, government gazettes were summarized, illuminating changes to the scope and autonomy of practice for mid-level dental professionals. The relevant policy documents for each occupation were outlined, with changes that have occurred over the past twelve to fifteen years relating to the scope of practice and independent practice. Changes for each occupation were outlined concerning their regulations to practice; number, types, and level of complexity of procedures; supervision vs. autonomy; prescription and referral. Secondly, problems relating to the specified common scope of practice, as indicated in Table 1, specifically local anaesthesia, diagnosis-making, and

restorations (henceforth the 'common procedures'), were identified. These three procedures were selected as in some of the correspondence they appeared to be most contested by dentists and have variances in remuneration for the three occupations. Each document was examined and the outcome relating to the problem for each procedure was highlighted, this data provided insight for the subsequent data sets. Thirdly, policy changes stimulated questions about the work and training of mid-level occupations, which were incorporated into the interview schedules.

5.3.1.2 Analysis of interviews

The Gioia technique based on authors Gioia, Corley, Hamilton and Aimee (2013) is used as the analysis method in this study. These authors point out that this technique will satisfy the qualitative rigour normally associated with qualitative interpretive research (p.15) because of its systematic process of exploring the data, seen illustrated in Figure 9 below. The technique is presented as a process flow that allows for the systematic organisation of raw data while preserving its richness and validity.

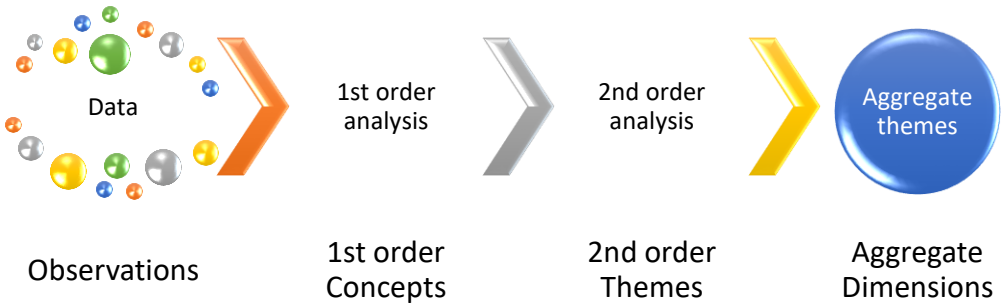


Figure 9 High-Level Gioia grounded theory methodological data analysis process

According to Magnani and Gioia (2022), this methodology provides:

> greater rigor, because it employs a more systematic research approach. This involves developing data analysis through three key stages: a) the creation of analytic codes and categories, assembled into a data structure containing 1st-order (informant centered) codes and 2nd order (theory centered) themes and aggregate dimensions; b) the development of a grounded theoretical model, via constant comparison of data over time and across informants and; c) the presentation of the study's findings by means of a detailed, data-

> based narrative, usually using the 2nd-order themes and aggregated dimensions, with frequent reference to informants' 1st-order quotations (Magnani & Gioia, 2022, p. 2).

To describe the systematic process illustrated above, earlier studies by Gioia and Chittipeddi (1991) highlight that after the data collection phase, the data is written down as observations. Such data could be primary data (e.g. interview transcripts and the ethnographer's diary, including personal observations) or secondary data (e.g. internal documents and records). An initial coding or first-order analysis of the data/observations is undertaken which preserves the integrity of the participant/s phrases (i.e., an analysis using informant-centric terms and codes) (Gioia et al., 2013). This gives rise to 1st order concepts which represent the participant/s actual words. The authors draw on the work of Van Maanen (1979), who introduces a second-order analysis. (i.e., one using researcher-centric concepts, themes, and dimensions) (ibid), thereby allowing the researcher to construct themes from the 1st-order concepts. According to Gioia and Chittipeddi (1991), the 2nd-order analysis is aimed at discerning possible underlying dimensions or patterns in the data and 1st-order concepts; it attends to the sequencing of activities and the structure of the experiences and interpretations of the informants (1991, p. 442). A further analysis brings together 2nd order themes which are then condensed into higher-order/overarching aggregate dimensions. Gioia et al (2013) highlight that when outputs from these analyses are considered collectively, it provides a logical and sequential process to categorize the emergence of observations from the data. The process described above includes one data set. In this study, the Gioia technique was used multiple times because of the multiple data sets.

The interviews provided a rich context to what occurs in the workplace and in training institutions, which offered crucial information about professional relations and occupational advancement. The interpretivist approach indicates that the researchers' interactions with subjects contribute to emerging concepts and categories (Chesebro & Borisoff, 2007, p. 11). The researcher functions as a participant as well as an observer. The data collected are co-constructed by the researchers and subjects studied. Outlining the Gioia technique more practically, I now move to describe how I analysed the data from this study using the

datasets from the interviews. This technique was used in an iterative process until a point of saturation.

The interview schedules comprised five headings which were informed by the literature. In total, one thousand nine hundred twenty-eight (1928) observations were identified from the interview transcripts. Table 13 displays the overall observations, which were found under the headings from the literature as follows; 288 observations were about *judgement*, 348 were about *professional relations*, 508 were about *professionalisation*, 472 were about *training*, and 312 observations were about *work challenges*. Two sets of analyses were performed which are described below.

The first round of Analysis - The first round of 1st-order and 2nd-order analyses were conducted as follows: The 1st-order analysis classified several groups of observations under the literature headings. For the sake of brevity, two examples illustrate the different groups of 1st-order concepts. Under the heading 'judgement' there were seven groups of 1st-order concepts. Under the heading 'workplace' challenges there were six groups of 1st-order concepts. The different groups of 1st-order concepts represent the participants' actual words.

Table 13 Data structure for first 1st and 2nd order analysis using the Gioia method

Observations - 1928	First – 1st order concepts	First – 2nd order themes
JUDGEMENT - 288	28	Benefits of IPP
	40	Conditions to practice
	35	Control over procedures
	63	Decision-making
	23	Difficult working conditions
	63	Performing scope
	36	Supervision
PROFESSIONAL RELATIONS - 348	39	Awareness of scope
	12	Convenient relationship
	33	Hierarchy in workplace
	26	Lack of knowledge
	72	Professional Recognition
	40	Public awareness
	52	Referral
	13	Unappreciated worker
	61	Working relations

Observations - 1928	First – 1st order concepts	First – 2nd order themes
PROFESSIONALISATION - 508	59	Aspire to professionalise
	11	Blurring of lines
	59	Confidence to perform
	14	Dentist role
	13	Dual training
	29	Government role
	56	Hygienist role
	12	Intimidated by scope
	28	Overstepping scope
	38	Professional role
	76	Protecting profession
	72	Query scope
	11	Taking on scope
	30	Therapist role
TRAINING - 472	15	Accreditation
	35	BDS and BOH
	39	Curriculum design
	14	Diploma vs degree
	13	Disrespect in training
	10	Eagerness to teach MLD
	72	Implementation of scope in curriculum
	27	Integration of student learning
	52	Knowledge is taught
	20	Learning in practice
	17	Misinterpretation of scope in curriculum
	23	Pathways
	72	Teaching of procedures
	20	Theory vs Practical
	43	Training standards
WORKPLACE CHALLENGES - 312	76	Fees for different codes
	20	Income in supervised practice
	50	Medical aids
	39	Practice options
	78	Remuneration
	49	Taking away work

After this, a 2nd-order analysis was done where I coded the observations from the 1st-order concepts into several 2nd-order themes, these represented my interpretation of the observations. An example of the first round of 2nd-order themes from workplace changes included: Fees for different codes, Income in supervised practice, Medical aids, Practice options, Remuneration, and Taking away work. Table 13 illustrates the number of observations, concepts, and themes in the first round of my analysis. As the data sets were too large, aggregate dimensions were not established. Instead, a second round of analysis was undertaken.

Second round of Analysis - The first groups of 1st-order concepts were analysed again, across the different headings to see which observations belonged together. This analysis led to combining or eliminating observations which culminated in a new data structure that became the second round of 1st order and 2nd order analysis as seen in Table 14 below.

Table 14 Data structure for the second 1st and 2nd order analysis using the Gioia method

Second – 1st order concepts	Second – 2nd order themes	Aggregate dimensions
I don't think the public is aware – 21	Awareness of dental professionals	Relations in the dental profession
I don't know a lot about their scope – 11		
One university did not even know that there was a new scope - 10		
Distinctiveness of professional roles – 38	Role of dental professionals	
Dentist is superior and then comes a therapist and then the hygienists – 22		
They expand, it eats into our scope– 40		
I don't see anyone unless they've seen the hygienist – 34	Professional Recognition	
Doesn't make sense for hygienists and therapists to treatment plan - 38		
They were never integrated with us – 23	Relations in dental schools	Challenges in Education and training
Implicit hierarchy that no you don't care for us – 15		
Advancement within dental occupations - 23		
We're not taught it - 21	Manipulating scope during training	
Dentists do not trust oral hygiene lecturers' knowledge – 21		
Interpretation of the new scope - 22		
New scope is being implemented slowly or not at all - 39		
With a degree, we focus more on giving them more in-depth knowledge – 18	Dental curricula and knowledge Working conditions	
I should've known more about anaesthetics… but I didn't get it – 45		
I have to make the decision myself – 26		
first and second year. It's similar. I think it's the third year that's different - 32		
Still working for a dentist in private practice – 20	Working conditions	Work practices and responses to policy
Referral is somewhat contentious – 18		
Government cannot afford to have dentists everywhere – 14		
Supervised practice is for the practitioner to gain enough experience – 22		
I open my practice and be my own boss – 35		
There was this exploitation of hygienists - 41 quotes	Performing work procedures	
The main procedures that I do is just your general oral hygiene – 58		
They are seeing a red sign which says competition – 55	Competing for work	
They all flocking to work in urban areas – 46		
Standalone hygienists… how many are doing well - 26		
Lesser skill you have, the less you can charge – 31	Remuneration for work	
Medical aids quite often don't pay – 22		
Working for a dentist and making him money it's okay – 31		
Hygienist is the cash cow of the practice – 11		

During this second analysis, observations were rearranged several times to reduce the 2nd-order themes and to come up with the final three aggregate dimensions, Relations in the dental profession, Challenges in Education and training, and Work practices and responses to policy

5.3.1.3 Analysis of Curriculum documents

The curriculum analysis included a review of mid-level dental qualifications from three universities. All first and second-year courses were examined to establish the focus of the different knowledge types in each curriculum. This was to establish knowledge types such as hard-pure (e.g. Chemistry), hard-applied (e.g. Radiology), soft-pure/applied (e.g. Sociology), clinical applied (e.g. Clinical Practice), and generic (e.g. Communication) in the first two years of mid-level dental occupation training. A further analysis was conducted on one of

the contested procedures namely local anaesthesia. The knowledge underlying the procedure of local anaesthesia was compared across the three qualifications (dentistry, oral hygiene and dental therapy), where the selection, sequencing, and pacing were examined. The specific criteria used for the comparison included the amount of time allocated to local anaesthesia and the actual content that the different courses included. This was to get a better understanding of the depth of knowledge for the different occupations to establish the differences and commonalities in preparation for the practice of local anaesthesia.

5.3.1.4 Trustworthiness of the research through reliability and validity

For qualitative research to be trustworthy it has to be all-inclusive, transparent, and based on evidence throughout the different stages of the research (e.g., its' rationale, theoretical underpinnings, methodological tools and processes, research findings and analysis, and conclusions). A qualitative research study needs to clarify issues of reliability; and internal and external validity as these have become increasingly important to ensure objectivity in qualitative research (Meijer et al., 2002). During the research process, I envisaged addressing reliability and validity and will describe the issues which arose directly in this section.

Reliability is established and guaranteed through consistent, dependable, and systematic data collection and analysis processes which are followed in a study (Cohen et al., 2017). I ensured consistency and dependability in the study through the sample of dental professionals that I selected from each occupation, how I conducted the semi-structured interviews by asking questions in the same sequence and format. As the interviews were semi-structured, interview schedules were developed to assist the researcher during the interviews. The interview schedules were developed early during the research process and some questions may appear to be leading the interviewees. However, the questions were not used verbatim as can be seen from the interview transcripts e.g., in question 4 of the interview schedule the professional board members were supposed to be asked "It appears that there are contestations over changes in the scope of midlevel dental occupations. *Tell me about such queries/contestations that you are aware of? Which changes in scope were most queried? Why have these been queried?*", this question was

adapted in the interview as can be seen in one of the interview transcripts as follows “And in terms of how, perhaps your perception of all three professions? And how the changes in scope may have affected interrelations between the different occupations. From the board’s perspective or from your faculty’s perspective or from what you see is happening in practice here”.

Another example is seen in question 9 where the interview schedule is written as follows “To what extent has gender/race shaped midlevel dental occupations’ work and identity? *How has this shaped the development of these occupations?*” this question was asked differently in the interview “just coming to a little bit about practice then. In terms of race and gender, I mean, how has that changed for hygienists and dentists and maybe even therapists over time?”. Reliability was also ensured by the systematic analysis used in the Gioia method to analyse and code the data (as described in the previous sections 5.2.1 and 5.3.1).

The validity of the research process involves the careful interpretation of observations: this means that the researcher must represent the participants’ responses for what it is. In this study, the inclusion of validity was confirmed through the accurate reflections of the dental professionals’ experiences and perspectives and not my perceptions (Cohen et al., 2017). The trustworthiness of qualitative data can be assumed from the description of the feelings and interpretations of what participants reveal both explicitly as well as tacitly (Chesebro & Borisoff, 2007, p. 11). These authors note that the data may remain at a more intuitive and impressionistic level. As the primary researcher, I ensured that the observations/quotes by the interviewees were portrayed, and their feelings were inferred from their tone and the emphasis they placed on certain responses. In several interviews, I detected that participants had different knowledge positions. I focused on keeping my interpretations neutral and being aware of self-reflexivity regarding the perceptions of work practices and education, and how they influence the advancement of an occupation such as oral hygiene. Another method used to control my internal biases was that I used one of the participants to review some of the key findings, and to find out whether I was representing their perceptions correctly in my analysis and discussion. I sought internal validity by using the

triangulation of data sources and methods to confirm findings. This was done by examining the responses of the different participants, and analysing how dental professionals' perceptions challenged my own interpretation

Using an interpretive approach in this study, the context in which data was gathered was a key consideration in confirming reliability and validity. During the research data collection process, validity was questioned. In particular, whether the perspectives of different dental professionals would reveal their experiences and opinions about professionalisation among dental occupations. External validity can be ensured as I provide enough information on the context of the dental profession and the different occupations and the hierarchy and competition between them. This will allow other researchers to determine whether particular findings might apply to their context or not and whether the findings of this study can be applied to theirs.

5.3.2 Linking the conceptual to the discussion

By linking the conceptual framework in Chapter 4 to the discussion in Chapter 9, I highlight the concepts which correspond with the discussion of the findings in this study—*division of labour*, *autonomy*, *specialised knowledge*, *judgement, and jurisdiction*. The concepts can be seen in Table 15 below, which provides a depiction of how each concept within the conceptual model on page 117 is linked to the criteria for the discussion of this study.

Table 15 Links between concepts and methodologies

Concepts ⇓	Terms from the conceptual framework	Research question	The empirical object of the study	Criteria followed during the discussion
Division of labour	Occupations, specialisations, hierarchy	1, 2	Policy documents and reports; participants' perceptions	Scope changes and contestations
Autonomy	Authority over procedures, power relations	1, 2	Policy documents and reports; participants' perceptions	Rules and acceptance of the independent practice, job satisfaction and remuneration
Jurisdiction	Jurisdictional settings and settlements	3,4	Participants' perceptions; curriculum documents	Areas where jurisdiction is enacted and the control occupations have over their work
Judgement	Discretionary specialisation, diagnosis, inference, treatment	2,3,4	Participants' perceptions; curriculum documents	Decision-making for common procedures using tools
Specialised knowledge	Formal knowledge, Knowledge distinctions, intended curriculum	4	Participants' perceptions; curriculum documents, rulebooks and course outlines	Types of knowledge valued, time spent on specialised knowledge, and sequencing of knowledge. Theoretical and practical knowledge considered in preparation of decision-making for common procedures

Table 15, for example, shows how the concept of 'specialised knowledge' connects specific terms mentioned in the conceptual framework such as 'formal knowledge', and 'knowledge distinctions'; these concepts were then related to the research question it addresses Q3 and Q4; it describes the empirical object to be investigated such as perceptions or curriculum object, finally it provides criteria which ought to be followed when collecting data on empirical objects, such as the types of knowledge valued and the time spent on specialised knowledge.

5.5 Ethical Considerations

This research project involved contact with human beings which required careful ethical deliberation. The research participants were respected, and their confidentiality and anonymity were protected. Participants were requested to complete and sign the consent form which was hand-delivered on the day of the interview. In terms of anonymity, the participants have been divided into different categories, lecturers, professional body

members, and practitioners. They are further split into dentists, therapists and hygienists. The professional bodies are not stated, and the identification of individuals is not clear from the statements will not compromise anonymity. Participants were informed that they would not be referred to by name or by their title. A pseudonym was used during the data collection such as Professional body Dentist 1/2/3 (e.g. PBD1), Oral Hygiene Lecturer 1/2/3 (e.g. OHL1). The participants were also informed that; the use of a pseudonym may not allow complete confidentiality of their responses as they may provide responses that link directly to their professional affiliation. While every effort was made to ensure confidentiality, practitioners, lecturers, professional bodies, and board members interviewed were informed through an information letter before commencing the interview that complete confidentiality cannot be guaranteed. Individual interviewees were further informed that the interviews conducted with the researcher would be transcribed and that the data from the individual interviews would not be distributed to other participants and would be stored safely.

Informed consent was requested from each participant to ensure that they voluntarily contributed to the study, by considering the aims and objectives of the study. Letters of information were given to all participants from the professional bodies, boards, universities, and private practitioners about the purpose of this research. The letter provided information which clarified my role in this specific research as a postgraduate PhD student. Further, I indicated that may refuse to participate at any time and lastly, that if they agreed to participate every effort will be made to maintain their anonymity. I also provided the contact details of my supervisors, if they wished to clarify the scope of the research, my role in the research and for the surety that they could refuse participation. Furthermore, at the time of conducting the interviews, I revised the purpose of the study and reiterated my role as a student conducting research at the University of Witwatersrand. The information letter included the title of the research and outlined the objective of the research which was to establish whether the changing regulations to the scope and autonomy of oral hygienists in South Africa influenced their daily practices and training. The universities were informed about how they were selected, which took into consideration that they offer at least two of the three qualifications to be examined. Participants were informed that they were selected

based on their knowledge and experience in their occupation and the training in the three dental occupations. I informed the institutions and participants that the research would be shared with them after completion. In addition, factors related to the time required from the organisations and participants as well as financial considerations were provided. Careful preparation of briefing procedures was completed by the researcher with all participants to describe the nature of the study, comprising all necessary details for participant consent.

The reliability of the research was guaranteed through systematic, impartial, and independent data collection and storage. Issues of mutual exchange during data collection were considered in the relationship between the researcher and participants. Thus, it was imperative to explain the researchers' beliefs, the dilemmas that emerged and the decision-making processes throughout data collection. All data, including the reports, legal and policy documents, transcripts, audiotapes, completed curriculum analyses and the research reports in both hard copy as well were scanned and the e-versions are being stored safely. The data and records are saved onto a memory stick and hard copies are collated in labelled folders. The data will be stored securely in a locked cupboard in my office for 3-5 years. After this period the data will be destroyed.

Ethical approval was granted on 24 October 2017 by the Human Research Ethics Committee in the School of Education of the University of the Witwatersrand, Johannesburg, Protocol Number: 2017ECE035D.

CHAPTER 6

FINDINGS: RELATIONS IN THE DENTAL PROFESSION

6. Synopsis of Chapter 6

In this chapter, the perceptions of the relations between dental occupations in South Africa are analysed and discussed. The findings are in line with the first sub-question: How do regulatory changes for oral hygienists influence relations within the dental profession? The findings thus depict the perceptions of participants regarding inter-professional and intra-professional relations. Further, these findings highlight how professional relations shape the professional advancement of oral hygienists.

The data illuminate the relations between oral hygienists, dentists, and dental therapists. The chapter describes the analyses of the intra-occupational tensions that have arisen due to the changes in hygienists' scope of practice. Figure 10 below are three themes emanating from relations in the dental profession discussed in this chapter. The first theme centers broadly around how the three groups of participants (henceforth participants) perceive awareness of each other's scope within the dental profession. The second theme relates to how they perceive each other's roles, highlighting the hierarchy that professional roles create and how the blurring of roles is increasing within the profession. The third theme deals with professional recognition, particularly of oral hygienists in South Africa and emphasises the discontent hygienists have concerning the recognition their occupation receives.

In the sections to follow, the findings are presented in the three themes as outlined in *figure 10* below and each theme is further broken down into several subthemes as these were captured in the analysis of the data. To explain the perceptions of dental occupations evident within the dental profession the data came from 216 observations/quotations, represented in three themes, across eight subthemes.

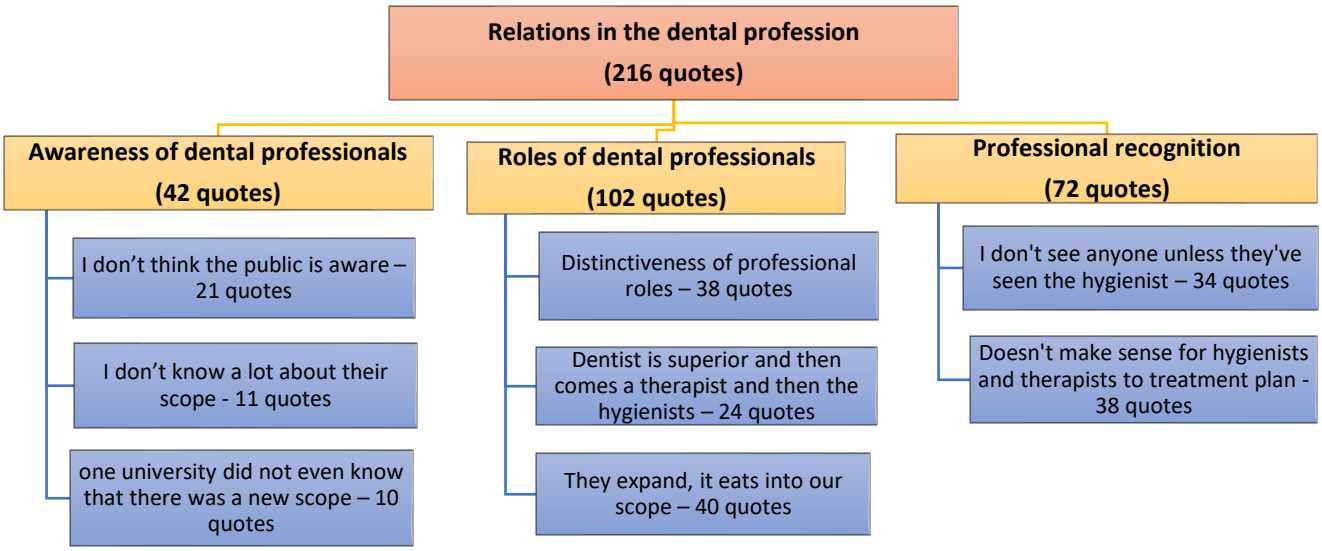


Figure 10 Themes and subthemes for the Relations in the dental profession

This chapter portrays the relationships within the dental profession and describes how these relations impact the professional boundaries of the three dental occupations. It shows how specifically oral hygienists respond to changes in their scope and autonomy. The main argument of the chapter is that even though relations between the three dental groups are said to be good, it appears that participants perceive changes in the division of labour, role/scope, and hierarchy as direct threats to their occupational boundaries. The portrayal of the data provides clear examples of boundary crossing and boundary keeping which represents critiques, fears, and contestations by the participants from the various dental groups.

6.1 Awareness of Dental Professionals

This section includes the public's awareness of the three dental groups, and how aware participants of the three occupations are of each other's scope in the workplace as well as at training institutions. The main claim of this section is that there are low levels of awareness of mid-level dental occupations by the public as well as by professionals from the three dental groups. After coding the transcripts, forty-two (42) observations were made relating to the aggregate dimension of awareness of dental professionals. These observations came

from twenty (20) interviewees, where a representation of the number of observations for the different interviewees can be seen in Figure 11

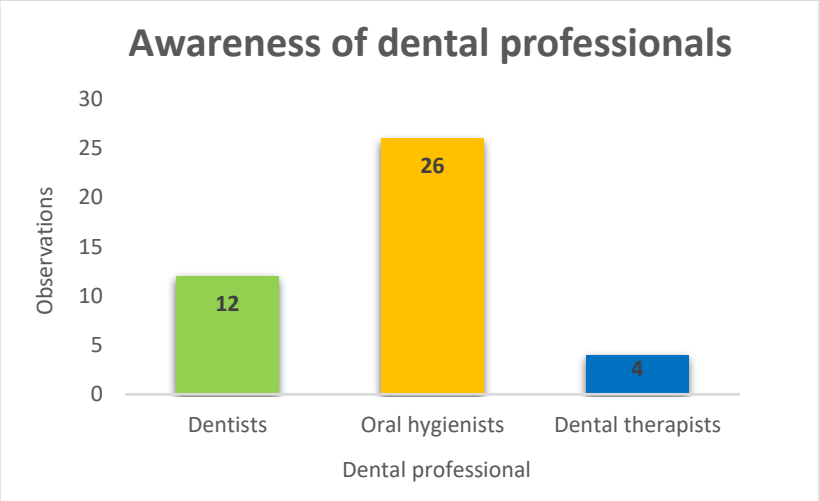


Figure 11 Observations about awareness of dental professionals

The above figure illustrates the number of observations taken from each interviewee about the awareness of scope among dental occupations. Of the forty-two (42) observations, twenty-six (26) were from hygienists, twelve (12) from dentists, and four (4) from therapists. The highest number of observations were drawn from hygienists. What is noticeable about this is that hygienists expressed much about the lack of public and professional awareness there is of their occupation.

Table 6.1 in Annexure E illustrates the data structure, which indicates how the observations were analysed. A first-order analysis of each observation was carried out, which brought to light first-order concepts. These first-order concepts were then grouped through a second-order analysis, and three second-order themes were identified. The second-order themes were then combined into the aggregate dimension of awareness of scope. The three sub-themes discussed below are:

- I don't think the public is aware – 21 quotes
- I don't know a lot about their scope – 11 quotes
- One university did not even know that there was a new scope – 10 quotes

6.1.1 I don’t think the public is aware

From the perceptions held by participants, who are cited verbatim throughout, they confirm that it is difficult for the public to distinguish between the three dental occupations, as a hygienist remarked, “I don’t think the public is aware of the three professions” (PBD2) and a therapist noted, “the publics not educated that these three cadres have workers in the oral health profession.” (DTL2). Lecturers specifically noted, that there is low public awareness of oral hygiene and dental therapy occupations: “I doubt if the public even knows what a therapist is... don't think there's enough promotion of our professions as such” (OHL1) and “the public is not aware of the scope of hygienists” (DL1). The participants’ view of public awareness is that dentists are seen to provide dental care as a hygienist explains, “patients are only aware of, in the dental team… you have the dentist” (OHL4). A dentist remarks that the public views dentists as the preferred provider of dental care “the patient wants to see the dentist. They want the dentist to do the cleaning for them” (DP1), and another dentist indicates that “patients have questioned the hygienist to say why are you doing it and not doctor” (DP2). This level of public support for dentists places them at the highest in the hierarchy of care.

The therapists' and hygienists' perceptions are that patients are confused about who they are and the work that they do and often regard them as dentists, as a therapist describes: “they won’t even realise who is doing what” (DTL1). A hygienist reckons “a lot of patients walk into the surgery and then they say doctor to me… and then I say ‘I’m an oral hygienist’…” (PBD2). The dentists are aggrieved mainly by therapists misrepresenting themselves as dentists. The dentists believe that the therapists are abusing the situation for their benefit and not rectifying the confusion, as seen from a dentist’s comment,

> One of the things is that the public does not know the difference… they go into a Dental Therapy practice, and they will call the therapist “doctor”. And then when you see them (the patient) and you ask them who was the dentist, they would tell you ‘Dr. So-and-so’, yet you know that is not a doctor. We also know that the council knows about such things, probably they are doing something about it. I think that those things are what is making the fire. (DL3)

This statement highlights that the lack of public awareness of dental professionals is creating a rift between dentists and dental therapists.

The hygienists emphasise that members of the public are not aware of the changes to legislation and do not know about the existence of the occupation of 'Oral Hygiene', as a lecturer points out "ask a few people around… what is an oral hygienist.... they will say 'I have got no idea'" (OHL1). The public is also unclear about the nature of the work or scope of hygienists, where another oral hygiene practitioner notes "I say that I'm an oral hygienist and then they look all puzzled. So, so what does that mean? can't you do the filling?" (OHP8) and this is confirmed by another hygienist on the professional board "They may know the dentist, but the hygienist and the expanded functions, I don't think that's been publicised" (PBD2). Another concern for the oral hygiene occupation is that when patients encounter hygienists, they are often seen in a subordinate position to dentists as a dentist lecturer states, "people just saw hygienists as an assistant to the dentist" (DL1). This emphasises that dentists are cognisant of the fact that the public's view of oral hygienists is low.

The perceived lack of awareness by the public suggests a lack of cohesion within the dental profession. Despite this, there are numerous appeals from the three dental groups for the public to be made more aware of the different occupations and their scope, the statement below by a dental therapy lecturer is a good example of this:

> … we should all start there at that point... Being happy with who we are and promoting us... So, there should safely say in an ad that they are there to tell the public. I also suggested that being there in newspaper articles to help me with an ad is put up by the different organs SADA or HPCSA promoting their profession and telling the public out there what we are and what we do. (DTL2)

The therapist is indicating that limited public awareness of dental therapists and oral hygienists is a concern and that these occupations need to be endorsed by their professional bodies so that the public becomes more aware of them. Further, it highlights who receives endorsement from the public and divulges the most important members of the dental profession.

6.1.2 I don’t know a lot about their scope

In addition to the low degree of public awareness, there is uncertainty about the exact nature of each other’s scope among the three dental groups. An oral hygiene lecturer raises the point that the lack of understanding of each other’s scope of dental professionals influences how they perceive the uniqueness of each occupation’s role: “I’ve noticed is that there is also very little knowledge about the clear distinction between each professional within the three disciplines.” (OHL4). Here, she suggests that within the dental profession, professionals do not realise the importance of each occupation and the key role each of these plays within the dental team.

Several dentists indicate that they have little knowledge about the exact procedures each occupation may perform, as a dentist practitioner notes about hygienists “I don't know the full scope of what they're allowed to do” (DP2). Dentist practitioners show very little interest in oral hygienists’ scope of practice and are generally surprised that the hygienists’ scope has expanded, as a dentist indicates, “I don't even know what changes the Government has brought about” (DP4). This lack of interest and low degree of awareness by dentists may help to explain why dentists are not allowing hygienists to perform the expanded scope in practice and maintain the status quo.

A concern emerging from several hygienists is that dentists do not understand the progress that has taken place in the oral hygiene occupation, nor the expanded scope which now allows hygienists to conduct additional procedures. One oral hygiene lecturer stated: “still some dentists who is not totally informed about our scope of practice” (OHL5), while a practitioner mentioned “I don’t think they really understand fully what we do” (OHP5). This is also evident when this oral hygiene practitioner relayed the surprise of a dentist when noticing that she was able to perform a particular procedure from the 2000 expanded scope: “I offered to inject somebody for him the other day because he was running late and he like, ‘You can do that!?’ (OHP5). The lack of understanding of hygienists’ advancement was further portrayed in the misunderstandings that dentists have of the daily procedures hygienists perform in practice, where a dentist noted: “they're allowed to give infiltration

injections, but that's all I know" (DP3). The statement by this dentist shows that dentists view hygienists as being able to perform basic procedures only (this is because an 'infiltration' is less complex than doing a 'block' in local anaesthesia). The lack of awareness by dentists of the type and complexity of procedures hygienists may perform impacts whether the hygienists perform their full scope. This is because the procedures that form part of the expanded scope will not be referred from dentists to hygienists, which gives dentists control over hygienists' work (as seen in section 7.1.2).

In the case of knowing the scope of dental therapists, the dentists and hygienists are not clear about the scope and the extent to which this differs from hygienists' scope. Hygienists believe that because they are not exposed to working with therapists, they do not need to know their scope as seen in a quote by an oral hygiene lecturer, "I don't know a lot about their scope, I'm not concerned about [it]" (OHL2). An oral hygiene lecturer working closely in a division that has both the dental therapy and oral hygiene curriculum was unaware of the scope for therapists "in terms of Dental Therapy scope the past one and the current one is with the DHET for review, so I'm not aware of what the current scope of dental therapy is" (OHL3).

It appears that there are various aspects of hygienists' and therapists' work that dentists respect, and/or lack of respect for. As seen before, there is a view by hygienists that dentists believe that they do not know how to perform complicated procedures "you're just a hygienist, what do you know" (OHP4), and "a handful of practitioners really accept the hygiene profession. I still sometimes feel that we are looked down upon… you are just a Hygienist" (OHL2). Hygienists think that dentists view them as professionals generally providing poor services, as a hygienist mentioned that it is the "view of a lot of dentists, that you're getting inferior care or inferior treatment" (OHP8). They also indicate that the dentist's portrayal of hygienists' work, has lowered how patients perceive their status, as one lecturer mentioned "an oral hygienist that you must prove yourself to the patients that much more" (OHL4). The hygienists, therefore, assume that their ability to perform procedures must constantly be validated by both dentists and patients.

Even if some hygienists think they are respected by dentists because their scope of practice has widened, other hygienists feel that dentists perceive their status as not having changed. This is seen from the opinion of an oral hygiene lecturer who says, “oral hygienists might feel that... I can do more things, so I've got a better status, but I don't think that dentists believe it” (OHL1). This is further demonstrated by another lecturer who felt that legislative changes would not increase their sense of autonomy: “I don’t necessarily think that the change in scope is bringing more independence” (OHL4). It is vital to note these negative statements originate with oral hygiene lecturers, who are instrumental in promoting the occupation to new trainees.

Such disinterest in the scope of others has an impact on the relationship between the three dental groups, which results in a communication breakdown. There are concerns about which procedures are performed by whom, and the breakdown of patient referrals for focused care. The lack of interest and respect for one another could imply that the three dental groups are merely concerned about advancing themselves and not with complementing one another.

6.1.3 One university did not even know that there was a new scope

The limited awareness dental occupations have of each other’s scope is also experienced in training institutions e.g., an oral hygiene lecturer indicates “therapists, I don't know what they do” (OHL1). The main reason cited for this is that they didn’t work with the other occupation, another oral hygiene lecturer agrees that the separate training within the dental profession contributes to the lack of awareness among the three dental groups and perpetuates the hierarchical system:

> … out there I’m still seeing them working in silos, if we were to break it, we have to start with teaching these three programmes are trained together, and engaging with each other, but there is still that hierarchy, there are still some dentists not acknowledging, they still questioning when a patient comes in she would say that she referred the patient to a dentist for a temporary (restoration) and the dentist was querying ‘why would they be seeing that this is not what they (oral hygienists) can do’. There is still that superior hierarchy amongst them. (OHL3)

Such a lack of integration with other occupations in training institutions is recollected by a hygienist about their training with dentists and therapists, where she notes that they are "never integrated with us at varsity, so they aren't able to know exactly what the difference in scope is" (OHP2).

Despite scope changes for hygienists being in place for several years (first expansion in 2000 and following expansion in 2013), universities were also unaware of some aspects of the regulations for hygienists as a professional board therapist recalls "one university did not even know that there was a new scope" (PBD4). Furthermore, dentists teaching oral hygiene students show very little interest in the scope of hygienists, as a dentist lecturer indicated:" I have a very limited understanding I know some of the expanded functions because I teach some of it, to be honest. I've never really looked at the document to see what the scope is" (DL1). This shows that this dentist lecturer is only concerned about the content to be taught and not how the oral hygiene scope is integrated across the three occupations to complement each other. The oral hygiene lecturers also confirm a lack of awareness by dentists where "still some dentists who are not totally informed about our scope of practice" (OHL5), which highlights hygienists' view that they do not feel like important contributors to the dental team.

One of the highest stakeholder groups in dental education in the country, 'the Committee of Dental Deans' is thought to show very little interest in the oral hygiene curriculum and scope of practice of hygienists, where a hygienist on the board expresses, "the scope of practice did go out to the Deans all the time, what they do with it when it comes to them is questionable" (PBD4). The concern is that at such a level, this could limit awareness within the dental profession regarding how regulations are integrated at universities.

The therapists are more aware of the legislative changes to the scope for the hygienists and appear to embrace these changes. However, they are not exactly clear on what these changes are and how they differ from before, as a dental therapy lecturer described:

> I think the hygienists have been given a lot of things to do, more responsibilities, it is more or less the same [as therapists] maybe it is because the environment is changing,

> […] You know like the advanced handpieces and […] are changing that is what I'm talking about, the procedures are still the same but the equipment is changing. (DTL1)

This shows that therapists may be more concerned about how the expanded scope for hygienists may be impacting their role and scope, yet they are unclear about what the scope is. The dentists and therapists at training institutions are not cognizant of the new scope of work of hygienists. This is important to note as they play a crucial role in the training and development of the dental profession.

6.1.4 Summary of awareness of dental professionals

Section 6.1 highlights that awareness of dental professional scope is a concern for mid-level dental occupations, particularly for oral hygienists. The figure below provides a graphic display of the three themes which emphasise contestations around awareness of dental professionals' scope and role, how they perceive public awareness of the dental profession and professionals' awareness of each other during training.

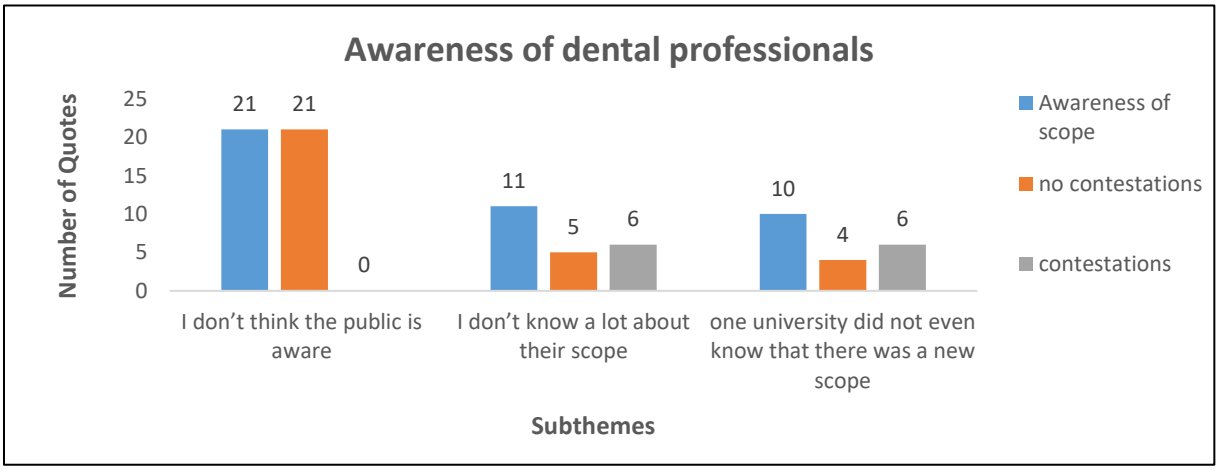


Figure 12 Quotes relating to professional awareness of occupations

The graphs in Figure 12 show the three subthemes under the awareness of the occupational scope and depict quotations that signify where there have been contestations and other quotes which show that there are no contestations around the awareness of dental professionals by participants of the three dental groups.

The first subtheme ‘I don’t think the public is aware’ has twenty-one quotes that reveal that all participants are conscious of and agree on the fact that the public has low awareness of the different occupations in the dental profession. This shows that the participants are concerned that the public is not aware of the scope of the three dental groups (and more specifically, of the scope of mid-level dental professionals). This supports mid-level dental professionals’ concerns that the public has very little knowledge of their existence or their roles in the dental team and that the public perceives dentists as the preferred provider of dental care. It also emphasises that dental professionals concur that there is a problem regarding public awareness of the dental profession. Furthermore, dentists confront the fact that therapists take advantage of the low public awareness of the different occupations and describe their discontent in this regard.

In the graph for the second subtheme, “I don’t know a lot about their scope,” eleven quotes appear. This set of quotes signifies that there is not enough insight within the dental profession into the different scopes of practice of dental therapists and hygienists (and more specifically in the case of hygienists’ expanded scope). Six quotes show contestations that come mainly from hygienists, as they believe it is largely dentists who lack awareness of mid-level dental occupations’ scope. The hygienists contest the fact that dentists do not know the scope of the mid-level dental occupations, which could create conditions where dentists may criticize them for boundary crossing. The lack of awareness of each other’s scope affects how each occupation is perceived and could affect the communication and trust relationships between dentists, therapists, and hygienists. This could lead to each occupation focusing more on their advancement without considering how they ought to be supporting each other in the workplace.

The third subtheme “awareness during training” has ten quotes, of which four display no contestations from lecturers and show lecturers' lack of familiarity with other occupations’ scope. Six quotes refer to hygienists' queries about the lack of awareness of each other’s scope at training institutions. They believe that the lack of awareness may influence curriculum development and how the scope of practice is taught (which will be explained further in Chapter 8). It is important to highlight the lack of awareness in the dental

profession as the three occupations ought to complement one another in the delivery of dental services.

6.2 Perceived Roles of Dental Professionals

In 6.1, the awareness of the three groups is described more broadly, while this section looks more specifically at the roles that each occupation plays within the dental profession. From the analysis of the data on the roles of dental professionals, this theme highlights how members from each occupation perceive themselves and each other's roles and the divisions these roles trigger among the three groups. The main claim of this section is that occupational roles create a hierarchy, with dentists dominating the profession. It also shows that there is a blurring of roles that serves to create interprofessional discord between these occupations.

After coding the transcripts, one hundred and two (102) observations (quotes) were found relating to the aggregate dimension of perceived roles of dental professionals. These observations came from twenty-seven (27) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 13.

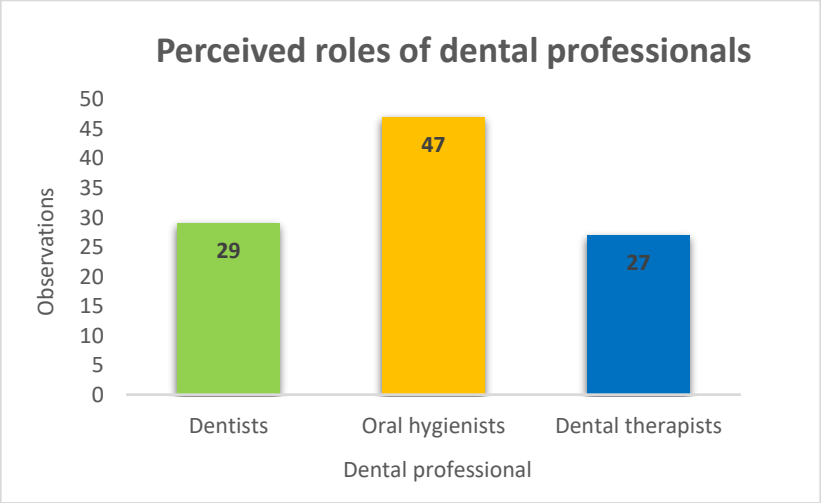


Figure 13 Observations about the perceived roles of dental professionals

Figure 13 illustrates the number of observations taken from each interviewee about the perceived roles of each of the dental occupations. Of the one-hundred-and-two (102), forty-seven (47) observations were from hygienists, twenty-nine (29) from dentists, and twenty-

seven (27) from therapists. This showed that more observations about the roles of dental professionals were made by hygienists.

Table 6.2 in Annexure E illustrates the data structure, which indicates how the observations were analysed. A first-order analysis of each observation was carried out which brings to light first-order concepts. These first-order concepts were then grouped through a second-order analysis and three second-order themes were identified. The second-order themes were then combined into the aggregate dimension of the perceived roles of dental professionals. The three subthemes discussed below are:

- Distinctiveness of professional roles – 38 quotes
- Dentist is superior and then comes a therapist and then the hygienists – 24 quotes
- They expand, it 'eats into' our scope – 40 quotes

6.2.1 Distinctiveness of professional roles

It is important to gain an understanding of how the three dental occupations perceive their roles and to assess how each occupation compares itself to the roles of others. The dentists describe their main role as all-encompassing which covers different areas of dentistry, as one dentist lecturer indicates; "to engage in the technical aspects of treatment… both primary, secondary, and tertiary" (DL2). Moreover, they position themselves as providers of specialised dental care "dental care and in a certain way, a bit specialised" (DP5); this despite there being specialist occupations such as orthodontics, periodontics, etc. which highlights that dentists aspire to broaden their scope too. Most dentist practitioners also view their role broadly, to include more than oral health, as another dentist states, "to ensure the oral and general health of my patients" (DP3). This shows that dentists have high regard for their role as the main contributor to dental service provision and see themselves as providing specialist and holistic care.

Most dental therapists describe their main role as follows; "to alleviate pain and sepsis" (PBD3), where this is achieved mainly through providing "restorative care and exodontia" (DTL3). Therapists are trained to have a preventive role, and some indicate that preventive procedures can be viewed as part of their scope "cleanings, fillings, extractions" (DTP3)

however, preventive procedures are not recognised as their main role. The relief of pain is viewed as the core of the therapist's role, as a professional board member mentioned: "treatment of pain and sepsis through extractions and restorations" (PBD4).

As discussed in the literature review in Chapter 3, the recent regulatory scope of practice changes have made it possible for hygienists to expand their role, by providing mainly preventive procedures including selected basic curative procedures. Nevertheless, oral hygienists believe that their main role has not changed, and strongly identify with primary prevention measures, as an oral hygienist from the professional board explained: "Oral hygienist is still located within that context of prevention and promotion. I do not see it as a move to more curative methods" (PBD4). Whether they work under supervision or remain independent, their focus is on prevention, as seen in a statement by an oral hygiene practitioner "I also went into independent practice because I want to prevent disease" (OHP4) and an oral hygiene lecturer says, "most of the Oral Hygienists I know who is practising independently are extremely focused on prevention"(OHL5). From the oral hygienists' responses, it is evident that they have established themselves in preventing oral diseases and have a high sense of duty toward educating their patients, as assumed from a statement by another oral hygienist; "I talk to my patients a lot with regard to what happens inside their mouths and their conditions and how to prevent disease" (OHP6). This shows that hygienists want to maintain their preventive role and that they identify strongly with being preventive agents.

The perceptions of each occupation about their roles are echoed by what professionals from the different occupations think about each other. The hygienists and therapists concur that dentists have an all-encompassing role in dentistry, whereas, at the professional board level, it is clearly understood that dentists do all procedures. A hygienist on the professional board indicated that: "They have always been allowed and still do the full range of procedures within general dentistry" (PBD4). Several hygienists see the dentist's role as being more specialised "dentist's role is purely for rehabilitation" (OHP4). Dentists accede that they have shifted primary care to the other two professions "dentists got tired of doing routine boring… boring. I say this boring in inverted commas. cleaning scale and polishing and this sort of thing" (DENTP3). Therefore, hygienists feel that dentists do not play a central role in

prevention, specifically patient education, as an oral hygiene practitioner remarked: “dentists don’t do that, they don’t educate their patients on prevention” (OHP4). This suggests that the role of prevention has been liberally reassigned from dentists to hygienists.

Oral hygiene as an occupation is well accepted by dentists, due to the emphasis on prevention, as a professional body dentist describes, “I think it was a profession that was well thought out, the focus being on prevention rather than curative” (PBD1). This was the case because the hygienists previously did not perform curative procedures, as these were performed only by dentists and therapists. This suggests that dentists believe that hygienists have a strong professional identity, as a dentist lecturer notes: “they have a very strong self-perception by the time they are in the third year, they know exactly what they want” (DL2), referring to their role in primary preventive care. The dentists do not see the role of the hygienist as changing and view hygienists’ primary function as preventive and their role as curative. Even though the hygienist’s tasks are subordinated to dentistry, their preventative role has allowed them to be viewed as specialists by fellow dental professionals, as noted by a dentist in practice “she can spend time with the patient that it's really a speciality on its own, you know” (DP5). The hygienists are also seen as important role players in maintaining the oral health of patients, and one dentist lecturer sees this as a key role of hygienists: “they are trained for maintenance in dentistry” (DL4). The therapists on the other hand believe that the hygienist’s role has shifted and that this has increased their status within the dental profession, as a therapist at the professional board level noted: “they are not any lesser a practitioner then suddenly, I think that has changed” (PBD3).

Dental therapists are viewed differently by dentists and hygienists. Hygienists see the therapists’ role positively, as valuable in dental service delivery, as one hygienist practitioner indicated: “therapists are more actively fixing problems like doing basic fillings” (OHP5). Several dentists did not show much support for therapists, as they believe that therapists should not continue as a dental occupation in South Africa, this can be seen in a statement made by a dentist practitioner:

> I'm absolutely dead-against therapists, it's like a half-baked, like a half-baked cookie. That's either you're in or you're out, you're either a dentist or you're not a dentist... a

> therapist, as far as I'm concerned is neither here nor there, I absolutely understand the logic behind it, but no I haven't, and I wouldn't. (DP3)

From the above, it appears that the therapists' role is not clear, where even at the level of the professional board it is felt that the therapists don't have a place in dentistry, as a dentist explained: "they're caught between prevention and curative" (PBD1). Dental therapists are also seen as an unpredictable group by dentists, as a lecturer noted: "Dental therapists are the ones who are very unstable in terms of self-perception" (DL2). The dental therapists are aware of the dentist's contempt toward them, as one dental therapy lecturer says, "I personally know people that hate therapists with a passion" (DTL1). The therapists express the belief that this dislike toward them is reinforced by the dentists' professional association: "Dental Association doesn't make it any easier to change mindset. Because the, I think there's a huge prejudice" (PBD3). The therapists are also aware that dentists feel that the dental therapy occupation is a greater threat to their occupation than oral hygiene, as a dental therapy lecturer described: "a lot of contestations between dentists and therapists, but there is less contestation between dentists and OH" (DL2). Despite the disregard by dentists, the therapists aspire to have a role closer to that of dentists and believe that their occupation has advanced and that they have a strong identity that can operate independently, a therapist from the professional board clarifies:

> they no longer see themselves as subservient to somebody. They don't see themselves as beneath somebody, but they see themselves as alongside somebody, you know. And there's some as a profession that has a certain scope of profession, and that they can do this. And that somebody else can do, because I think what has happened is that there's a mindset change. There's a mindset change that in every walk of life. Every...in any profession. There are people that can do something and can't do something. And when the previous time the dentist looked down upon necessity, or y'all are just therapist so y'all are just hygienists and we are.... We dominate this because we know more has changed. (PBD3)

The dental therapists describe how the occupation experienced disrespect before but that this was improving, a lecturer notes that "they [therapists] fought for professional recognition, and they are nearly there… They have a real have a struggle. And now, there's a lot of changes, and I think they are getting the deserved respect." (DTL2). One of their main

concerns is that therapists feel that their scope has not been expanded, where practitioners feel that "battles that therapists are facing, is that they also want to expand their functions" (DTP1), and this has not been addressed. Another concern is that they feel that dentists question their ability to perform specific procedures, as a lecturer mentioned: "It's the competence that the dentist will query" (DTL1) while another noted "what bothered me was the fact that they kept saying that we're not capable" (PBD3). One of the main reasons dentists also disrespect dental therapists is because they feel that therapists overstep their scope and perform procedures that do not fall into their scope, as a dentist indicated: "we know of dental therapists doing things out of their scope, so that also becomes a problem for the dentists" (DL3).

The perception of each other's roles shows that the relationship between the dentists and hygienists appears to be amicable, with hygienists viewed as taking on a more specialised role in primary prevention. It would seem, however, that the therapists face continued dislike mainly from dentists. Therapists are starting to view hygienists as a threat as hygienists are moving into therapists' curative roles. Even though the roles of therapists and hygienists differ, both these groups have established themselves in the parts of dentistry that dentists did not want to undertake, being considered routine; however, this has caused contestations mainly between dentists and therapists. These contests are also starting between therapists and hygienists and dentists and hygienists.

6.2.2 Dentist is superior and then comes a therapist and then the hygienists

As outlined in the literature review in chapters 3 and 4, there is a hierarchy in terms of the division of labour that exists within the dental profession. The data in this study are consistent in this regard and point to a hierarchy in terms of role definition, where the performance of scope and level of care has shifted slightly since the onset of the changes in regulations for oral hygienists. The expansion of hygienists' scope is entering areas of dentists' work that might interfere with the hierarchical structure of the division of labour.

Oral hygienists are viewed by others in the dental profession as well as themselves as being at the bottom of the hierarchy of care, as most of the procedures they perform are

considered basic dentistry “we are primary prevention, and they are more secondary or tertiary prevention” (OHL5). Hygienists see therapists in the middle, and dentists at the top of a professional hierarchy of care, as their scope is regarded as more advanced: “dentist, dental therapist, oral hygienist” (OHP4); and hygienists agree that there is a hierarchy, with themselves as the lowest occupation in comparison to dentists and therapists “seen as the lower” (OHP4). The dentists have the same perspective, namely that hygienists exist at the bottom of the hierarchy, with therapists in the middle as one dentist stated: “therapist is halfway between a hygienist and a dentist” (DP2). Therapists likewise see themselves at the centre of the hierarchy of care with dentists at the top: “the dentist is superior and then comes a therapist and then the hygienists.” (DTL2). This suggests that despite the distinction in roles or the advancement in scope, the perceptions of the hierarchy of care have not changed for the three dental occupations. It is important to note that oral hygienists themselves indicate that they do not see a change in their hierarchical position, as an oral hygiene lecturer mentions, “we are still seen as oral hygienists... the same as we've been seen 15 years ago so I don't think that is given us more status” (OHL1). This indicates that the perceptions of the hierarchy among dental occupations remain unlikely to change. Dentists continue to dominate mid-level dental occupations in terms of how their roles are defined.

This hierarchical structure within the dental profession is not explicitly discussed and is often disregarded as a concern by the three occupations, an oral hygiene lecturer describes this as follows:

> … it’s such a non-said thing between the dentists, dental therapists, and oral hygienists, that no-one addresses, no-one talks about it, but everyone is aware of. That there is a hierarchy and who is better than who. (OHL4)

The silence about the hierarchy validates the dominance of dentists over mid-level dental occupations. The feelings of superiority and inferiority are constantly being reinforced. This research represents an attempt to raise awareness of such silence and to get the dental profession to start talking about the roles of each occupation more positively.

Such a hierarchy is further reinforced in the workplace as therapists and hygienists feel that dentists prefer to perform procedures superior to theirs, even though they may be able to perform most tasks. They believe that dentists are striving to do more specialised work and leave those lower in the hierarchy to perform basic care, in keeping with what a dental therapy practitioner stated: “dentist is more inclined to cosmetic dentistry or specialised dentistry, he can focus all his energy on that, where we can take more of the basic dentistry” (DTP3). This is reinforced by dentists when they employ therapists and hygienists to do the basic dental work to free the dentist up to do more specialised work. A hygienist from a professional body remarked that the “dentist can concentrate on crown and bridgework or more complicated procedures” (PBD2). This confirms that different types of work are reserved according to the hierarchy set within the dental profession.

There is consensus within the dental profession that the hierarchy is initiated during training, as a dentist lecturer notes “it starts at the point of Education. It's not something that we get out there, it starts from the education at the Dental School where they get indoctrinated.” (DL1). This is mainly attributable to the differences in the length and type of qualifications. The literature reviewed in Chapter 3 shows that dentists historically had a five to six-year bachelor's degree, therapists a three-year bachelor's degree, and hygienists a two-year diploma. There has been a substantive change to educational preparation for hygienists, as qualifications changed to a three-year bachelor's degree and on NQF Level 7, the same as dental therapists. Yet, the requisite developments in education and training have not changed how hygienists are perceived by others or by themselves. An oral hygiene lecturer indicated that: “you weren’t even regarded as a graduate who qualified with a university degree” (OHL4), this suggests that the level of qualification still creates a hierarchy in terms of what knowledge students receive, which is reinforced by how this is perceived in practice. Despite the qualifications of the hygienists changing from a diploma to a degree, their self-image has remained unchanged, and they do not see themselves advancing in terms of the professional hierarchy. It is a question as to why their image has not shifted, what makes the hygienists feel that they are not perceived differently, and what the role is of the other professions in not allowing this shift (as seen in Chapter 8).

Another factor why dentists dominate the profession is, that the designation of 'doctor' places dentists in a higher position, one dentist practitioner described this as follows:

> … there's a kind of… is a kind of… not arrogance but it's kind of… dentists think that they've trained for five and a half or six years or however long it is, I think it's five years now, and that they're, they're more qualified in that other people shouldn't be kind of assume the role as in trying to take away from the kind of doctor role. So, there's this kind of tiered, like layered hierarchy that dentistry should operate under. (DP4)

The title of 'doctor' gives dentists the view that they are in the most powerful position in the hierarchy of dental care as indicated by a dentist: "entitlement comes from the knowledge base and the title of doctor" (DP4). The dentistry students adopt this position early during their training, "they were coming out of university with an idea that they were superior to the dental therapists and the hygienists" (PBD3) a note by a therapist. Thus, while students are in training, there is a sense of superiority among the dentistry students, while the dental therapy and oral hygiene students feel inferior. This feeling of dominance and subordination could well originate from the level of specialisation that each occupation has in terms of their scope of practice and the nature of their work, however, there are several other issues in the training which seem to amplify the boundaries between the three occupations which will be discussed in Chapter 8. The boundaries created during training can be seen as being pushed from the outside of each occupation by dentists, but the evidence also points to therapists and hygienists initiating this boundary from within their occupations. It also shows that each occupation is looking for a clearer classification of their scope of work.

6.2.3 They expand, it eats into our scope

The issue of role blurring is evident from the discussion above, and this section foregrounds it further. Some of the points above show how the roles of the three occupations are distinct, yet there are also concerns that the changes to the scope of hygienists are experienced as a form of roles blurring, as one dentist stated: "scope is being expanded in fields where it is kind of seen as encroaching" (DP1). A professional board dentist indicates that "the biggest problem is the two professions, oral hygiene, and dental therapy, were almost seen as dead-end professions. So, expanding the scope is a natural phenomenon in

that case" (PBD1). This means that the scope and roles of these occupations will continue to be challenged as these two occupations seek advancement. The dentists see the expansion of the therapists' and hygienists' as difficult to control, as the practitioner mentioned that "they want to expand, they expand, it eats into our scope, so it just becomes a kind of a non-ending whatever" (DP1). This suggests that dentists seem threatened by the expansion of scope, as a therapist explains, "dentists are definitely threatened by that, with the exception of course of the specialised work, I mean the basic dentistry if you look at the work that therapists do the restorations and things." (DTP1).

An oral hygiene lecturer described how dentists interact with hygienists concerning the encroachment of scope: "if you say I'm going to do something on that tooth, dentists will say, no!" and "this is the tooth, and you are working on my space…" (OHL3). Another oral hygiene lecturer remarked that this is mainly due to a major shift in the status quo of hygienists: "Local anaesthesia is queried by dentists because of tradition, you never used to, or they never knew you to give local… so why are you injecting now? It becomes a situation of, if you've never done it before why are you doing it now, and are you qualified to do it?" (OHL4). This is because it was not previously part of the scope, and it would not be easily accepted by dentists. This shows that hygienists believe that, even though dentists say that hygienists' work has not changed, they are disturbed about the fact that hygienists have been allowed to expand their scope. Consequently, it would appear that dentists are creating boundaries around the type of procedures hygienists may be allowed to perform.

This is highlighted by some participant dentists and therapists, as they see the expansion of hygienist's scope as a threat to their roles. A dentist remarked: "greater overlap between the three groups now. And that is cause for concern because it's not clear cut as to what belongs where" (PBD1). Dentists describe the two other dental occupations as impinging on their scope of practice but have greater concerns about therapists than do hygienists, as a dentistry lecturer noted:

> … the role of the therapist is starting to blur between the role of the dentist and the hygienist. And for me, I think that it is more the therapist that is at risk of becoming obsolete. If this continues, I think that the hygienist plays an important part as well as the dentist, but I think that the therapist may be in trouble. (DL1)

Therapists are perceived as a threat because they are impinging on dentists' scope in independent practice and are seemingly successful. Their success in private practice puts the therapists in a greater dilemma of being expelled from the dental profession. Dentists feel a loss of control over what this occupation does in practice and would much rather not have therapists included in the professional hierarchy of care.

A therapist from the professional board emphasises dentists' support for hygienists, stating; "They didn't have a problem and I'm going to be so bold as to say that a lot of support was given to the hygienist because the hygienists work primarily in a dentist practice" (PBD2). The dentists that employ hygienists display a great deal of support for expanding the scope of the hygienists as this would ultimately benefit them. A hygienist from the professional board indicates that it was dentists that requested some of the changes to the scope for hygienists, noting that: "a lot of the procedures like vacuum formed mouth guards and tooth whitening trays, those all came from the dentists that said our hygienists have been doing this so put it into the scope" (PBD4). Dentists also gave support to hygienists when they thought that the procedure would not be too complex, as a dentist practitioner indicates, "they can do a soft lining ... fine, and I don't think there's much harm that can be done they can open the bite, which is not a big deal" (DP3).

Even though all three groups see that their roles may start shifting, there has been greater pressure from the therapists to want to broaden their scope. A therapist noted in this regard: "discussion for years now about therapists starting the first stage of the root canal treatment just to get pain relief for patients" (DTP3) and a hygienist similarly noted: "a lot of it is denture work and crown and bridgework that dental therapists are trying to do… and that's pure scope encroachment" (PBD4). Even with the insistence of the therapists for additional procedures, there have been very few changes to their scope. This shows how their advancement has been curtailed over the years.

With the changes to hygienists' scope, the blurring of therapists' and hygienists' roles is ever-more apparent as a dental therapy lecturer observed: "lines between a dental therapist and a hygienist have somewhat blurred more recently" (DL1). Similarly, they feel

that the introduction of the expanded scope allows hygienists to perform more curative work, which is traditionally more of a therapist's role: "the role sometimes is a bit grey. When it comes to restorative care with hygiene and therapy" (DTL2). The dental therapy practitioners are particularly concerned that as the hygienists' scope continues to expand, they will become more like therapists, by taking over their tasks "if there's anything else that's included, they're not going to be hygienists anymore, they're going to be therapists" (DTP3) and "they must just leave something for us now, they're taking away everything from us" (DTP2). A dentist describes the expansion of scope for hygienists well when he noted: "the problem is about turf, you know, dental restorations for dental hygiene" (DP4). This emphasises that boundaries around the oral hygienists' role and scope are being resisted by both therapists and dentists.

What is surprising is that oral hygienists are hesitant about the changes and do not agree with dentists and therapists about perceived encroachment. A professional body hygienist notes that hygienists' scope has not changed and that they nevertheless do mainly the basic procedures that fall within a traditional scope: "they are not encroaching on anything… they are still where they were many, many years ago" (PBD4). Some older hygienists[31] feel that their scope should not broaden as it would impinge on their specialisation as prevention agents. Two oral hygiene lecturers indicated: "an oral hygienist must focus on preventive and not move on to restorative because then she really now do what a dental therapist does" (OHL1) and "I saw that then as stepping not over but touching on the scope of the dentists, e.g., your local anaesthesia and such. And I'm not saying that there's not a place for it, but I'm asking aren't we then losing the focus of the occupation?" (OHL5). This perspective from hygienists, specifically oral hygiene lecturers of their expanded scope can be considered a challenge that would confine their scope, and their training, thus delaying the advancement of this occupation. This demonstrates that hygienists themselves are a source of boundaries keeping for their occupation.

[31] *Older hygienists in this case are those practising or teaching as an oral hygienist before the first expanded functions were introduced in 2000.*

The younger hygienists[32] on the other hand believe that they are performing procedures that fell outside of their current scope and want to see further increases in their scope, that would allow them to provide more specialised care:

> I think we should be able to do a little bit more restos [restorations]. They should give us a few more classes to do. More simplified restorations, they're very easy to do. Like, let's say for example, like incisal edge resto or a interproximal restoration. I feel we need to be able to help patients a little bit more than just do temps and class fives. (OHP2)

A younger oral hygiene lecturer explained how the role of hygienists could change to raise the status of hygienists:

> A lot of us are thinking that the patient needs to go to the dentist first and then get filtered down to everyone else, and everyone else means the specialists, the Oral Hygienists and Dental Therapists. But I think it must be the other way around specifically for the Oral Hygienists, I think that your Oral Hygienist should be your first point of call, and then you refer out to curative. (OHL4)

This shows that the younger hygienists appear to be more eager to take on the new scope and advance the profession of Oral Hygiene.

The struggle for possessing and controlling certain basic procedures and holding on to their preventive role has been taken up by several oral hygienists. The hygienists expressed that specified basic procedures ought not to be performed by dentists at all, as stated by an oral hygiene lecturer: "I don't think that dentists should be doing scaling and polishing" (OHL2). It is believed that dentists intentionally do procedures within the scope of hygienists to exclude them from the earning potential, a hygienist lecturer explained: "dentists almost encroach on the OH scope, where they decide I'm not going to let the OH do a fissure sealant" (OHL5). One hygienist raised an incident where dentists placed a marketing advert on their website that degraded the work that hygienists do, to get more work themselves, she mentions that the advertisement read as follows: "At our practice, the dentists take so much pride and care in your good oral health, and we don't ship you off to the hygienist"

[32] *Younger hygienists are those that have qualified in the past 5 to 8 years*

(OHP8). Hygienists are opposed to such rhetoric and instead, push against the boundaries that dentists are creating. The discussion above emphasises that boundary crossing occurs among all three occupations and characterises both the previous and the expanded scope of hygienists.

6.2.4 Summary of dental professionals' perceived roles

The changing scope for hygienists has influenced perceptions about the division of labour, and explains the tensions reported above between the three dental occupations. What is evident from the analysis of the data in this section is that each subtheme exposes contestations about the perceived roles of dental professionals, while some quotations show none.

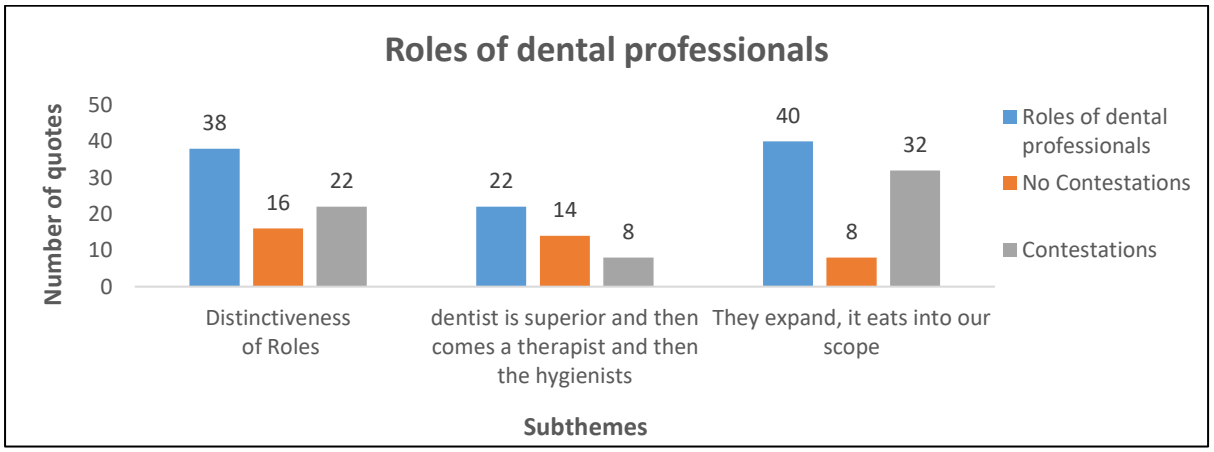


Figure 14 Quotes relating to roles of professionals

In the above figure**Error! Reference source not found.** the first subtheme "distinctiveness of r oles" has 38 quotes, of which 16 show no contestations around whether the roles in the three occupations are distinct, or have changed in any way. Further to this, 22 quotes show that there are contestations about the changing of roles, indicating that self-perceptions of their roles are viewed as distinctive. These contestations centre mainly around the view that the hygienist's role has not shifted significantly. The hygienists perceive themselves at the bottom of the hierarchy of care, performing predominantly primary prevention procedures. The hygienists strongly identify with prevention as their area of specialisation and do not want to assume changes to their role. This signifies that the hygienists may be content with their position in the dental hierarchy and they are not ready for professional advancement.

They are creating boundaries around the tasks they perform in the future, although younger hygienists are pushing for greater scope and autonomy. Therapists are observed to have weak self-perception and are challenged mainly by dentists. Even though the therapists do not describe hygienists as a threat, they still feel that their occupation is in trouble.

The different occupational roles signify a certain hierarchy with dentists viewed as superior and the other two dental occupations reliant on them for work. In the second subtheme, "dentist is superior and then comes a therapist and then the hygienists" there are 22 quotes. 14 of which show no contestations that dentists dominate. This confirms that there is agreement around the hierarchy of roles in the dental profession, with dentists dominating both therapists and hygienists. Only eight quotes question the fact that dentists dominate the dental profession and control the work of other occupations. These are mainly from hygienists who query whether dentists ought to be in control of the procedures that the hygienists perform.

In the third subtheme 'they expand, it eats into our scope' there are 40 quotes, where of these eight show no contestations and 32 show contestations. The data suggests that tensions are rising regarding the roles that are starting to blur due to the legislative changes for oral hygienists. The concerns that occupational roles are beginning to blur come mainly from dentists and therapists, as they see this as a contest to their occupational boundaries. Dentists are reticent about changes in the scope and autonomy of therapists and hygienists. while the therapists and hygienists appear to be more supportive of an expansion of one another's professional scope and status.

Despite the changes in legislation and the development of qualifications for hygienists, the division of labour of the three dental occupations has not shifted and perceptions of the hygienists' status remain largely unchanged. This analysis of the perceived roles points to a paradox, where there is a predictable acceptance of a hierarchical division of labour dominated by the dentists on the one hand, and continuous contestations of the occupational boundaries between dentists and hygienists, which was not anticipated.

6.3 Professional Recognition

The discussion of professional recognition outlines the extent to which the three dental groups recognise each other's abilities in the workplace. Despite dentists recognising the capabilities of mid-level dental professionals (more specifically hygienists), dentists will not entrust complex procedures to them, citing a lack of knowledge hygienists also doubt their abilities to perform more complex procedures.

After coding the transcripts, seventy-two (72) observations were made relating to the aggregate dimension of professional recognition. These observations came from twenty (20) interviewees, where a representation of the number of observations for the different interviewees can be seen in Figure 15 below.

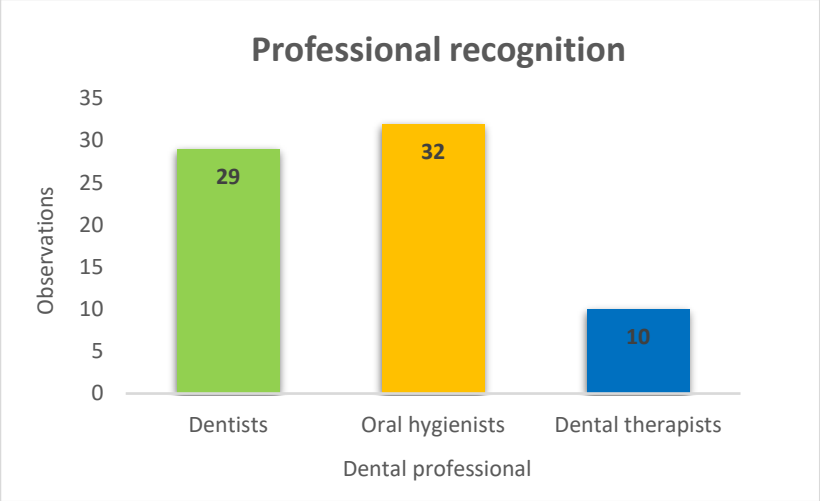


Figure 15 Observations taken from interview transcripts about professional recognition.

Figure 15 illustrates the number of observations taken from each interviewee regarding their professional recognition. The highest number of observations were drawn from hygienists. Of the seventy-two (72) observations, thirty-two (32) were from hygienists, twenty-nine (29) were from dentists, and ten (10) were from therapists. The most observations came from the dentists and oral hygienists, showing that both groups had much to say about the professional recognition between the three occupations.

Table 6.3 in Annexure E illustrates the data structure which indicates how the observations were analysed. A first-order analysis of each observation was carried out, which brought to light first-order concepts. These first-order concepts were then grouped through a second-order analysis and two second-order themes were identified. The second-order themes were then combined into the aggregate dimension of professional recognition. The two subthemes discussed below are:

- I don't see anyone unless they've seen the hygienist – 34 quotes
- Doesn't make sense for hygienists and therapists to treatment plan - 38 quotes

6.3.1 I don't see anyone unless they've seen the hygienist

When considering the extent to which the three occupations recognise each other's ability to perform tasks, I explore the view each occupation has of the other's knowledge, expertise, and autonomy. Section 6.1.2 shows dentists' lack of awareness of hygienists' scope, however, when it comes to recognising the hygienists' ability to perform procedures in their practices, the dentists claim to have high regard for hygienists performing specific procedures that are within their scope, as one dentist practitioner describes, "if it is within its scope of treatment and she's highly competent" (DP2). Many dentists benefit from the additional procedures granted to hygienists, to ease the workload for themselves in practice, in this case, another dentist practitioner says, "if she's able to function her full scope of what she… what she's allowed to do. It takes a lot of the pressure off your hands" (DP5). The respite dentists receive when hygienists and therapists in their employ undertake basic procedures allows some dentists to agree to the additional responsibilities being included for hygienists, as a dentist explains:

> if I need to do an extraction or something like that she will, you know, do the local anaesthetic for me so long and then I'll just walk you through the surgery and do the surgical procedure, or things like that. (DP5)

As discussed previously in 6.2.3, hygienists have the endorsement of dentists to do additional procedures, while therapists are not sanctioned to perform their scope. As mentioned earlier, this is mainly because dentists see therapists as more of a threat to their scope and they would much rather be aligned with hygienists that work mainly in supervised

practice, and do not have many curative procedures in their scope. Some dentists view hygienists who work under their supervision as a crucial element within their practices and indicate that they give hygienists a great deal of responsibility for a patient's initial care. A dentist remarked, "I don't see anyone unless they've seen the hygienist" (DP2). Another dentist on the professional board says that private dentists use hygienists to undertake more of the novel procedures, he explains that "dentists have developed so much of trust in their hygienists that they just allow them to continue with the work" (PBD1).

Even though the oral hygienists' feeling of inferiority is cited in 6.2.2, some hygienists believe that dentists value their opinions and view them as professionals: "dentists are seeing hygienists as professional people" (PBD2). This feeling of recognition that hygienists receive from dentists, has mainly come from younger hygienists who have completed their bachelor's degrees, who stated: "They respect my opinion quite a lot, as well as I, respect their opinion" (OHP2) and "some actually saw you like as much as a colleague and a co-worker and a professional in your own right" (OHP8). Older hygienists with a diploma express doubt about their competence to perform certain tasks, as mentioned by an oral hygiene practitioner, "me not thinking that I was good enough… it was about me really doubting my capabilities" (OHP3). Hygienists and therapists also believe that the respect that they get from dentists originated mainly from younger dentists, who wanted a greater collaboration with the dental team. A professional board hygienist indicated that: "the older generation dentists they would say 'do as I say', whereas a younger dentist would say 'have a look here… how do you think you would approach this'" (PBD2). This is reflected in a remark by a dental therapy lecturer, who stated: "younger dental dentists, that are very pro-hygiene and pro-oral hygiene and therapy" (DTL2).

Some hygienists highlight that they are the first point of service to patients, "Hygienist is seeing the patients first nowadays, and that trust has developed over a period of time" (PBD1) and that over time dentists start to recognise their value

> there is a lot more respect that has been gained, respect for what they can do and can contribute to the practice. Whether working independently or under supervision, dentists are starting to see the value that the oral hygienist brings. (PBD1)

Interestingly, the hygienists who have a Diploma in Oral Hygiene expressed less confidence than those who completed a bachelor's degree in Oral Hygiene.

6.3.2 Doesn't make sense for hygienists and therapists to treatment plan

The approval that dentists describe above concerning recognition to perform certain procedures is not consistent when it involves complex procedures which are to be performed autonomously. Several dentists are disturbed about the decision-making and performance of complex procedures by hygienists and therapists. In the interviews with dentists, it became apparent that the approval of certain procedures in the new scope for oral hygienists is contested by dentists. The procedures that were predominantly contested included diagnosis and treatment planning, preventive resin restorations, and local anaesthesia.

The same dentists in the section above, that claim that hygienists can perform certain procedures indicate here that they should be the occupation that ultimately controls patient assessment, diagnosis, and treatment planning. They express this as a procedure that is an important part of their work, which only they should perform, two dentists explain it as follows: “I do the charting the examination, and I do the treatment planning, and I do the treatment coordination” (DP2) and “when it comes to full treatment planning, I will still take over” (DP5). This is acknowledged when they mention that decisions for patient care and referral are ordered in practice: “dentist completes the comprehensive dental plan, and then refers back to the oral hygienist” (DL4) and dentists state that they would not entrust diagnosis and treatment planning to hygienists. They see this procedure as lying beyond the scope of work for hygienists “I don't allow her to do a full comprehensive treatment planning on it that's, that's just way above that what's needed” (DP5). Furthermore, dentists challenge the fact that hygienists and therapists are allowed to make treatment plans, as one dentist exclaimed:

> It doesn't, it actually doesn't make sense for hygienists and therapists to treatment plan. If the treatment plan is limited to their… to their scope of practice which is now, possibly detrimental to the patient's health. (DP1)

In addition, the dentists also question the public's perspective of hygienists' proficiency "it will take society, a long time I think to just trust a diagnosis coming from a hygienist" (DP2). The main reason for this is that dentists believe these professionals do not have the requisite knowledge. A dentist lecturer states, "it would require that the hygienist is capable and that they should have that necessary skill to make that initial diagnosis for referral" (DL1)**.** This same dentist lecturer notes that dentists are anxious that the knowledge of therapists and hygienists will not be sufficient for making complex decisions in patient care, he clarified:

> … that is where the concern of the dentist comes in… they feel that "do the hygienists and therapists recognise all these factors to refer to them?" And "are patients getting the best treatment that can be afforded to them?" (DL1)

This shows that dentists believe that therapists and hygienists have limited knowledge to perform complex procedures. The therapists support dentists, as they also query whether hygienists should perform complex procedures: "hygienists, I don't think are allowed to do full assessments or check-ups at this stage. So, from that point of view, they wouldn't be able to, to make that call" (DTP3). Therapists likewise doubt their capacity to make decisions and are more comfortable collaborating with a dentist: "we'll decide, you know what's the best way forward for the patient, if it was certain things, I cannot decide on... so we sit together" (DTP3). The contestation around the making of a diagnosis and treatment plan is important to highlight because restricting these procedures could reduce the judgement and the level of professionalisation that the therapists and hygienists seek. This brings to light the fact that there appears to be a shift from seeing the hierarchy as being intact toward the three occupations having disagreements about who should be allowed to perform more complex procedures.

A matter which arises for mid-level dental occupations is that they have been legally allowed to practice independently and would thus be required to perform diagnostic procedures such as assessment, diagnosis, and treatment planning procedures. However, despite these procedures having been included in the expanded scope for hygienists it is not stipulated as a comprehensive diagnosis. An oral hygiene lecturer explained how the role of hygienists in diagnostic procedures is viewed by the dentists at her university and stated:

“they said that we not actually allowed to make a diagnosis “ ons maak mos ‘n voorloopige”” [we make a provisional] (OHL2). With this, the oral hygiene diagnosis is not comprehensive as it is limited in scope, excluding the procedures performed by the other two dental groups. The professional board hygienist explains the importance of hygienists having to make a diagnosis. She says:

> by 2000 the process of care came in and by 2013, it became dental hygiene diagnosis that was incorporated… specifically you can diagnose, and you can do a differential diagnosis for all the things within your scope, the things that you can understand… the rest of it as always if you don’t know what it is, just describe the lesion and say I’m referring. (PBD4)

This statement regarding the diagnostic abilities of mid-level dental professionals shows that the performance of such procedures is not trusted within the dental profession. The mistrust is signified by provisional diagnoses having to be certified by a dentist. Dentists do not trust the diagnosis-making of hygienists and therapists, and the hygienists themselves are complacent in undertaking limited diagnoses and referring to dentists. This leads to the problem of not being allowed to perform a comprehensive diagnosis, that mid-level dental occupations are reliant on dentists to sanction the work they can do. Such reliance means that mid-level occupations are not truly autonomous, and this impedes their intentions to open a practice independently.

Furthermore, despite mid-level dental professionals being allowed to perform diagnostic procedures limited to their scope, they affirm that their training prepares them well for this. An oral hygiene lecturer indicates that hygienists are taught how to perform thorough diagnostic procedures, where she stated: “we teach our students to do a proper examination, do a diagnosis, work out the treatment plan so they can” (OHL1). A dental therapy lecturer concurs that the training is adequate for therapists to make decisions in practice by stating that “training has equipped them to make their own decisions about diagnosis and they know referral patterns” (DTL2). Despite being taught diagnostic procedures, the oral hygiene lecturers indicate that dentists are highly prescriptive in practice, stating: “you get dentists where he will tell the oral hygienist actually what she is supposed to do” (OHL1), where the hygienists' decision-making power is taken from them.

This discussion points to two concerns. The first is that dentists don't trust mid-level professionals in making a diagnosis and the second is that there is a sense of mid-level professionals feeling that they are being controlled by dentists.

Making a diagnosis allows therapists and hygienists to treat and refer accordingly. Even before the scope changed in 2013, the ability to make a diagnosis has given some hygienists a sense of control over what they do, as a professional board hygienist described: "I have never seen an issue with diagnosing. At the end of the day, if you can't see it's a Class IV abrasion lesion, what are you treating then, how you gonna realise you have to treat it if you can't diagnose it… it marries the two" (PBD4).

Other procedures allowed for hygienists such as local anaesthesia are contested by dentists as they believe that hygienists lack the requisite knowledge to perform these procedures:

> I'm scared when I give a lot of my patients blocks hundreds of times. Yeah, and I'm scared to give a block. Yeah, I've done full anatomy in my day, we did anatomy from the head to the toe. So, I've done anatomy of the whole body. And I understand the anatomy of the, of the trigeminal nerve and the inferior alveolar nerve and I continue now I worry about giving a block our colleagues maxillofacial surgeons who feel the same as me guys who've given a block and the patient's walked away with a with a numb tongue and a numb lip forever. So, now you're telling me that oral hygiene has had been given that though again. Good luck to them. Good luck to them! (DP3)

This statement shows that despite dentists querying their ability to perform complex procedures, they still perform these procedures routinely. This highlights that dentists might be unlikely to accept that hygienists be allowed to do procedures such as local anaesthetics because they find this procedure difficult themselves.

Some hygienists describe their fear of doing complex procedures. Several hygienists do not trust their capabilities and feel safe performing a limited assessment and diagnosis. One practitioner remarked, "limited assessment makes sense so that you can give the patient peace of mind" (OHP8). The main reason why practising hygienists did not want to perform certain procedures, is that they believe that they do not have enough knowledge to make

decisions: “I make my patients sign that form saying “Look, I’m not a dentist, you have to go back to a dentist to see” (OHP4) and “we don’t have the expertise that a dentist has” (OHP8). The hygienists mention that they require the relevant knowledge to perform tasks confidently, a practitioner indicated, “I think one always lacks knowledge… I think it’s not so much from the practical… it’s more about the background…” and “I mainly do scale and polish and I do local anaesthesia, but I was never shown how to do the mandibular block, so I only perform, infiltration and anterior teeth” (OHP3). Another hygienist describes her training and says “I don’t feel it was adequate. What I, for instance, learned about local anaesthetics and pharmacology is non-existent. So, I had to make a plan and sort of, you know, get a way of getting the knowledge. Which I still don’t know any clue about pharmacology“ (OHP1). These statements by some of the hygienists validate dentists’ beliefs about the lack of knowledge that hygienists have to perform contested procedures.

The opposite can be said regarding the fact that hygienists do not possess systematic knowledge; it appears that some hygienists do believe that they have the knowledge, but are nonetheless not trusted by dentists. Some hygienists say that dentists do not think that they are as competent as they are to do the expanded scope. One hygienist indicated: “they don’t think that we are as capable as they are” (OHP1). Another oral hygiene practitioner stated: “The dentists or they think I just know basic about dentistry, then they don’t really, they have this perception that I don’t know much” (OHP4). Another practitioner explained: “I think it’s just habit, they just used to do that. And maybe in a short, in a small way, maybe not trusting us that we can do it as well as they do. I’m not convinced that all the dentists are a hundred per cent sure of what we are allowed to do” (OHP1). An oral hygiene lecturer provides some insight into the knowledge most valued by hygienists, and this was clarified as follows:

> Our focus is definitely not on any restorative procedures. So that over the years we’ve just added on, and perhaps we don’t give a lot of attention to it, but we do we try because the Health Professions Council demands it, but I think our focus is still mainly on prevention. (OHL1)

Here, the lecturer is highlighting that the focus of the oral hygiene curriculum is still on the original scope, therefore, the hygienist does not feel confident enough to do the contested

procedures in practice (e.g., diagnosis-making, preventive resin restorations, and local anaesthesia).

Another reason provided for the lack of knowledge is that the training within dental schools is different for the three occupations, as another oral hygiene lecturer describes:

> … for us, Oral Hygiene and Dental Therapy the 3rd year that when Therapy will differ, the Dental curriculum is completely different, I know the modules in the 1st and 2nd year are the same, especially in terms of Dental Therapy there has been a challenge … one needs to have those basic things… for the dental curriculum is quite different. (OHL3)

This highlights how the curriculum can influence the division of labour between hygienists and dentists, which will be described in more detail in Chapter 8.

Even hygienists who have an independent practice do not believe in themselves and their ability to do certain procedures, where two hygienists in practice indicate "I don't take it upon myself to do a treatment plan and discuss it with the patient" (OHP1) and "I still feel that a dentist can see more than what I see" (OHP4). They also disclosed that they are hesitant to perform the procedures in the expanded scope: "if it goes deeper within the dentine without you having access to a dentist, you are a bit more weary, I'm a bit more scared" (OHP8). The hygienists are aware that dentists disregard their knowledge, and that dentists do not trust their judgement:

> She's not a dentist and she doesn't know! You need fluoride!" And I'm like, 'No, you don't need fluoride You see? So, then I had to phone Dr [...] and put her online so that the patient could hear what Dr [...] said. (OHP4)

Even though it is the case that some hygienists are not sure about their ability to make a diagnosis, other hygienists show greater ambition to professionalise, an independent hygienist remarked: "I have always been doing diagnosis, and treatment plans" (OHP6). The hygienists also revealed that they often get direct access to patients ahead of other professionals in the practice "some practices even the patients first go to the oral hygienist they do the examination" (OHL1).

What is also concerning is that the oral hygiene lecturers are not clear about how the scope is written, and where the diagnosis and treatment planning ends for hygienists, as this lecturer explained:

> That's another problem, what is the dental hygiene diagnosis... What is a dentist or dental therapy diagnosis, so that's the other thing I've seen have underlined. Okay and developing appropriate treatment plans in the scope of the provision of oral hygienist. So is a dental hygiene diagnosis, only relating to... yes you've got Calculus, I've got to remove it... Well, can she say well you've got caries on tooth number four, five, I suggest you go and see a dentist, is that the dental hygiene diagnosis, or is it the dentist diagnosis. (OHL1)

The fact that oral hygiene lecturers are not certain about the scope of diagnosis influences the curriculum and how students will be taught such procedures (see Chapter 8).

This discussion emphasises the extent to which hygienists are not trusted to perform contested procedures such as comprehensive diagnoses and treatment planning and exposes the fears that they have in their abilities to perform complex procedures. The concerns about decision-making come from all three participant groups. In the main, dentists feel that hygienists and therapists ought not to be making diagnoses as this falls under the auspices of dentists. This is upheld by therapists and hygienists who doubt their abilities to make decisions, such as diagnosing an oral condition or deciding on the type of restoration to place. The main reason they cite for this is a deficiency of knowledge to perform diagnostic procedures, even though some reveal that this is taught during training. These self-doubts by mid-level dental professionals decrease their opportunities to use their best judgement, which may in turn stifle the hygienists' and therapists' ability to professionalise.

6.3.3 Summary of Professional Recognition

In the third theme, what is evident from the data is that several hygienists believe that fellow occupations recognise their abilities and the role that they play in the dental profession. However, this belief is not consistent across the participants. Some hygienists believe that there is very little recognition for the scope of work that has been introduced

for their occupation and that they are disrespected in the workplace. In each subtheme, the quotations reveal contestations about professional recognition, while others show no contestations (see Figure 16).

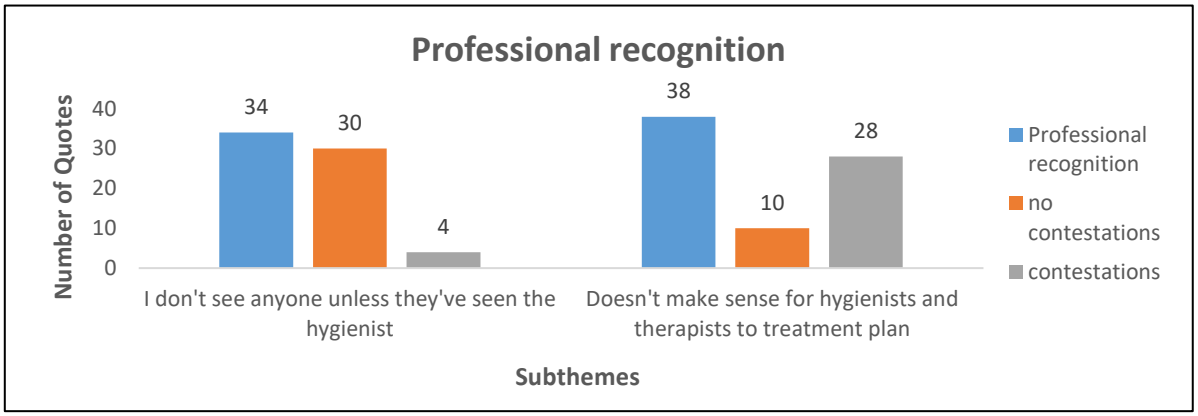


Figure 16 Quotes relating to Professional Recognition

The first subtheme “I don't see anyone unless they've seen the hygienist” has 34 quotes; of these, 30 quotes show no contestations regarding the capability of hygienists to perform the scope of practice. These quotes are mainly by dentists who support and acknowledge the capability of hygienists to carry out numerous procedures in their practices. This also shows the overwhelming support that dentists give hygienists to do procedures under their supervision, which will benefit their practices. The four quotes that show contestations involve hygienists doubting themselves or older dentists who prefer to control the hygienists.

The second subtheme “doesn't make sense for hygienists and therapists to treatment plan” has 38 quotes. The 10 quotes show no contestations around trusting hygienists and therapists to perform complex procedures. Here, these practitioners are confident that they can make decisions for complex procedures. The other 28 quotes show contestations, mainly from dentists, about therapists and hygienists performing complex procedures. The data shows that dentists want to keep control of such procedures as they tighten the boundaries around them.

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There appears to be inconsistency in the dental profession, as some dentists and hygienists generally see the value of oral hygienists’ abilities, while others do not recognise their abilities to perform specified procedures and contestations arise because of this. This shows that there is resistance to the expansion of boundaries from outside of the occupation, with hygienists showing contempt for not being recognised.

6.4 Conclusion of Relations in Dental Professions

These findings emphasise that when examining inter-professional relations, it appears that boundaries are placed on occupations from the outside or from within an occupation. There are actors outside of the occupation who confine their advancement. Even though dentists appear to be more supportive of hygienists, and while they disregard therapists, both occupations feel threatened by the power and control that they experience from dentists. The identities of members of the oral hygiene occupation are shaped from the outside by the fact that they feel disrespected in the workplace, and while training.

Boundaries are also asserted from within the occupation. Actors from within an occupation can set limitations on the relationships they have with others and limit the type of work that they do. Even though oral hygienists have been granted expanded scope and autonomy, shifting the mindset of being at the bottom of a hierarchy remains difficult for them.

The data raises five claims about the nature of relations between dental occupations. First, the hierarchical structure within the dental profession continues to shape power relations between the three occupations. Second, the lack of interest in each other's occupations is detrimental to the relationships between the three occupations and causes mistrust in the workplace and at training institutions. Third, there is an inconsistency between respect and lack thereof, this is seen in the workplace and training institutions. Fourth, hygienists feel inferior and are not adopting the expanded scope, despite advancements in qualifications. Fifth, when oral hygienists attempt to shift their professional boundaries (in line with the legislated scope), they come into conflict with more powerful occupations.

Despite the changes in legislation and the development of qualifications for hygienists, the division of labour between the three dental groups has not shifted to a sufficient degree, and perceptions of the hygienists' status remain unchanged. Professional roles are shifting too slowly, yet this is starting to threaten inter-professional relations and communication between the three groups. The findings emphasise that hygienists and therapists have struggled with gaining due respect in the workplace. The hygienists have concerns that their competence is questioned, particularly about working independently. It appears that the dental therapists feel that their status has improved, while the hygienists still experience a sense of inferiority. The findings of this study suggest that a major factor that explains why hygienists do not take up their scope in full or go into independent practice is the perception of their low knowledge base. Underpinning this are power relations within the education and training arena, which will receive detailed discussion in Chapter 8.

CHAPTER 7

FINDINGS: WORK PRACTICES & RESPONSES TO POLICY

7. Synopsis of Chapter 7

The second part of the three findings chapters is discussed here. This chapter examines the work practices of dental professionals, specifically that of oral hygienists, and how they are responding to policy amendments concerning their professional scope and autonomy. These findings answer the second and third sub-questions, "What are dental professionals' perceptions of the work practices of oral hygienists?" and "How are oral hygienists responding to the policy amendments?" The discussion highlights perceptions and responses to work situations and challenges that are faced in the dental profession. The chapter concludes with a summary of the economic challenges that impact dental occupations.

The previous chapter describes participants' perceptions of the roles of the three dental groups and portrays a lack of awareness of each other's scope, which influences how they communicate. Further, there is evidence of respect for the hierarchical systems, which shows how power and control are held mainly by dentists, while hygienists display difficulties in advancing their occupation. Chapter 7 outlines the conditions under which work is performed and what this raises regarding the boundaries that exist within the dental profession. The data is illustrated under four themes indicated in Figure 17 below.

The first theme, 'work conditions', outlines the participants' perceptions of the choices that members of the three groups have for selecting how they work, and how their decisions influence their identities. The second theme, 'performing work procedures' is explained and includes different procedures performed after the changes in scope for hygienists and the conditions under which these are performed. Further, this includes the challenges that dental occupations face when performing their daily functions. The third theme, 'competing for work' gives an account of how work is distributed within the dental profession and the competition for work that occurs between the three groups. The fourth and final theme

discussed here, 'remuneration for work' outlines factors influencing remuneration, particularly the economic tensions among the three groups.

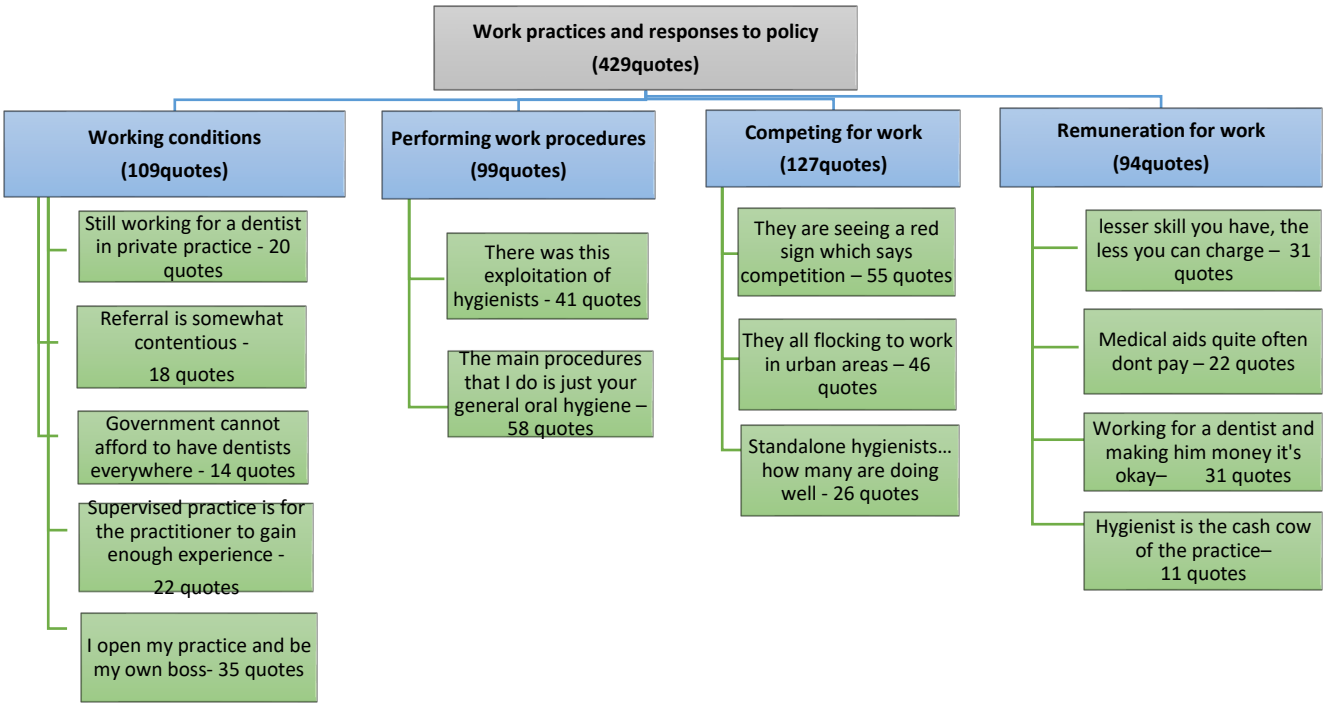


Figure 17 Themes and subthemes for work practices and responses to policy

In the sections that follow, the findings are presented in Figure 17 above as they emerge from the data analysis process, which was derived from the work challenges evident among dental occupations. From the data, the four themes emerged from 429 quotations, which indicate the extensive concerns regarding what occurs in the workplace. The data shows that work practices benefit dentists and that mid-level dental occupations face multiple challenges despite government changes to both their scope and autonomy.

This discussion points to disputes that the three occupations experience in the workplace, and how this impacts the advancement of the occupation. The main argument of this chapter is that not much has changed in terms of the way work is done by hygienists as dentists still control work and remuneration in the dental profession. There have been very few shifts in the boundaries between the three occupations, as dentists are steadfast in maintaining their professional boundaries. In addition, the hygienists have not taken up their expanded scope or autonomy, and doubt whether they ought to cross professional boundaries.

7.1 Working Conditions

There are different conditions under which dental professionals enter the workplace and participate in work. This includes the practice type, which may influence their daily operations and the positions held within a practice, both of which shape their identities. The options could include working independently or under supervision, in solo or group practice. Furthermore, requirements to set up a practice, or whether professionals can cope with the responsibilities of running a practice, are outlined. These are crucial points of discussion as they describe the working conditions set by employers and experienced by employees. These include opportunistic relationships in the workplace used to bolster fledgling practices. The main argument of this section is that, despite being granted independent practice, hygienists still work under the supervision of dentists and are wary of venturing into practice alone.

After coding the transcripts, one hundred and nine (109) observations were made relating to the aggregate dimension of working conditions. These observations came from nineteen (19) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 18.

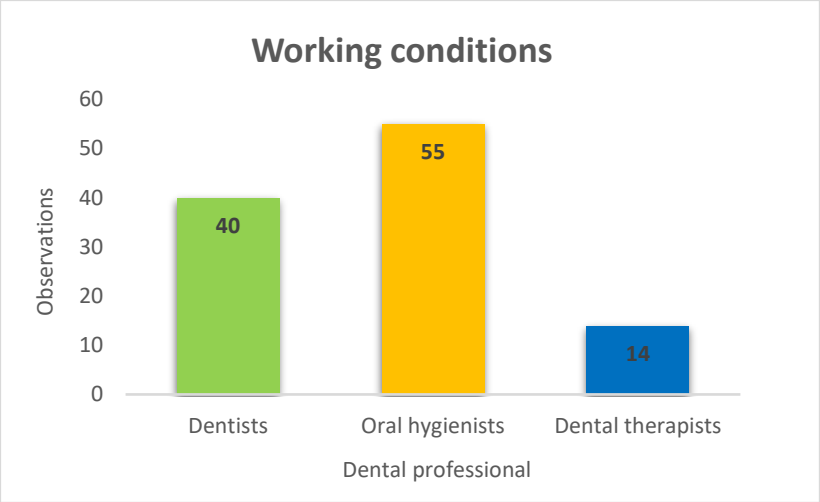


Figure 18 Observations of Working conditions

Figure 18 illustrates the number of observations taken from each interviewee for the theme work arrangements. The highest number of observations were drawn from dentists. Of the one hundred and nine (109) observations, fifty-five (55) were from hygienists, forty (40) were from dentists, and fourteen (14) were from therapists.

Table 7.1 in Annexure E illustrates how the observations were analysed. A first-order analysis of each observation was carried out, which brought to light first-order concepts. These first-order concepts were grouped through a second-order analysis, and five second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: Working conditions. The five subthemes identified which are discussed below are:

- Still working for a dentist in private practice – 20 quotes
- Referral is somewhat contentious – 18 quotes
- Government cannot afford to have dentists everywhere – 14 quotes
- Supervised practice is for the practitioner to gain enough experience – 22 quotes
- I open my practice and be my own boss – 35 quotes

7.1.1 Still working for a dentist in private practice

There are numerous options for dental professionals to practice, which influence how work is performed and controlled. These include solo practices, group/shared practices, multiple practices, and time sharing. These options are briefly outlined in Chapter 2 and below practice, types are presented from perceptions by the participants.

Solo practice finds dental professionals working on their own, where in most situations, the dentists are the main owners of solo practices. According to one dentist, the solo dentist is less likely to employ a hygienist or therapist, as they view this as too costly and they would rather do the basic work themselves. A dentist noted: “never get an Oral Hygienist because a single dental practice can’t afford” (DL4). In instances where dentists employ an additional practitioner in their solo practice, it would likely be a hygienist, as they do not see therapists

as part of the team: “a hygienist and dentist would work. I think the therapist is, is meant to be a lone ranger” (DP1).

Group practice involves several dentists working together and may include a multidisciplinary team with different skill sets, a dentist described this as: “with a prosthodontist and other dentists an endodontist and a periodontist. I am a general dentist” (DP2). The option to work in teams is promoted by dentists as it is regarded as beneficial for all, a dentist lecturer noted, “in a multidisciplinary team everyone benefits” (DL1). Dentists indicated that working in a group setting is also financially rewarding for hygienists and therapists. A lecturer mentioned that “they prefer working for groups because they get a higher salary” (DL4), compared to them working with a solo dentist. However, a group practice is regarded much more as financially rewarding for dentists, where another lecturer explains: “better for a dentist to have a health centre where he has all three professionals” (DL3). The group practice is used by dentists to split the operating expenses of practice: “we shared the cost of the reception, we shared the cost of the rent, we shared the cost of some instruments” (DP5), this demonstrates that there are instances where dentists depend on cooperation with the other occupations.

Another way in which dentists operate is by owning multiple practices, where they set up teams to do the work on their behalf. A dentist noted: “six different practices with different teams in them” (DP1) and in this way generate greater economic wealth for themselves. The decision to employ other dental professionals in practice has also been introduced by a select number of therapists and hygienists in their independent practices. In such cases, dentists have been employed in these practices to ensure that oral hygiene or dental therapy practices offer the full complement of services. In these situations, dentists are employed on a part-time basis to execute procedures that cannot be performed by therapists and hygienists, where a therapist noted this as “time-sharing, or part-time, a dentist coming to the practice” (DTP1). This has become a trend, with a few dentists preferring to take less of the responsibilities and risks of owning a practice “closed the practices, and like, cut down off all the expenses” (DTP1). Therapists follow the same model

as dentists, where they are multiple practice owners, employing others within the occupation. The therapist observed: “they own more than one practice, and they employ the fellow therapists” (DTP1). This appears to be a shift from the traditional inclination of working for dentists to the option of mid-level dental professionals employing dentists or therapists.

However, it is noted by a professional body therapist that most hygienists are working under a dentist’s supervision: “a lot of them are still working for a dentist in private practice” (PBD3). This reveals that the long-established view that dentists are in control of practice is still evident. A dentist in a professional body raises this as a concern, indicating that dentists’ control is still the case “they will be in charge of the practice I think was a sad state. So, maybe that will change with time, but unfortunately, I don’t think practitioners have the same view” (PBD1).

From this discussion, dental professionals choose to operate in various practice types, as they see fit. The type of practice selected creates distinct hierarchical positions within the workplace. In group/multidisciplinary practices that function well, the division of labour is clear. A therapist indicated that “dentists that I know work beautifully with therapists and hygienists, so they have roles, defined roles” (DTL2). With this explanation, it is hoped that each professional has a role to play in this setting. The dentists nonetheless view themselves as the dominant occupation and lay claim to that position in practice.

7.1.2 Referral is somewhat contentious

The fact that there are different practice types with the three occupations having a distinct division of labour, makes it evident that in a harmonious system, dental professionals would refer work to one another. This means that patients requiring specialised work are referred to dental professionals.

However, referral within the dental profession is often viewed as inadequate, as noted by an oral hygiene lecturer who noted: “I can only speak of a limited amount of people that I know of where the referral system is good” (OHL5). The referral of work from one dental

professional to another has not been comparable, as acceded by a dentist lecturer that "referral is somewhat contentious" (DL1). Referral systems are not taught in dental schools, even though students do clinical treatment on patients. Hierarchy is introduced during training due to the different qualifications and the nature of the scope of each group. Claims mainly from hygienists and therapists, are that work is not being referred to them by dentists: "a lot of dentists would have issues with referring their patients to you" (OHP6). A reason that dentists do not refer patients to independent hygienists and therapists is that they employ these professionals in their practices and can therefore keep all work in-house, save costs and not have to refer, as a hygienist explained: "I don't think that the dentists are open to referring patients to Ohs, mostly because dentists still have Ohs in their payroll" (OHL4).

The hygienists and therapists are dependent on such referrals from dentists as a hygienist noted: "Oral hygienists and dental therapists in a very precarious situation because now you must rely on the dentist to refer to you" (OHL4). The dentists have noticed that hygienists are hesitant to send their patients to dentists in fear of their patients not coming back a dentist lecturer explained: "referring from a hygienist to the dentist there is no problem […] but sometimes dentists don't refer back" **(**DL1). The therapists note that this is mainly because dentists provide the full spectrum of care to their patients, one practitioner stated: "I don't think a dentist would refer to a therapist... because he can do everything himself" (DTP3). This has created a situation where therapists and hygienists do not refer to dentists, as another therapist noted: "I have not referred a patient to a dentist" (DTP1). This is a concern too, as the referral system is not fluid within the dental profession.

The referral process becomes further complicated because hygienists see the non-referral by dentists as an attack on their opportunity to get more work in independent practice, as a hygienist in independent practice describes: "he said that he is not going to refer back to me" (OHP8). At the professional board level, they are aware that there seems to be little regard for professional status and referral to a professional with specific a set of skills, as a hygienist noted: "they don't respect the referral systems that are in place already" (PBD4).

7.1.3 Government cannot afford to have dentists everywhere

As seen in Chapters 1 and 2, one of the major intentions of the government for expanding the scope and autonomy of mid-level dental professionals is that it needs to increase the supply of dental services to poor communities. A dental therapist viewed this as a move to increase the number of dental professionals, "taking dentistry to the masses" (DTL3). One of the main contentions among dental professionals is that the motivation behind the government granting independent practice to therapists and hygienists is that it would be far less expensive to allow these occupations to offer dental services. A dentist lecturer stated that "not all areas have dentists, mainly because the government cannot afford to have dentists everywhere. So, they, therefore, would have dental therapists and oral hygienists" (DL3).

The decision made by the government to enhance therapists' and hygienists' autonomy led dentists to believe that these two groups ought to focus primarily on poorer communities "therapists should be in those areas that their whole profession was kind of earmarked for" (DP1). Granting independent practice is viewed as an opportunity for therapists and hygienists to increase the public use of dental services, where a dentist lecturer admitted that: "government clinics can perform some of the basic care of a dentist at lower salary level… can allow the government to expand their access to care and as a dangling carrot for oral hygienists and dental therapists to provide dental care" (DL1).

The intent of the legislation to expand scope and approve independence for hygienists to improve services to the poor is overshadowed by the fact that such communities can only access the public health sector. This is a problem as the government does not have funding for posts. The government intends that private hygienists and therapists work in the NHI system to deliver services at a lower cost in these communities. This means that mid-level dental professionals would need to get access to the small private sector labour market. Thus, this thesis tries to examine how entry into independent private practice is being managed. One appeal is that, if the government allows all dental professionals to transition into independent practice, they ought to provide support to all, as a professional board

dentist indicates, “allowing independent practice is one thing but facilitating it and enabling someone to go into practice is the other thing” (PBD1). This is important to acknowledge because having allowed the three groups autonomy, has introduced competition within the dental profession, evidence for which can be seen in the sections to follow.

7.1.4 Supervised practice is for the practitioner to gain enough experience

To enter independent practice, hygienists and therapists undergo one year of supervision. The supervision year was viewed by the professional board as a training period, “this is a form of internship to support the oral hygienist […] like the commserve year for dentists” (PBD4). This is viewed as a vital part of developing knowledge, clinical abilities, and judgment. The professional board hygienist further explained how supervised practice assists with judgement for hygienists and therapists:

> Supervised practice is for the practitioner to gain enough experience because when you go on your own you are all alone, and you need to make rational decisions; so if you develop your expertise and your skills in that year it helps you, for your own growth and it helps you to establish yourself in terms of your competence to be able to work independently. (PBD4)

This description of the additional year of supervision required for independent practice highlights that hygienists and therapists do not have sufficient knowledge and experience to enter practice independently. Dentists concur that additional work experience is necessary for hygienists before opening a practice, as this dentist indicated: “I wouldn't suggest that hygienists coming straight out of university, opening up a practice” (DP4).

Oral hygienists have been entrenched in a system where they have been performing their work under the direct supervision of dentists. In addition, they have been employed by dentists for many years and follow the instructions of dentists. This means that the control they have over their work has been limited over a long period compared to the therapists. Dentists believe that hygienists are unable to use their judgement while doing their work, as a dentist clarified: “I have always had very competent hygienists. They all asked my opinion on things they all seem to have been more comfortable having me on the, on the premises”

(DP2). This shows that even though this dentist says the hygienists can do the work, he believes that they still rely on the dentists' judgment. When the hygienist does complex work, all findings and decisions are authorised by the dentist: "She obviously does her own differential diagnosis, doesn't tell the patient but gives me her opinion" (DP2). This shows how control over work is in the hands of the dentist in supervised practice. Having worked under supervision for more than forty years appears to have made it difficult for hygienists to make decisions or step into independent practice. The responses show that, while working under supervision, hygienists are not given many opportunities to use their judgment. The following oral hygiene lecturer mentioned that "you had very little engagement in the clinical decisions or decision-making for each patient in terms of management" (OHL4**).** Another hygienist describes how her training influenced her perceptions of decision-making:

> My mindset from my training was we follow the prescription of the dentist you do not... you do not work autonomously... If I can put it that way. You don't make decisions that autonomously, the Scale and Polish the decision of the dentist, everything is the decision of the dentists. (OHP8)

This shows how hygienists pre2013 were trained to ultimately consult and follow the instructions of the dentist and not have the right to make decisions in practice.

Therapists' and hygienists' lack of control also comes from their dependence on dentists to gain the appropriate experience required for them to enter independent practice. A dental therapist mentioned that "you've got to take what comes and you're desperate for that experience". In addition, he noted: "they feel obligated to do it, you know, I mean everybody wants to enhance their skills but at what cost" (DTP3). They feel that they are working in an employee-employer relationship and the dentist, therefore, has control over them, as he noted: "what I didn't like about it was that you're tied down to that person" (DTP3).

Since the regulation changes allow autonomous work for hygienists, not much has shifted in practices where hygienists work under supervision. Oral hygiene lecturers believe that the

hygienists working under supervision have deteriorated into a state of apathy. When discussing the way, they respond to working autonomously, oral hygiene lecturers mention the report that hygienists say: “I’m just going to do this because this is what I’m allowed to do and I’m not going to challenge myself and ask questions or engage and participate and learn” (OHL4). Another lecturer said, “a lot of hygienists still like ... Doctor, Doctor... you know that subordination thing” (OHL1). This suggests that hygienists working under supervision have very little control over their work and are content with not pushing any boundaries.

The experience of one year under supervision before opening independently is also regarded as insufficient, where a therapist noted: “if you're too young and inexperienced and you haven't worked in private practice and you just work for a year and you open up practice, then the struggles are quite huge” (DTL2). This is echoed by hygienists where a professional body hygienist agreed that: “most of the time the oral hygienist actually find that they are not confident enough […] and they will stay a second year in practice supervised […] you also know where your capabilities are and your abilities to function independently will range” (PBD2). Experience in the field is seen to develop the confidence to perform the expanded scope, as a dentist explained:

> My hygienist the one that I've got now has got a lot of experience, and the one I've had previously, you know, she just finished at university and she actually was the best in class. And she was very hesitant you know; I think she was still a little bit inexperienced. She was still hesitant - even though she had expanded functions she was still hesitant to do local anaesthetics. You know she was afraid of the complications what might happen if the patient feels anxious of the local anaesthetic or, you know. Whereas my new oral hygienist is very confident in what she does you know she's not afraid to give the patient, local anaesthetic, or to take impressions, and she's been in the business for quite a long time. (DP2)

The fact that therapists and hygienists do not feel ready after one year of supervised practice solicits the following critical questions; is their training adequate and do they receive appropriate and sufficient supervision during the prescribed supervision period?

Perceptions of the amount of experience received under supervision are weighed up against the level of qualifications. The hygienists with lower qualifications such as the Diploma in Oral Hygiene, who served more time in supervised practice indicate they are confident in performing procedures. An oral hygiene lecturer noted: “diploma students don’t have to stand back for the students that’s got a degree. First, the ones with the diplomas are the ones that have all the experience” (OHL1). This suggests that with experience hygienists should feel assured of performing procedures well. It is a question as to whether or not these procedures require decision-making from these hygienists.

This discussion indicates that participants do not trust whether the hygienist knows how to perform all procedures within the scope. This highlights that supervision is seen as a crucial path toward independence. Dentists express the importance of hygienists and therapists doing one year of supervision to augment their knowledge. During supervision, hygienists concede their power to the dentist, and do not take on responsibility for the work they do. This could be considered a process that decelerates the hygienists’ aspirations to advance their occupation. What is interesting is that hygienists also constrain their advancement by agreeing that they require the prescribed expanded functions courses.

7.1.5 I open my practice and be my own boss

Both oral hygienists and dental therapists cite several incentives for assuming independent practice, and these are mainly related to their aspirations to professionalise. A dental therapist described the feeling of being in command as follows: “I open my practice and be my own boss” (PBD3), another motive of a hygienist is managing your time, “time flexibility, like if you had your own business” (OHP5). Further, there is a notable need by hygienists to be in control of their advancement and earning potential, as independent hygienists explain “control of your career, of yourself and not have somebody tell you this is what you'll earn” (OHP8) and where a lecturer noted: “the initial attraction to independent practice is that you obviously set your own rules, you do it your own way” (OHL4). It is also important to note that a significant reason hygienists cite for entering into independent practice is to use their judgement of patient management, as a hygienist mentioned: “not having a boss like

you can just decide what you want to do for the patient" (OHP5) and a board hygienist said: "you can diagnose, and you can do a differential diagnosis" (PBD4). These motivations come with understanding the importance that knowledge plays in being able to make such decisions as a lecturer remarked: "it's your responsibility. Which obviously will force whoever is going into IPP to know what they are doing" (OHL4). The motivations of mid-level dental professionals to open independently suggest that they are eager to transition from supervised practice and take control of their work.

Dental therapists were initially trained to work in the public sector. Upon regulation for independent practice, therapists transitioned from the public to private setting with difficulty, a professional board therapist stated that:

> When we were trained, or when this course, was first designed, it was designed for this particular professional/ oral health provider be working in a public facility, whatever public facility may have been, whether it was military, or whether it was the government hospitals, or the clinics, or whatever. But it was not designed to work in private practice, in any form of private practice, whether it was with a dentist, or independent practice, it was only designed to work in the public sector. So they had a problem at that point in time, with us going into independent private practice. (PBD3)

The therapists had to adjust to the private sector and are now running independent private practices effectively, despite dentists opposing therapists working autonomously. Dental therapists have established themselves as independent practitioners, a therapist from the professional board indicated that "a large number of them in private practice that are hugely successful" (PBD3). Another therapist notes that therapists open practices as soon as they comply with all requirements: "the year after they complete a degree. A lot of them are already employed to do the in-service and the moment they do the one year. By God, I don't know how they find the premises and they all are in private practice" (DTP1). This move by therapists has not been viewed very positively by dentists, as a practitioner indicated: "the space for the therapist in independent practice is a bit of a tricky one" (DP1). This hints at the fact that dentists are still not acceding to independence for therapists, after so many years of them having received autonomy.

Therapists exhibit concern about the competition that independent practice brings for them despite having been granted independence in the 1990s, as one practitioner revealed: “it's just too much to my stress and too much competition” (DTP2), and “just working on your own. I think it will be a bit difficult” (DTP2). Their concern is slightly different when compared to hygienists, as their challenge is mainly that dentists perceive them as direct competition because their practices are established.

Dentists point out that they do not take issue with hygienists opening their independent practices, where one dentist explained having “no concerns as such about independent private practice for hygienists” (DP1). However, the same dentist appeared to be wary of independent practice for hygienists which would only work if these practices were functioning as part of a dental practice. He stated: “hygienist needs to work within a multidisciplinary type of group practice and not be on their own” (DP1). This confirms that dentists may not be completely convinced about granting independent private practice for hygienists. The dentists' view is that the hygienists have not yet opened independently and are not ready for work this way, as they mentioned: “not many hygienists have taken on the option of independent practice” (PBD1) and a dentist lecturer believes that “none of them is very keen on going into their own Independent Private Practice” (DL4). Another concern from a dentist in the professional board is that hygienists want to make a profit in independent practice and this will take them away from their primary purpose and role. He noted: “focus from prevention to curative because it pays better or so, I think that will be a problem” (PDB1).

Hygienists were concerned about the prospects of opening independently and an oral hygiene practitioner described feeling “scared and so nervous, and I said to him you know doc this is so big” (OHP6). They show very little interest in working as a sole provider of dental care as another hygienist indicated: “not really interested in opening up an oral hygiene practice on my own without a dentist” (OHP5). These concerns are further entrenched as hygienists feel that they do not need to be liable for running an independent practice, as a hygienist mentioned: “not having the responsibility of the practice” (OHP3).

Many hygienists describe finding it difficult to venture into independent private practice and prefer to work in conjunction with a dentist. They don't view themselves as independent practitioners, and don't see a shift in how they do things under the supervision of a dentist and when they work independently, as seen in this statement by an independent hygienist:

> So, it didn't change for me. I would still just do what I would do. If I see something in the mouth, I will make the note on the file and I will ask the dentist to assess that. And get his recommendation of what he would like to do. Most of the time we obviously agree, you know, on what the treatment would be. But I don't take it upon myself to do a treatment plan and discuss it with the patient. I would just make a note on the file and encourage the patient to have regular check-ups with the dentist. So, in our practice, I'm not the one taking x-rays. So, the dentist is doing the x-rays, the diagnosis of what needs to be done, and the treatment plan. So, that again didn't change for me. (OHP1)

The statement above reveals that this independent hygienist is not working completely on her own and still depends on the dentist for decision-making, therefore she does not feel that there is much of a shift in how she works. Even when some hygienists venture into independent private practice, they view themselves as offering basic dental care to lower-income patients as a hygienist mentioned about her independent practice, "very primary care practice" (OHP8). This suggests that they are seeking to enter the lower end of the market to gain access to patients. On the other hand, some hygienists practising independently have found novel ways to embrace their independence. They are using different settings to the norm of providing dental services, to be more financially viable and effective in their practices. Hygienists indicated that these include services such as mobile practices to "bring the mobile into corporate" (OHP4), where the hygienists select target populations specifically for "focusing on going to old-aged homes" (OHL5), and specific treatment types "they focus on bleaching/ tooth whitening" (OHL5). The different and novel forms of providing care were not possible for hygienists, as they mainly worked under the supervision of dentists in their practices.

7.1.6 Summary of Working Conditions

Through examining the working conditions in the dental profession, one can see that dentists constrain the type of work performed by the other two occupations in the hierarchy of care. This is mainly because dentists dominate the rights to traditional types of practice, and hygienists constrain their advancement by accepting lowered positions in these practices.

What is noticeable in the subthemes here is the higher number of quotations that indicate contestations which are about the referral system, the government's mandate, and supervised practice (see Figure 19). What is surprising is the high number of quotes not contesting the opening of independent private practices for mid-level occupations.

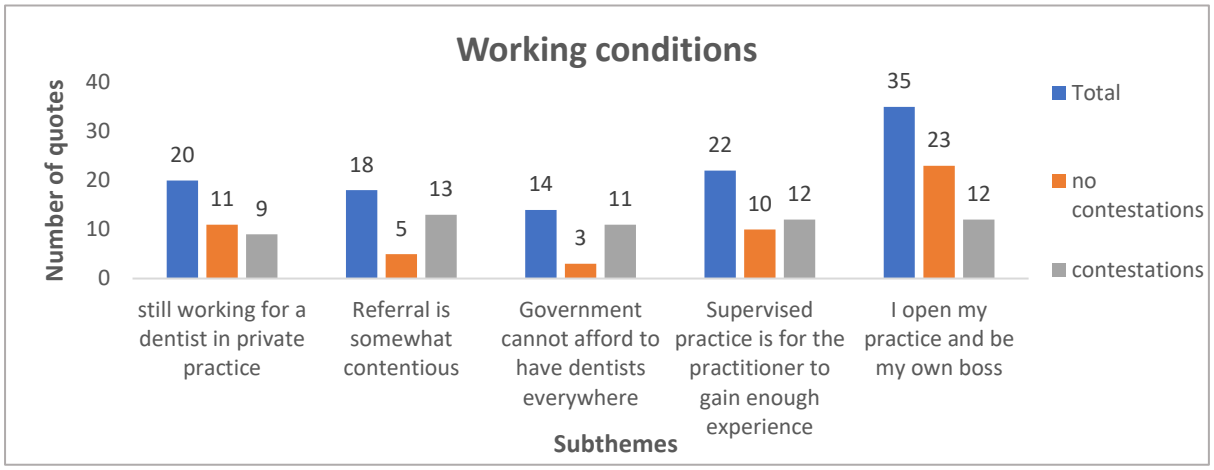


Figure 19 Quotes relating to work arrangements

The first subtheme “still working for a dentist in private practice” has 20 quotes, where, the data reveal that traditional dental practices remain the preferred form of practice, with newer forms of group practice types being introduced. In 9 of the quotes collected, perceptions appear to be due to dentists’ dominance in the ownership of dental practices, which inhibits therapists and hygienists from accessing work and establishing themselves in the labour market. The other 11 quotes describe different practice types that would benefit more practitioners. Therapists and hygienists are primarily employees of dentists and feel exploited by dentists in the workplace. They are in a Catch22 situation because they are

dependent on dentists for work, knowledge, and experience, yet they must continue working, despite feeling exploited in the workplace. Finally, they are concerned about the competition that independent practice brings for them. This illustrates that the conditions under which dental professionals work are controlled mainly by dentists.

The second subtheme “referral is somewhat contentious” has 18 quotes, where five quotes display no contestations, and 13 quotes show contestations. Referral in the dental profession is a great concern as there is a lack of transfer of work across the three groups. This exposes dentists’ control in the workplace because they limit referrals to hygienists and therapists which leads to further tensions. The limiting of work across the three groups creates additional boundaries around the types of procedures that their members are performing.

In the third subtheme, “Government cannot afford to have dentists everywhere” there are 14 quotes eleven of which come from mostly dentists and suggest that they are contesting that the government allowed independence for mid-level dental occupations. This points to the fact that these policies initiated by the government have created greater competition for work. Dentists perceive therapists mainly as their direct competition, and the shift to independence for hygienists is starting to develop competition too. Despite the noble objectives of the government to allow the three dental groups the opportunity to serve the public independently, this has brought about greater competition within the dental sector, yet the next sub-theme shows no contestation on opening a private practice.

The fourth subtheme “Supervised practice is for the practitioner to gain enough experience” has 22 quotes, where 10 quotes reveal no contestations about the need for supervision before independence, and indicate that there is consensus that such experience is necessary to augment knowledge. The participants believe that supervision is required, and the dentists, hygienists, and therapists indicate that they are not ready for independence after the prescribed period. The quotes from the oral hygienist point to the doubts they demonstrate about working independently. Further, 12 quotes divulge contestations about

whether or not it should be mandatory for hygienists and therapists to work under supervision for one year before being allowed to enter independent private practice. The contestations suggest that under supervision, dentists remain in control of work, while mid-level dental professionals do not take responsibility for decision-making.

The fifth subtheme “I open my practice and be my own boss” has 35 quotes, of which, a majority of 23 quotes have no contestations about the opening of independent private practice for mid-level occupations. This is because therapists and hygienists describe what motivates them to work independently, which focuses on them having more control of their time and decisions. These quotes also point to hygienists finding novel ways to set up practice. The 12 quotes signify contentions about going independent these seven quotes are from dentists who don’t agree with this form of practice for hygienists, and five quotes are from hygienists who doubt that they would be able to subsist independently as they have less specialised work to perform and therefore promote themselves to an economically lower market.

7.2. Performing Work Procedures

The dental occupations have procedures within their scope that overlap. In this section, the data draws our attention to the type of procedures the professionals perform, the extent to which it is queried within the hierarchy of care, and the impact the performance of procedures has on respect between dental professionals. The main points of this section are whether hygienists keep to the scope, whether they are allowed to perform the scope by others, and most importantly which procedures are being contested.

After coding the transcripts, ninety-nine (99) observations were made relating to the aggregate dimension of performing work procedures. These observations came from twenty-three (23) interviewees. A representation of the number of observations for the different interviewees can be seen in Figure 20.

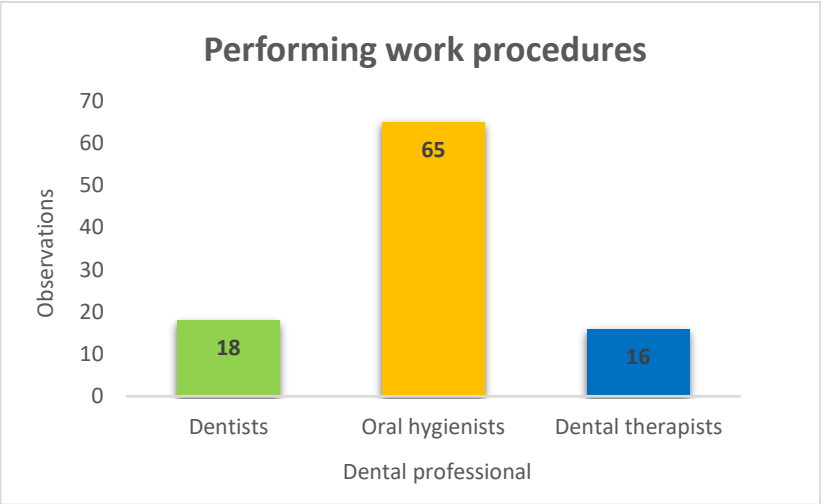


Figure 20 Observations on performing work procedures

Figure 20 illustrates the number of observations taken from each interviewee about performing work procedures. The highest number of observations were drawn from hygienists. Of the ninety-nine (99) observations sixty-five (65) were from hygienists, eighteen (18) from dentists, and sixteen (16) from therapists.

Table 7.2 in Annexure E illustrates the data structure indicating how the observations were analysed. A first-order analysis of each observation was carried out, which brought to light first-order concepts. These first-order concepts were then grouped through a second-order analysis and two second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: Performing work procedures. The two subthemes which will be discussed below are;

- There was this exploitation of hygienists - 41 quotes
- The main procedures that I do is just your general oral hygiene – 58 quotes

7.2.1 There was this exploitation of hygienists

Chapter 6 of the discussion presents a contradiction as it suggests that dentists recognise hygienists' role and their capability to undertake certain procedures. While some hygienists believe that their knowledge is valued and that they are trusted, others are unsure of their abilities to perform complex procedures. In this section, there is considerable evidence

exposing how hygienists feel disrespected by dentists in the workplace, which could contribute to their sense of inferiority.

A major challenge of working as employees of dentists is that hygienists and therapists feel unhappy with their working conditions. Some of the interviewees highlight the exploitation and discontent they experience in the workplace; a professional board dentist exposes that "there was this exploitation of hygienists by dentists" (PBD1) and a dentist practitioner claims that "the dentist was actually making a lot of money off her" (DP5).

One of the main areas of mistreatment that hygienists say they face is, that dentists profit from the work that hygienists do, as a hygienist in practice stated: "I would have to work being sick because it was all driven about profit" (OHP4). The hygienist explains that hygienists also feel that their purpose is to make money for the dentist, she indicated that: "he would not let any freebies slip by, so I had to spin money" (PBD2). This feeling of exploitation is intensified as hygienists believe that dentists only care about economic benefits and that they cannot control what happens in the practice. One hygienist mentions "I couldn't change their values and I couldn't because he wanted to make money as well and he didn't really care" (OHP4). The professional body hygienist feels that hygienists have a lack of fulfilment in the work they do, indicating that they are "not getting that satisfaction because they are looking at quantity and not quality" (PBD2).

Hygienists believe that dentists do not respect them and generally associate them with domestic workers, where a lecturer indicated that: "they call us cleaning ladies" (OHL3) and an oral hygiene practitioner said that she felt like "a cleaning lady, a lady to come in, and do, and listen to them, and just clean and they will make decisions" (OHP4). The hygienists indicate that there are dentists who prefer that their hygienists perform the same routine procedures "you the hygienist, you need to do the scale and polishes for the rest of your life" (OHL4).

The hygienists also indicate that the lack of recognition stems from the fact that the occupation is female-dominated “dentists don’t want males. They don't see this as a male profession” (OHL1). They believe that hygienists are employed by dentists as sex symbols to promote their dental practices, one professional board hygienist exposes what a dentist claims “I thought that all oral hygienists had to be shapely and blonde and pretty and young” (PBD2), where she added that once this is not the case, they want to dispose of the ageing hygienists: “the dentist said to me that he is sorry he doesn’t want an old woman working for in his practice… because it doesn’t fit his practice image” (PBD2).

Even though dentists describe high esteem for the manner of specialised prevention work that hygienists do, as seen in section 6.1, the hygienists believe that they do not receive the recognition they deserve from dentists and are often expected to do menial tasks: “if we do have very unruly patients, I’m the one that normally sorts issues out. If there’s a, like, a stock problem I’m going to be the one to sort it out” (OHP2); while another noted that dentists “use all hygienists as assistants” (OHL1). Hygienists feel that they are employed to do mundane tasks, a hygienist in a group practice states that “they use me for everything that they can because I’m on a salary and I‘m there. So, I’m a bit of a stopgap” (OHP5). The hygienists also feel inferior with little control over the procedures they do, as an oral hygiene lecturer explains “they tell you what to do because they feel that they are superior to you” (OHL1).

7.2.2 The main procedures that I do is just your general oral hygiene

Despite the expansion of their scope, in 2000 and 2013, many oral hygienists merely performed the original 1985 scope. Members from all three dental occupations believe that even though the scope of practice is expanded for hygienists, not much has changed in their daily practice. Hygienists mentioned that they perform primarily the original scope, “Mostly scale and polish” (OHP5) and “I don't think out there... that there were many changes” (OHL1). The dentists indicate that hygienists are not doing the expanded procedures under their supervision, as dentist practitioners remark: “except this Class-I she's never done it” (DP2) and “She doesn't really do all those expanded functions she generally does, she's kind

of pretty hygiene based" (DP4). There are some procedures from the expanded scope that hygienists do perform, such as tooth bleaching and local anaesthesia, an independent hygienist stated: "I do a lot of teeth whitening teeth but the main procedures that I do is just your general oral hygiene" (OHP6) and another says, "I mainly do scale & polish and I do local anaesthesia" (OHP3). Despite this, many hygienists indicate that procedures such as local anaesthesia, and restorations are rarely performed by them. A professional body hygienist indicates how infrequently she uses expanded scope and states, "three years, I've used local anaesthesia three times with patients" (PBD2). This reticence is manifested further as hygienists did not see themselves performing the expanded scope: "I wasn't going to use that" (OHP1) and another remark "don't think that in private practice where I'll be using local anaesthesia much" (OHP8), while an oral hygiene lecturer indicated: "I don't want to do glass ionomers and all those things" (OHL1). The hygienists state that several procedures are not relevant to their preventive role and that certain procedures should rather be performed by other dental professionals, as a lecturer mentions "procedures that they have allowed us to do, I wouldn't say that they are scoped on being preventive" (OHL2).

Dentists continue doing the restorative work, while the hygienists in their employ do the preventive procedures, where hygienists mentioned: "fillings itself, the dentist that I was affiliated with they tended to do it themselves" (OHP6). Restorative work is viewed as the work of a dentist even if dentists know that it is part of the hygienists' scope, a hygienist working under supervision indicated: "I used to do a lot of temporary re-cementation of crowns. But I'm not doing that at the moment because we've got that new dentist" (OHP5).

Several oral hygienists felt that they did not want to do specific restorative procedures. The hygienists have not taken on the restorative work for several reasons, firstly, they say they did not feel confident to perform the procedures: "I'm not doing like for instance, all the time I'm not as good as he is with it (a buccal restoration). You know? So, my stress levels are so much higher, I'm taking twice as long" (OHP1). Secondly, independent hygienists do not see restorative work as profitable, because medical aids do not pay them for certain

procedures, a hygienist said: “before I've had a few of the claims being rejected. Just contemplating is it worth it” (OHP8). Thirdly, they see it as the work of the dentist, where doing it would take away the time which they could be doing oral hygiene procedures, the same hygienist noted: “if I'm busy, I'm probably gonna just refer those to dentists” (OHP8). This means hygienists do not yet see the expanded scope as part of their work and they haven’t taken it up as their standard daily practice.

As noted above, the three professionals do not see the changes in scope occurring in daily practice, and the hygienists appear to be avoiding their expanded scope, yet there is an element of confrontation and a lack of trust surfacing, as a hygienist practitioner indicated: “maybe not trusting us that we can do it as well as they do” (OHP1). The dentists and therapists query the extent to which procedures such as restorations are executed, and the types of tools hygienists may use: “they're not allowed to do anything invasive... like fast hand pieces” (DTP1). The hygienists have a sense that their ability to perform restorative procedures is being questioned by dentists and therapists: “question whether I can do a filling” and “where does it say that you cannot use the drill” (PBD4) noting that hygienists should not be allowed to do restorative procedures: “shouldn't be.... doing restorative” (DTP2). This shows the hygienist’s competence is in doubt and that the other two occupations are displeased about executing these procedures.

Some oral hygienists contest the expanded scope themselves, indicating that there are procedures that should not have been included for hygienists and doubt whether they would perform these in practice: “for me, like preventive resin restorations (PRR),[33] I think that is one of the procedures in our scope that we were not even supposed to be able to do. For me personally, I would not even try that in a practice” (OHL2); and “relining of dentures […] you know, I don’t think the dentist would send the patient to the hygienist to do that” (OHP1). These statements could be showing a lack of readiness by hygienists in practice to commit to their expanded scope and a sense that they would rather let dentists continue to do some of the procedures that were not in their original scope (e.g., preventive resin

[33] ***A*** *Preventive Resin Restoration (PRR) is a thin, resin coating applied to the chewing surface of molars, premolars and any deep grooves (called pits and fissures) of teeth.*

restorations, local anaesthesia, tissue conditioners, and oral hygiene diagnosis). This could also be the applicability of procedures in the expanded scope of practice for hygienists. the fact that hygienists are not ready to perform certain procedures may also point to a possible lack of interrogation on the part of professional boards who are responsible for leading this process.

7.2.3 Summary of Performing Work Procedures

The data show that the performance of common procedures is queried in the workplace. There is less confidence in hygienists performing procedures (such as oral hygiene diagnosis, local anaesthesia, and PRR) and this is questioned by those outside the occupation, although questions also arise from those within the occupation.

Under each subtheme, the quotations sometimes indicate contestations, while others show none. What is noticeable is that more quotes denote contestations around the performance of work see Figure 21.

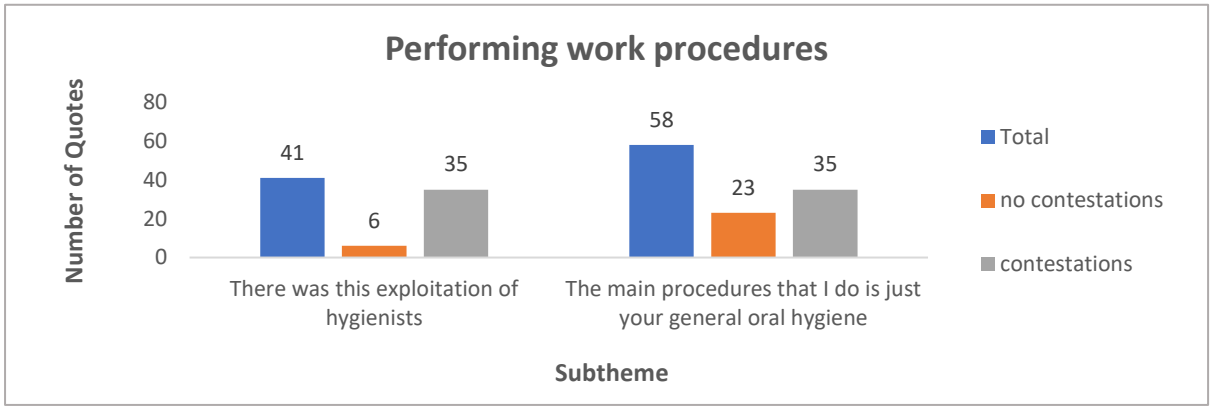


Figure 21 Quotes relating to performing work procedures

The first subtheme “There was this exploitation of hygienists” has 41 quotes, where 35 quotes indicate contestations by mainly mid-level dental professionals when working for dentists. These contests show the frustration of mid-level dental professionals because they do not feel respected in practice. The other six quotes present no contestations and refer to hygienists and therapists having to prove themselves in the workplace.

The second subtheme “the main procedures that I do is just your general oral hygiene” has 58 quotes, of which 23 quotes indicate no contestations about doing the basic scope, and 13 are from hygienists who confirm that they do mainly the basic scope without any sense of contesting this. The 35 quotes are about contesting whether hygienists should perform certain procedures within their expanded scope (e.g., oral hygiene diagnosis, local anaesthesia, and PRR). Of the 35 quotes, 24 are from hygienists who are contesting that they should be performing procedures included in the scope. This emphasises that mainly dentists contest the expanded scope, but what is interesting is that the hygienists themselves are not keen to adopt their scope of practice.

In summary, the evidence from the discussion points to the dental profession not being ready for shifts in the workplace. Hygienists have not embraced several procedures (such as preventive resin restorations, local anaesthesia, tissue conditioners, and oral hygiene diagnosis) from the expanded scope, and still mainly perform their original basic procedures (such as scaling and polishing). The dentists and therapists are not ready to accept that hygienists have additional procedures added to their scope. The hygienist’s responses reveal a form of vocal resistance, yet they do not see the expanded scope as part of their role and daily work.

7.3 Competing for Work

This section is important, corroborating some of the points made in 7.2.1: “working as an employee”. In both sections, exploitation and competition come to the fore in explanations of boundaries over knowledge (even in terms of basic procedures). So, what appears to be the knowledge boundary here is that contested procedures in the expanded scope are shown to be about control over labour market share.

There is an outcry from dental occupations about the competition that exists when contending for work. Dental occupations experience numerous challenges over access to the workplace and who should be involved in the performance of procedures. This section examines the perceived dominant occupation in the labour market. The discussion differs

from 6.2.2 and 6.2.3 as domination is covered in terms of knowledge and expertise. In 7.3 focus is placed on where professionals offer their practices, and how working outside of the current scope affects competition for money between the three groups. The main argument of this section is that dentists are concerned about the possibility of the other two occupations competing for an ever-increasing scope of practice. There is a strong sense of boundary-keeping on the part of dentists.

After coding the transcripts, one hundred and twenty-seven (127) observations were made relating to the aggregate dimension of competing for work. These observations came from twenty-four (24) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 22.

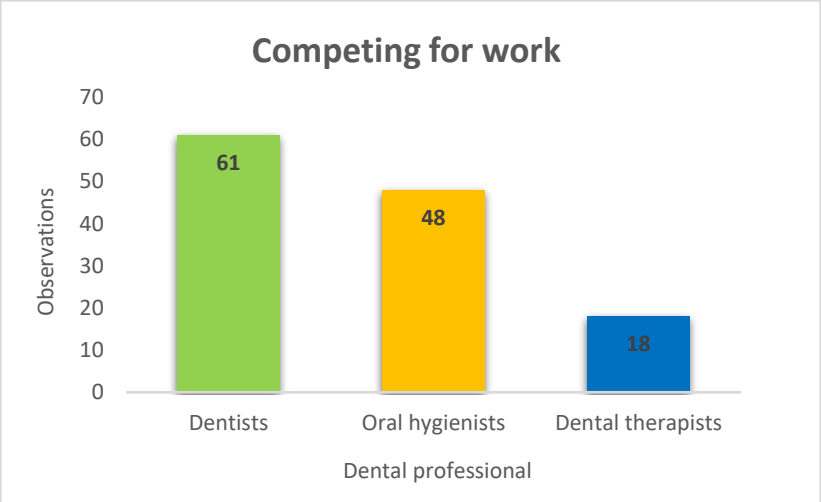


Figure 22 Observations on competing for work

Figure 22 illustrates the number of observations taken from each interviewee competing for work. The highest number of observations were drawn from dentists. Of the one hundred and twenty-seven (127) observations, sixty-one (61) were from dentists, forty-eight (48) were from hygienists, and eighteen (18) were from therapists.

Table 7.3 in Annexure E illustrates the data structure indicating how the observations were analysed. A first-order analysis of each observation was carried out which brought to light first-order concepts. These first-order concepts were then grouped through a second-order

analysis, and three second-order subthemes were identified. The second-order themes were then combined into the aggregate dimension: Competing for work. The three subthemes below are:

- They are seeing a red sign which says competition – 55 quotes
- They all flocking to work in urban areas – 46 quotes
- Standalone hygienists… how many are doing well - 26 quotes

7.3.1 They are seeing a red sign which says competition

Different professionals use words such as “fight”, “struggle”, “tension” and “compete” to describe the competition which has arisen over the demand for work. The competition for work is greater between dentists and therapists rather than with hygienists, as a lecturer explained: “Dentists have started opening themselves up to doing the simple procedures. And I think that that is where there is going to be a lot of tension between dentists and therapists” (DL1).

One major reason for the competition over work is that it lowers the income of dentists, as a dental therapy lecturer described: “the more people you have out there working in the field, the less money you're going to make” (DTL2). Therapists and hygienists believe that dentists are concerned that they would not be making enough money, as a hygienist noted: “they are seeing a red sign which says competition, my money is going” (OHP3), this is described in more detail in the following section regarding remuneration. The view is that competition is substantial, as dentists feel that they are being stripped of their work as this lecturer states: “they would feel that their business is being stolen from them” (DL1). This emphasises the perception that dentists do not want to relinquish control of their work and their income.

The competition is greater when dentists perform basic dental procedures, which makes some dentists feel further threatened, one dentist lecturer describes “if you choose to have a low-end practice, then that is the type of clientele that you will attract to your practice and then someone like a hygienist would be a very big threat” (DL1). Basic dental

procedures are regarded as the staple income for dentists, which if taken up by therapists and hygienists, reduces their work and income: “there are these bread-and-butter issues, we are now encroaching into their private sector, and that it's going to impact on their work” (PBD3). So, although dentists do the specialised work, and although they respect and recognise the scope of hygienists in basic dental work, they compete for the income which comes with basic dentistry. The hygienists indicated that: “dentists want to still do a scaling” (OHL1) and “they would still do it themselves, because why would they give you the opportunity to get exposed to that patient” (OHL4). The hygienists asserted that they should be doing the basic work: “cleaning should be referred to us” (OHP5).

Therapists asserted further that the oral hygiene occupation is advancing while dental therapy is not. This means that hygienists are vying for the same patients, and infringing on their market for income, as seen by the following extract by a dental therapist

> that scope keeps on improving and ours is not it's just, nothing is changing…” I think they [hygienists] shouldn't be [...] doing restorative […] I don't know [...] They should just be doing temporary. That's okay but the permanent fillings, FYI, they must just leave something for us now they're taking away everything from us. (DTP2)

This shows that therapists are also concerned that they will lose work if patients choose to go to hygienists. Further, a dentist remarks “if you then add restorations for oral hygienists there would be a clash between dental therapists and oral hygienists, they will start fighting for patients” (DL3). Consequently, the competition is increasing in all three occupations.

There is consensus that therapists and hygienists are used by dentists to do work outside of their scope, so that the dentist may benefit from it. This can be seen in the quote below by a dentist lecturer:

> Maybe a dentist that has a lot of surgeries… then they hire out therapists and hygienists. Then you find that the dentist doesn’t have enough time to be in all these surgeries at the same time for particular patients. Then they would teach them [hygienists and therapists] to do these other parts which they would be able to do so that work can be pushed, and patients can be seen but they have been seen by the therapist for a procedure. I know those

> that are doing dentures and those that are doing crowns, there are such things that happening. (DL3)

Some dentists confirm that they make use of hygienists and therapists to perform functions beyond their scope while in their employ, where one dentist noted: “She eases dentures, she adjusts biteplates” (DP2). The dentists are the ones who informally train mid-level professionals to do the procedures, as a therapist from the professional board indicated: “the dentist actually said to them… I’ll train you quickly to do this” (PBD2). This is a concern for therapists and hygienists employed by these dentists as they are expected to do procedures that lie outside of their scope when working in these dentists’ employ, a hygienist remarks “I also tend to do a lot of dentures” and “I just give the local, they do the treatment” (OHP2) this is inconsistent to what is described earlier about the perceived relations between the dentists and the hygienists. These professionals are aware that they are not allowed to do these procedures and feel obliged to do them because they are employees of the dentists. A hygienist mentions “a dentist forced his oral hygienist, and they don’t realise it's keeping your boss happy, but you are working out of your scope” (PBD2). This demonstrates that mid-level professionals have very little control over the work they do, even if it lies outside of their scope. This is inconsistent with the dentist’s contestation of mid-level dental professionals doing such procedures because they think the hygienists and therapists lack the knowledge to undertake complex procedures.

Dentists also make use of hygienists and their expanded scope for the convenience of their practices. Several procedures included in the scope have rendered hygienists more beneficial to dentists, where a lecturer mentioned: “Oral hygienist would be told ‘okay, I need to do extractions of x number of patients, you to start to do the local anaesthesia on them’” (OHL5). The fact that dentists want to use hygienists to give local anaesthetic shows inconsistency as this is one of the procedures that dentists contest sharing. A hygienist remarked that dentists claim that they are happy for the hygienists’ scope to expand and that dentists see the additions to the hygienists’ scope as a bonus because the hygienists can do more procedures in dentists’ practices: “I even give local for patients who come for

bridges, etc. I just give the local, they do the treatment". (OHP2). Thus, by employing hygienists, dentists profit from the additional procedures hygienists perform which ultimately means bringing in additional income for their practices.

7.3.2 They all flocking to work in urban areas

The concentration of dental professionals in urban areas has become contentious for all dental groups. The dentists see the urban areas as their territory and have been rather vocal about stopping therapists and hygienists from opening practices where they are, as a therapist and dentist mentioned: "therapists and hygienists want to work in areas where there are many practices already" (DTL2) and "if someone wants to do this and they want to set up in the city and going to competition with a dentist well" (DP3). Dentists believe that therapists were introduced specifically for rural dental provision "there's a huge scope for therapists in the, in the rural areas" (DP2). The therapists reported experiencing competition: "if you go there, you're in competition with ten people everyone is choosing to practice, they all flocking to work in urban areas" (DL1), here therapists acknowledge that dental professionals in private practice compete over physical territory. South Africa is one of the most urbanised countries in Africa with around 68% of its population living in urban areas in 2022 (*World Bank Open Data*, 2022). Despite this dentists' attempts to restrict independent therapists and hygienists to rural areas seem misguided in light of this and in light of the projection that South Africa's urbanisation will increase to around 80% by 2050 because of the search for employment and better education. Despite the significant increase in urban numbers, there is a perception that there will not be sufficient work for all in the cities and this is another form of boundary contestation over work.

Another aspect of competing for work is, delivering services to patients in need. These views are consistent with the discussion on government goals in section 7.1.3. The fact that therapists and hygienists perform some procedures (such as local anaesthesia, and restorations) also performed by dentists at a lower fee creates an opportunity for patients to opt for lower-priced care, as an independent oral hygienist indicates "not everybody has the funds for to go to the dentist" (OHP8). Dentists believe that having a differentiated

strategy where professionals' prices vary for the same procedure generates competition for increasing patient numbers. A dentist expressed: "not just say okay dentists do this, let us do this also at a cheaper price. Yeah, that's the most foolish strategy ever" (DP1). Consideration for patients' needs is being misplaced by competition for financial reward. Hygienists see the differences in fees for procedures as an opportunity to increase their patient intake numbers, as an independent hygienist explained: "you can see me far more often than a dentist for the same service" (OHP8). They claim this to be a benefit when marketing to patients who require dental care: "patients have a better chance in getting dental care and it's not as costly" (OHP8).

The perception by therapists and hygienists is that dentists are more concerned about their income. A dentist from the professional board noted: "the motive for the composite filling in that patient is actually driven by finances and availability of the patient to pay for it rather what is best for that patient" (PBD1). These perceptions can be used as motivation for dentists to promote specialised dental care, even when basic care could be provided, which allows them to have access to more patients, and thus greater income.

Dentists contradict themselves, as they are displeased when therapists and hygienists work in independent practice and perform procedures that lie outside of their scope. The dentists' view is that this problem is mainly prompted by therapists, as two lecturers state "they know that they are not allowed to do that […] but we know that most of them are doing it" (DL3); and "therapist is that they almost always do not keep to their scope of function […] and want to almost step into the scope of dentists" (OHL5). They don't seem to be aware or concerned about hygienists overstepping their scope, as the dentist lecturer remarked: "never heard of a hygienist overstepping their scope […] But I have multiple times heard of therapists" (DL1). The dentists asserted that they perform these procedures so that they can survive in private practice: "[they are] things that they are not supposed to do, [but they do them] to keep afloat" (DL3). The dentist noted with some degree of concern that some therapists and hygienists practising independently even pose as dentists:

“is taking patients and doing clinical dentistry on them and posing as a dentist” (DP2), which the dentist considered a form of professional encroachment.

Overstepping of scope has raised competition between dental occupations and has mainly been instigated through financial rivalry, as a professional board hygienist exclaimed: “Greed, money!! They feel that if they observe once or twice that they can do it” (PBD4). Another perspective is that dental professionals’ unethical behaviours have increased the contestations between the three occupations, where one hygienist remarked: “if we all follow our guidelines, there won't a need for this competition” (OHP6).

7.3.3 Standalone hygienists… how many are doing well

Dentists feel that opening a practice independently would be a financial burden and is not viable for hygienists as the setting-up and running costs are high, where a dentist practitioner indicated: “it cost a lot of money to set up a practice” (DP3). They questioned whether these professionals would make it financially. Dentists expressed that hygienists do not have the finances to become successful in independent practice, arguing that: “from a setup point of view doesn't make it financially viable” (DP1), and “you need financial backing in some way” (DP5). Furthermore, therapists also felt that it would not be financially rewarding for hygienists to open private practices because their scope is not broad enough, as a therapist practitioner asked: “What would hygienists be making if she or he has to go into private practice?” (DTP1). There is also the perception by dentists that hygienists currently working independently are not prospering, as a dentist indicated: “standalone dental hygienist, I don't know how many are doing well” (DP1).

Hygienists likewise harboured concerns about the financial aspects of working independently, one independent hygienist stated: “I’m not convinced that you are able to cover all your costs and still make a good living like you would if you worked for a good commission” (OHP1). Another independent hygienist felt that dentists actively discourage hygienists from starting an independent practice, noting that

> He said to me, you know, it's not gonna work out. And I said no, I don't know it's not gonna work. I was actually really nervous at the time, and I thought it was a harsh thing to say. (OHP6)

This has led to many hygienists opting to stay in supervised practice and dentists noting a sluggish uptake of hygienists entering independent practice. A dentist who investigated the number of hygienists that are in independent practice stated: “hygienists in private practice they aren't many. They aren’t many... I mean, at last count, they maybe I think about 60 or 70 registered, but those that actually are. I think it was less than 10” (DP1). Furthermore, hygienists indicate that they receive little support from their professional association concerning their plight of opening independently:

> I would have thought the Oral Hygienist Association of South Africa (OHASA) would also take on, which is why I'm not a member... because Continued Professional Development points I can get anywhere. At this point that is all that OHASA is offering me, they're not coming up with real solutions to these problems. There is not one newsletter, not one article, not one study, not one thing about how difficult it is for hygienists that now have been granted independent practice. (OHP8)

The convenience of being employed by a dentist makes it easy for therapists and hygienists, as a therapist argued that the anxiety of starting up a business is eliminated, “you didn't have any pressure of running a business” (DTP3). There are some instances where hygienists are developing various partnerships to their benefit and to establish themselves in the labour market. For hygienists to set up practice, they go into business partnerships which assists them in ascending into independence without having to take on the responsibilities. One independent hygienist explained how she went about opening a practice:

> I was in a relationship with the dentist that I’m working currently for. So, therefore it was okay for me to take over my practice and take control of that and run that independently because of the nature of our relationship. So, he was sort of kind enough to say, “Well, you know what? If you’re going to look after yourself and you’re going to create your own income, it’s basically less responsibility on me. (OHP1)

Such hygienists are aware that these relations are mainly for financial support which allows them to become profitable, one independent practitioner mentioned that “it was basically just, you know, for financial gain” (OHP1) and another hygienist noted: “my husband and his partner are so kind to let me live here rent-free” (OHP8). With these challenges, it appears that oral hygienists have not readily taken up an independent practice and that they doubt themselves and their ability to open as independent professionals.

7.3.4 Summary of competing for work

The main concern for the dental profession is that the labour market is shrinking as fewer people can afford expensive dental treatment. This is especially the case for dentists as they believe that there is shrinkage of the market for (private) dental services because ‘fewer people can afford expensive dental treatment’. This is even though the demand for dental services in South Africa may not be shrinking, as most of South Africa’s potable water is not fluoridated, which may otherwise reduce the need for basic dental services. Dietary habits in urban centres are worse than rural diets for dental and other diseases, so the demand for dental services has seen an increase in South Africa (Nkambule et al., 2022).

Even though there has been a transfer of basic dental procedures such as scaling and polishing, and preventive resin restorations from dentists to therapists and hygienists, these procedures are regarded as the staple income of dentists and the cause of much of the competition between these occupations. Dentists consider procedures such as diagnosis-making, local anaesthesia, and preventive resin restoratives to lie beyond the scope of other professionals, and thus, consider them to be their sole mandate in the hierarchy of care.

What is noticeable in each subtheme is that the quotations sometimes indicate contestations, while others show none (see Figure 23)

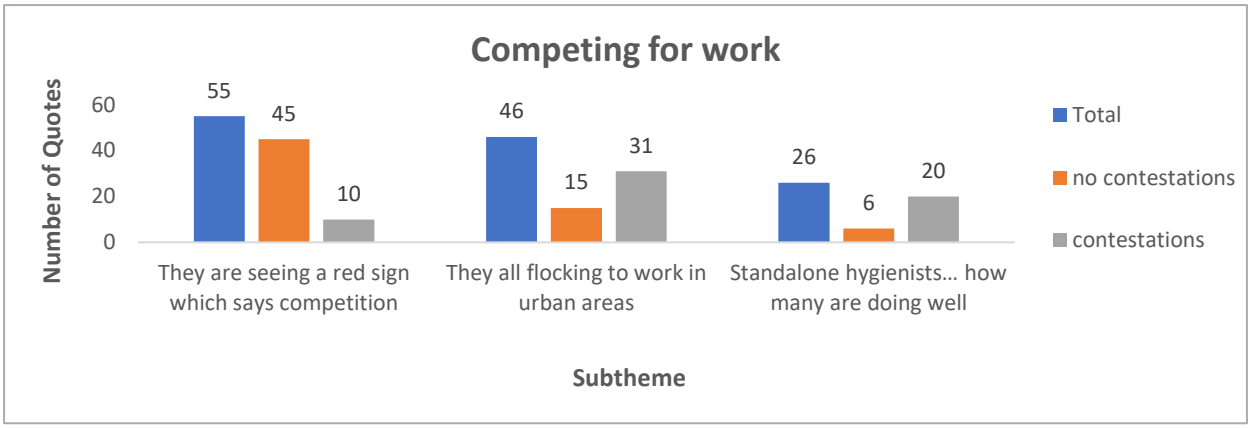


Figure 23 Quotes relating to competing for work

The subtheme "they are seeing a red sign which says competition" has 55 quotes, of which 45 quotes relate to dentists contesting that the other dental occupations are advancing their scope and autonomy. Dental therapists and oral hygienists believe that the basic work ought to be delegated to them, however, dentists are not ready to hand it over as it is infringing on their market for income. The 10 quotes show no contestation of dentists' dominance in practice. This suggests that dentists are threatened by the changes in autonomy (mainly of therapists) and scope, while therapists and hygienists believe that dentists are still dominant.

In the subtheme "they all flocking to work in urban areas" there are 46 quotes. 15 quotes show no contestation, while 31 quotes show contestations mainly by dentists as they don't want therapists and hygienists to move to urban areas. Dentists want to have a monopoly over work in certain areas that preclude therapists and hygienists from these areas.

In the subtheme "standalone hygienists… how many are doing well" there are 26 quotes. Six of these quotes indicate no contestations, and 20 quotes, mainly by dentists express discontent with hygienists going into independent practice. Dentists query whether hygienists can do well in practice, and they are not ready to accept that hygienists could thrive as independent practitioners. Of the 20 quotes, five quotes reveal that hygienists are

weary of going into independent practice without the support of others, which suggests that the hygienists likewise doubt their ability to thrive independently.

7.4 Remuneration for Work

As introduced in the previous section, the three dental groups experience independence differently, which has influenced rivalry in the workplace. This section follows on from that discussion by interrogating the perceptions of these occupations regarding compensation for the work they do. The main argument of this section is that dentists control the income of mid-level workers, but these professionals are starting to query this and want to increase their earnings. This contestation on fees by dentists centres on the basic scope of hygienists and therapists (such as scaling and polishing, which the dentists regard as their bread and butter), and also on new procedures (such as restoratives) which they find difficult to distinguish.

After coding the transcripts, ninety-four (94) observations were made relating to the aggregate dimension of remuneration for work. These observations came from twenty-five (25) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 24.

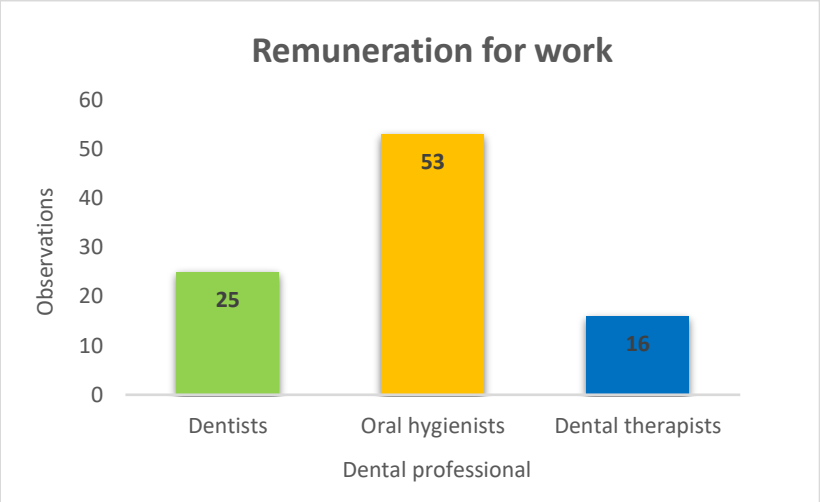


Figure 24 Observations on remuneration for work

Figure 24 illustrates the number of observations taken from each interviewee's remuneration for work. The highest number of observations were drawn from hygienists. Of the ninety-four (94) observations, fifty-three (53) were from hygienists, twenty-five (25) from dentists, and sixteen (16) from therapists.

Table 7.4 in Annexure E illustrates the data structure which indicates how the observations were analysed. A first-order analysis of each observation was carried out which brought to light first-order concepts. These first-order concepts were then grouped through a second-order analysis and four second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: Remuneration for work. The four subthemes to be discussed are:

- Lesser skill you have, the less you can charge – 31 quotes
- Medical aids quite often don't pay – 22 quotes
- Working for a dentist and making him money it's okay – 31 quotes
- Hygienist is the cash cow of the practice – 11 quotes

7.4.1 Lesser skill you have, the less you can charge

There is differentiation regarding the amounts paid for the same procedure performed by different professionals in the dental profession. Dentists feel that if therapists and hygienists are paid the same as themselves for basic procedures then dentists ought to be paid the same for procedures which they have in common with specialists, as one dentist remarks: “they must be able to charge the same as us that's not fair, we must be able to charge the same as specialists” (DP1). This is premised on the fact that the skill sets of dental professionals differ, as a dentist indicated: “the lesser skill you have, the less you can charge and that's the way they keep costs under control. The more you upskill yourself, the more you're entitled to charge for procedures” (DP1). This can be viewed as a vicious cycle where the different occupations believe that they deserve to earn more than those lower in the hierarchy themselves.

Paying dental professionals at different rates has been instigated by external stakeholders such as medical aid insurance companies, where one hygienist exclaimed: “some medical aids would pay a different rate. Reimburse the hygienists differently than the dentists. So, although it is exactly the same code” (OHP1). The therapists and hygienists believe that the medical aid companies are influenced by dentists who look after the interests of dentists, a lecturer explained: “dentists are on those boards generally and so their loyalties will go or what they know will obviously apply to everyone else” (OHL4).

Hygienists and therapists are not in agreement with the lower fees and are discontent about the fee they receive compared to dentists for performing the same procedures, as two therapists described:

> I certainly don't believe that a dentist should get paid more for a class one composite [a type of dental restoration] than a dental therapist” (DTL2), and another therapy practitioner says “I still can't understand how come that I am giving the same you know block as a dentist, and we're not getting paid and we, and obviously we've been taught the very almost the very same thing. (DTP1)

A professional board therapist indicates that therapists feel that the system is discriminatory toward them as the procedures require the same inputs, she stated: “it is unfair because if you look at the time, the effort, the products that you use the equipment that you use it's all the same... And it's definitely I would say unjust” (PBD3).

This situation creates greater perseverance on the part of therapists and hygienists to consult more patients and in return earn more, as a therapist mentioned: “we try and make the same amount as the dentist would with the same patient for the same procedures, we have to work twice as hard” (DTP3). Dentists believe that the funding model creates an environment where therapists and hygienists may cut corners, which will provide them with the same remuneration for dental work “it's only possibly going to force them to use cheaper materials, and maybe see more patients” (DP5). The dentists expressed concern that patients would rather go to a lower fee-charging professional to have the same

procedure done: “it's better to go to a therapist because they're saving 20%. Right. So, that's also a problem for us because now it's kind of becoming a price war type of a thing” (DP1). The dentists indicated that therapists and hygienists ought to not do the procedure because due to the lowered remuneration: “there is a huge financial influence, in why they don't want hygienists to do certain procedures. Because hygienists would do it for less” (DL1).

In one instance, a dentist from the Professional Board for Dentists showed support for equal remuneration for all dental professionals, he said:

> If it’s good and it’s well done, whether it’s done by a hygienist or dentist the remuneration for it should be the same” (PBD1) and “it’s based on weak principles so I don’t, I think remuneration should be based on the quality of the work and it doesn’t matter who does it. (PBD1)

This is reinforced by hygienists who felt that they even perform certain procedures better than dentists do and ought to therefore be paid more for such procedures, where a lecturer noted: “oral hygienists should be paid more because it’s their core work” (DL3). This is not supported by all dentists, as some agreed that in certain practice types, the hygienists ought to be paid less for procedures “hygienist in a medical aid practice does a procedure... are they entitled to less remuneration” (DP4). The concern around remuneration was that there may be a sense of entitlement linked to the hierarchical system within the dental profession.

7.4.2 Medical aids quite often don't pay

Another concern around remuneration is that medical aid companies are not paying therapists and hygienists for the work that they do, they remark, “medical aids are not paying us” (DTP1) and “they don’t pay a hygienist, but they’ll pay a dentist” (OHP4). This is notably the case for hygienists as their fee codes (e.g., for certain restorations) are not recognised by these companies “not a lot of the medical aids are affiliated to our oral hygiene codes” (OHP2) and “medical aids were initially saying that they haven't received the ICD10 of codes from SADA or HPCSA, which wasn't always true” (OHP6). The hygienists,

therefore, opt not to perform certain procedures, and refer to the dentist to do the work instead of doing it themselves, at a loss: “medical aids quite often don't pay... so for me it's the risk versus what you get paid... just give it to the dentist” (OHP8).

The hygienists also question whether they ought to perform certain procedures which are part of their core function, a lecturer questions this, by saying “as an oral hygienist you want to educate, you want to prevent disease, but medical aids won’t pay you for Oral Hygiene Education, so is it worth doing?” (OHL4). Medical aid companies generally do not pay any dental professionals for these. However, hygienists are those affected by this as it would be regarded as their main income stream, while dentists have many other cost incentives that would offset the fee for preventive services such as oral hygiene education.

Hygienists have been questioning the motive behind medical insurance companies not covering their services, as independent hygienists explained: “last year all of a sudden, they decided that they're not going to service hygienists anymore and that their clients need to see dentists only” (OHP6), and have not been forthcoming as to why this is the case: “medical aids doesn't want to contract oral hygienists and they can't give me a reason why” (OHP8). This reveals that hygienists are experiencing major financial setbacks when entering independent practice, making it difficult for them to persist through initial setting-up periods.

7.4.3 Working for a dentist and making him money it's okay

Dentists’ income is determined by the economy where, over the years, the economic outlook for dentists in South Africa has plummeted, as a dentist in practice remarks “when I qualified we rated, I think in the top 10 earners of the country. Today the dentist rate somewhere in 78” (DP3). Despite their profession waning economically, there are numerous ways in which dentists continue to control income for themselves, those they employ, and other independent professionals.

Firstly, the dentists do work that is more profitable to them, several procedures have more expensive rates and thus bring in more money, so dental professionals in independent practice decide to conduct procedures that bring in the greatest income, as a professional board dentist explained:

> … fee for service. So, that tends to take people into a largely curative way because that's what pays the bill", and "tooth whitening, they can do it. So that's a huge money-spinner and a huge income producer. (PBD1)

Therefore, when more expensive procedures are performed, there is a reduction in procedures that do not increase remuneration: "if something is maybe not going to make them (dentists) money, then maybe no" (DP5). The perceptions of these dentists reveal that dentists generally select the types of work they perform based on the returns they are guaranteed for doing them.

Secondly, dentists control the method of payment that patients must make for procedures. They do this according to a cash-based system, and many do not make use of medical aid insurance companies, where a dentist in practice notes "I don't care about scale of benefits. It's got nothing to do with me. I charge what I charge, and my rates are high" (DP3). According to a hygienist, this shows that dentists believe that they can demand fees they choose from patients, which is generally double the scheduled rates: "medical aid rates. I believe that is at least half, if not, well, ja, about half less than what we charge" (OHP1). While this is the case, some patients prefer not to pay cash for services and want to make use of their medical insurance. Therapists and hygienists use this as an opportunity to get access to such patients, where a hygienist noted: "people don't have extra cash to pay upfront and then claim back from the medical aid offer the service of submitting, they're there" (OHP4). This means that hygienists and therapists ultimately acquiesce to doing the same procedures at a lower cost.

Thirdly, hygienists indicated that dentists do the work themselves instead of referring it to other dental professionals: "we even find the dentist prefer to do their own scaling's"

(OHL1) and “it’s not going to influence her salary so we may as well do it ourselves and get the money” (OHP5). This suggests that other occupations have less access to patients for these procedures.

Fourth, hygienists and therapists employed by dentists find that their income is controlled because dentists pay them a set salary or a basic plus commission on whatever work is done, whereas a dentist remarked: “she doesn't have to worry about overheads. My oral hygienist gets a fixed salary every month, and then I pay her commission” (DP5). Dentists feel that they take all the responsibility for the practice and are therefore entitled to the bulk of the remuneration. Therapists and hygienists believe that they are not remunerated fairly for the work that they do. A hygienist indicated: “basic is completely putrid actually, compared to the type of work that I do” (OHP2). This indicates that the hygienist is not happy with the remuneration she receives. She further explains that dentists opt for set salaries instead of paying hygienists a commission, which controls the hygienists’ income: “they’re a bit scared to give me a commission base. Because they know if they have to give me a commission base, I see 80% of their patients so, I’ll probably be walking out with quite a lot of money” (OHP2).

Fifth, dentists control the income of hygienists and therapists through their professional associations. There is a coding system that medical aid insurance companies use to reimburse professionals for their work. This system has become the property of the professional dental association, and this is being queried by the other occupations, a professional board hygienist questions: “who gave SADA the right to be the gate-keepers of the coding?” (PBD4). This means that the Professional Association for dentists decide on the codes that medical aids use for the different dental occupations. Those codes not on the list for a particular occupation will not be paid for by medical aid companies.

The competition is greater in independent practice, where therapists and hygienists have a greater chance of increasing their income, where a hygienist mentions, “I’ve gone from earning R12 000 up to earning R30 000 and now earning up to R100 000” and having the

satisfaction of being self-sufficient: “I’m earning what I’m worth. I don’t have to share” (OHP4). Therapists believe that dentists are concerned that the income is not theirs, as a therapy lecturer mentioned: “working for a dentist and making him money it's okay. But when you are making money as a therapist or hygienist for yourself, it becomes a problem” (DTL2). Hygienists believe that dentists control the hygienist’s income by not allowing their patients to be referred to the independent hygienists’ practices, one independent hygienist stated: “patients who choose to see me at his practice, I see on those two days. I don't think he'd be happy if these patients are coming to me in my own practice” (OHP6). The dentist practitioners and lecturers were more concerned about therapists, and this is attributed to the fact that therapists have established themselves in private practice, where their scope is much more specialised in terms of restorative procedures and extractions. Dentists are also concerned because the therapists were overstepping their scope, and constantly trying to shift their boundaries.

Therapists and hygienists perform less specialised work and promote themselves to an economically lower market. The reasons that mid-level workers continue to work for less income can be ascribed to their wanting to learn from dentists, and because they want a harmonious workplace, where one hygienist indicates: “I feel I still have a lot to learn. So, I’d rather not fight about a salary and keep the peace” (OHP2), they also fear losing their jobs under the employ of dentists: “if the dentist is not happy with what the OH want to earn (is asking for) … then he says… if you don’t like it (the salary) leave” (PBD2). The hygienists believe that dentists are aware that they are unhappy with their working conditions and provide other ways to appease them besides financial rewards. One hygienist mentioned: “they do know that I feel very unappreciated. But they try to keep me happy other ways” (OHP2). These are some of the explanations for therapists and hygienists being unhappy about their financial positions within the dental profession.

7.4.4 Hygienist is the cash cow of the practice

Hygienists are viewed as a passive income in dental practices because dentists do not have to do the work to gain rewards. A professional body hygienist recounted the words of a

dentist she knew: “my hygienist is the cash cow of the practice… she makes enough money to pay my therapist, my hygienist, my assistant and my receptionist” (PBD2). Here, the hygienist is aware that dentists use their hygienists for their financial benefit. The dentists, therefore, support the expansion of scope for hygienists, because this allows hygienists to do more procedures in their practices which will bring in greater income without dentists having to do the work themselves: “dentists are welcoming the extra scope and allowing it, some of the reasons is money” (OHL3). This supports the idea mentioned before that dentists feel that they take the responsibility of ownership of the practice, and are therefore entitled to remuneration.

The idea is that passive income makes hygienists feel exploited by the dentists who employ them. An oral hygiene practitioner noted that “dentists make a lot of money of scale and polishes” (OHP6)**.** This suggests that the hygienists are aware of how much money they are making for the practice, and feel that they are not being remunerated according to the work that they do. The fact that they do not receive remuneration according to the income they bring into the practice is also something of which dentists are aware, as a dentist recalled: “she almost felt like she was taken advantage of, you know, in a certain sense since, you know, creating quite a lot, large number of incomes, but not benefiting” (DP5).

The hygienists are of the view that a vital reason for dentists not supporting independent practice is that it would affect their income negatively: “if they were to lose out on that, I think that in itself is the issue” (OHP6). This suggests that dentists would want to continue having hygienists in their practices to ensure that they get the biggest income from employing them.

7.4.5 Summary of remuneration for work

There is significant evidence from the data that therapists and hygienists feel economically subjugated by dentists and have limited control over their income. This is especially significant when they work under the supervision of a dentist. What is noticeable in each subtheme is that the quotations sometimes indicate contestations, while others show none.

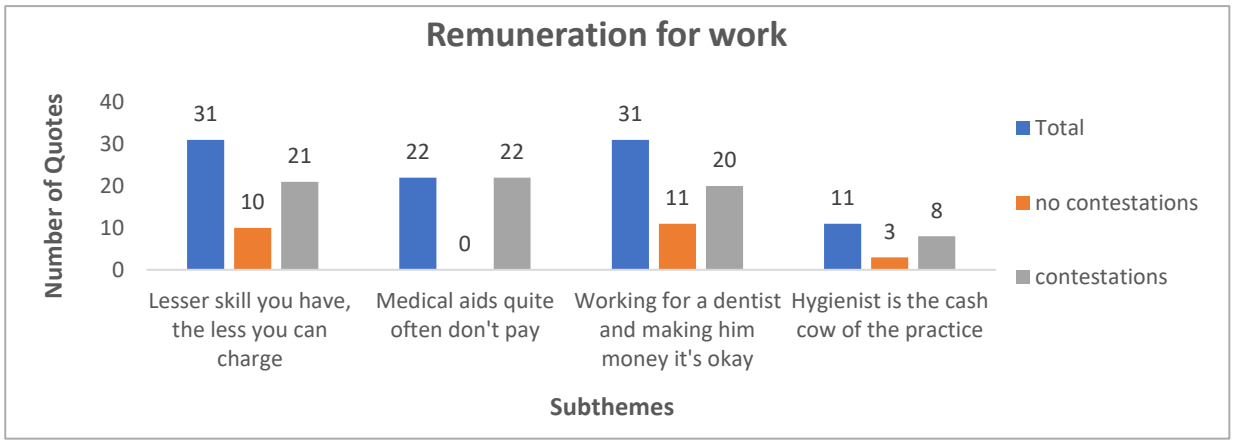


Figure 25 Quotes relating to remuneration for work

The first subtheme “lesser skill you have, the less you can charge” has 31 quotes, where, of these 10 quotes show no contestations, and 21 quotes are mainly by therapists and hygienists that contest that there ought to be different fees for different occupations. This illustrates that there is greater competition because procedures such as restoratives and local anaesthesia have different fees for the three groups. The differentiation of remuneration reinforces hierarchy because dentists earn more than therapists and hygienists. This is mainly because dentists are in control of mid-level dental professionals' remuneration, for example, by paying them a set salary and not a commission and in this way, they influence the income of therapists and hygienists.

In the second subtheme, “medical aids quite often don't pay” there are 22 quotes. All the quotes express contestations about not getting paid for services rendered. Many of these quotes are from oral hygienists who object to the fact that medical aid companies are not paying them for the work that they do. This is a concern, as it inhibits their ability to succeed in independent practice.

The third subtheme “working for a dentist and making him money it's okay” has 31 quotes, where 11 quotes show no contestations and in 20 quotes mainly the hygienists express dissatisfaction regarding how their income is determined by dentists. The hygienists are aware that their economic development is restricted by dentists and find it difficult to break out of the cycle of dependence they have on them.

In the fourth subtheme, “hygienist is the cash cow of the practice” there are 11 quotes, of these there are three quotes that reveal no contestations and eight quotes that show contestation to being a passive income to dentists. This suggests that hygienists feel that they are exploited in the workplace and are not compensated satisfactorily for the work that they undertake. They feel that dentists take advantage of having hygienists in their practices to benefit themselves to their overall disadvantage, and will continue to dominate independent practice for exploitative purposes.

7.5 Conclusion of Work Practices

In this chapter, I examined the work practices within the dental profession, specifically of oral hygienists, and their response to policy amendments. The discussion highlights that mid-level dental professionals face several challenges in the workplace. Considering their role, their uptake of the new scope of practice, and control over their work, it gives an account of how hygienists’ advancement is seen within the dental profession.

One concern is that hygienists have not experienced going into independent practice on a large scale, where there is still limited professional recognition for hygienists who are going into independent practice. The legislation does not allow practising hygienists full control of their clinical duties because dentists prescribe certain procedures to them. This allows dentists to control how this transition occurs and places hygienists in a situation where they don’t have the autonomy they desire. However, hygienists with higher qualifications appear to be taking more control of their work.

The other concern that dentists have is that hygienists and therapists are taking away work and income from them. The dentist practitioners and lecturers were more concerned about therapists in this case, and this was attributed to the fact that therapists have established themselves in private practice, where their scope is much more specialised in terms of

restorative procedures and extractions. Dentists are concerned because the therapists are overstepping their scope, by constantly trying to shift the boundaries of their mandate.

Dentists indicate that they are not concerned about hygienists' independence and are invested in their prosperity. However, they know that they will retain hygienists in their employ and assume that hygienists would not (be able to) plunge into independent practice. Even though dentists proclaim to support independence for hygienists, this is inconsistent with their view that hygienists' autonomy is a threat to the profession as well as with the reasons dentists mention for hygienists not being able to support independent practice. The hygienists are mainly employed under the supervision of dentists and are afraid to go into independent practice and take on the significant financial risk that this implies. Hygienists are aware that they don't have the specialised scope which will not procure sufficient revenue to cover their overheads. The dentists, therefore, continue monopolising oral hygienists using them as a form of passive income.

The claims which arise from this chapter are as follows: first, the division of labour of the three dental groups has not shifted from their original procedures, despite changes to legislation for hygienists. Second, some of the procedures (e.g., local anaesthesia, preventive resin restorations) in the hygienists' expanded scope have not been readily accepted by both dentists and therapists. The hygienist's responses to this suggest that they want to resist, yet they seem hesitant to see the new scope as part of their work. Third, increasing competition over access to patients is viewed as a threat by dentists. Independent practice for therapists and hygienists has only brought about further competition between the three occupations. Fourth, dentists dominate work and inhibit therapists and hygienists from accessing it. Such control by dentists hinders the economic development of both hygienists and therapists. In other words, the nature of practices—an economic arrangement—is a more powerful force on the division of labour than the official prescription of scope. Fifth, dentists' control of remuneration influences the income of therapists and hygienists, especially those working under supervision. The dentists' remuneration is also much greater than that of therapists and hygienists, where despite this, dentists are concerned that hygienists and therapists are taking their away work and

income Finally, there appears to be an inconsistency among dentists when they allow hygienists to perform certain procedures in practice under their supervision, however, they don't want hygienists to do these procedures when they work autonomously.

The oral hygiene occupation is shaped by work challenges leading to two issues. First, oral hygienists are not taking up contested procedures such as diagnosis-making, local anaesthesia, and preventive resin restorations, and do not feel prepared to do so. Dentists are contesting that these procedures be performed by independent hygienists. Second, in addition to hygienists not taking up the entire expanded scope, the fact that dentists oppose independent practice changes to legislation related to autonomy has not resulted in a dramatic increase in independent private practice for oral hygienists in South Africa. These two concerns contribute to the shifting of boundaries and affect the relations between the three dental groups, as well as the perceived advancement of this occupation.

CHAPTER 8

FINDINGS: DENTAL EDUCATION AND TRAINING IN SOUTH AFRICA

8. Synopsis of Chapter 8

This chapter is the third of the findings chapters and outlines the data which reflect on the education and training environment of the three dental occupations. This is done in two parts; First, it outlines various dental stakeholders' perceptions of education and training. Second, it examines how curriculum knowledge transitions from theory to practice for contested procedures. These findings are in line with the fourth sub-question: How are dental curricula, preparing learners for shared procedures (e.g., local anaesthesia, preventive resin restorations)?

The data illuminate how perceptions of the education and training of dentists, oral hygienists, and dental therapists can be contrasted. It specifically examines how the changes in hygienists' scope of practice have been perceived in the education and training arena. Figure 1 below shows three themes that emanate from the main theme "dental education and training". The first theme is broadly around the relations in dental schools and reveals a lack of integration of students from different occupations and the prioritization of dentistry students which causes mistrust within the dental profession. The second theme relates to how oral hygienists' scope is manipulated during their training and the influence this has on their professional roles and what occurs in practice. The third theme focuses on dental curricula and knowledge and shows the transitions in types of knowledge when learning theoretical concepts and practical skills.

This chapter portrays divergences within the dental training environment, it shows that despite legislative changes, oral hygiene curricula are not aligned with the new scope of practice and opportunities for advancement are minimal for mid-level dental occupations. Numerous challenges around curricula and the knowledge valued by the various dental occupations are highlighted. In the main, it emphasises that mid-level occupation training

receives little recognition within dental schools which stunts the development of these occupations.

In the sections to follow, the findings are presented in the three themes as outlined above and each theme is further broken down into several subthemes as they emerged from the data. To explain the education and training evident within the dental profession the data came from 284 quotations, represented in three themes, across eleven subthemes (see Figure 26).

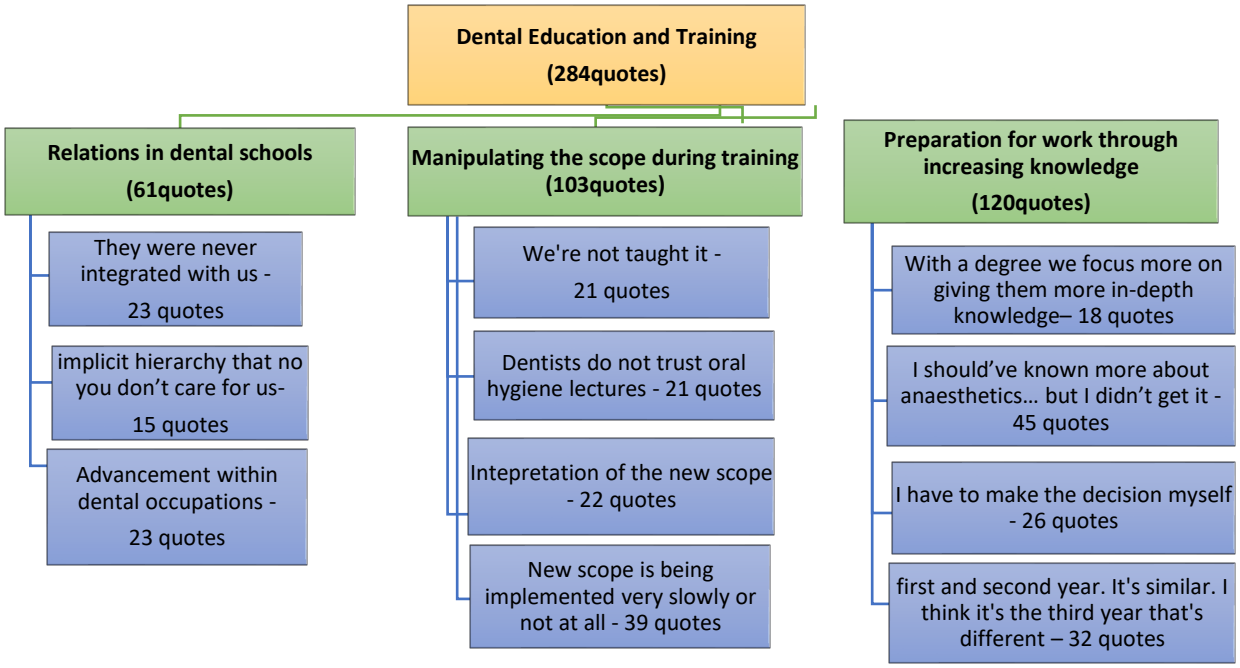


Figure 26 Illustration of themes and subthemes for dental education and training

The chapter emphasises the bearing that education and training have on the occupational boundaries of dental groups. The discussion specifically outlines perceptions about oral hygienists' training and highlights the lack of trust among dental occupations. Furthermore, it shows how interactions in training institutions often initiate and perpetuate boundaries between dental occupations, but also from within specific occupations such as oral hygiene. The main argument of the chapter is that the education and training environment has a bearing on relations between dental occupations and shapes the performance of tasks for practice.

8.1 Relations in Dental Schools

Perceptions about the education and training for the three dental occupations highlight how relationships develop between dentistry and mid-level dental students. It shows the lack of integration of the different student groups which emphasises various factors in dental schools which perpetuate poor communication and reinforce hierarchies in terms of who controls knowledge. Furthermore, it shows limited pathways and support for mid-level dental students who want to transition to dentistry. These are crucial points of discussion to keep in mind as I attempt to describe the relations between the various stakeholders in the dental education and training environment.

The main argument of this section is that the unsatisfactory relations in dental schools further entrench a lack of trust for mid-level dental occupations such as oral hygiene. After coding the transcripts, sixty-one (61) observations were made relating to the aggregate dimension of the relations in dental schools. These observations came from nineteen (19) interviewees, a representation of the number of observations for the different interviewees can be seen in the figure below.

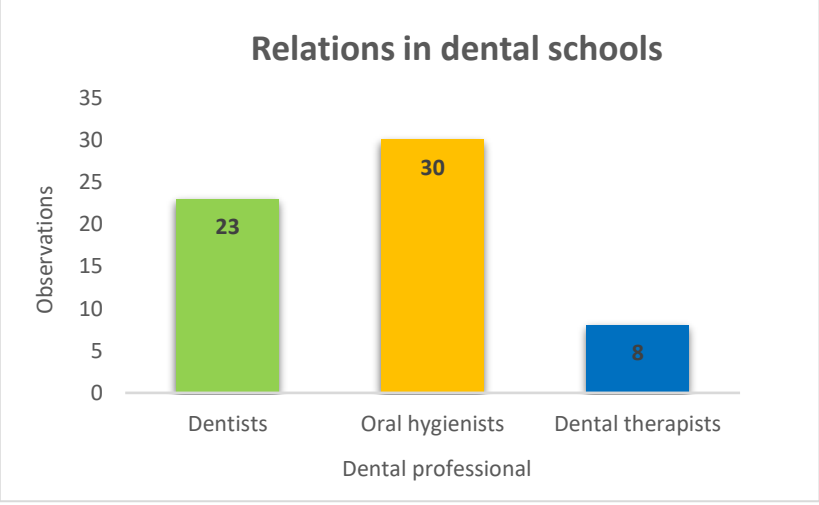


Figure 27 Observations of the relations in dental schools

Figure 27 illustrates the number of observations taken from each interviewee for the theme of the relations in dental schools. The highest number of observations were drawn from

dentists. Of the sixty-one (61) observations, thirty (30) were from hygienists, twenty-three (23) were from dentists, and eight (8) were from therapists.

Table 8.1 in Annexure E illustrates how the observations were analysed. A first-order analysis of each observation was carried out which brought to light first-order concepts. These first-order concepts were grouped through a second-order analysis and three second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: The relations in dental schools. The three subthemes identified which are discussed below are:

- They were never integrated with us - 23 quotes
- Implicit hierarchy that no you don't care for us – 15 quotes
- Advancement within dental occupations - 23 quotes

8.1.1 They were never integrated with us

Overall perceptions overwhelmingly confirm that students who study for the three dental occupations have limited interaction with each other during their training, this is despite them working in the same physical buildings. The mid-level dental professionals describe that their training occurs separately, and one therapy lecturer noted: "therapists are trained on their own" (DTL1), an oral hygiene practitioner mentioned: "they were never integrated with us at varsity" (OHP2*).* Participants seem to suggest students do not get sufficient opportunities to be exposed to each other and the type of work each is allowed to do.

Lecturers are concerned about how students are trained, and this is problematic for the dental profession. A dentist lecturer stated: "the challenge is that the dental school has to develop the concept of team working into interprofessional education and of course, that is a weakness in this school" (DL2). Here this lecturer points to an absence of teamwork in dental training. An oral hygiene practitioner noted: "that's where that misconception starts about our scope in the industry when it comes to dentists, and I think that's why they misuse and abuse us like that" (OHP2). The lack of student interaction is seen as a key contributor to the misinterpretations around the scope, the poor communication and the

disrespect encountered by mid-level occupations. The fact that training is siloed is regarded as a leading factor in the poor relations and mistrust in the dental profession.

The views that there is limited integration and poor communication between students during teaching have elevated numerous calls for the training of the three dental occupations to be more integrated. As one oral hygiene lecturer described:

> it starts in academia, these three programmes dental therapy, oral hygiene and dentistry, we see each other as different entities, we are teaching them in silos, yet we expect them out there to be in a team. Definitely, out there I'm still seeing them working in silos, if we were to break it we have to start with teaching these three programmes are trained together, and engaging with each other (OHL3)

The account by the lecturer above amplifies the lack of student integration within the dental profession and shows that lecturers are aware of the lack of teamwork which is extended from training into the workplace. Another lecturer and board member mentioned: "I hear comments from dentists, dentistry students, 'we can do much more than the hygienists can do'… they don't realise that you have specific roles to play, so until we have more integration" (HPCSA1). The main concern about the limited integration of students in dental schools is that students do not get to know each others' professional roles and the specified scope that each may perform.

Some universities try to encourage a collaborative environment. At the same university where the oral hygiene lecturer indicates the training occurs in silos, collaboration is difficult to uphold. A hygienist lecturer/professional board member described: "one of our very first lectures with dentistry students when they enter here, we put the scopes of practice up… these are who your team members are, this is what they can do and this is how you can work together" (HPCSA1). This shows that there are attempts to introduce different dental occupations to each other early in their training. The discussion shows that training institutions have not found ways to resolve the problem of poor student integration. At the dentistry board level, this is viewed as a concern too, a professional board dentist noted "As far as the training goes, unfortunately, I think this is individual driven. And these are teams. We expect them to operate as teams after training. But our training is still happening in silos

in most instances (PBD1). The same dentist pleads for answers to the following questions to solve the motives for this, he asked: “constraints for interdisciplinary training... Is it egos? Is it territorial? Afraid that someone may dominate the area or so?” (PBD1). These questions highlight that there could be several reasons for the limited student integration at dental schools. One reason drawn from here is that there may be a need to maintain the dominance of one dental occupation over another.

The lack of integration of students maintains and possibly reinforces the boundaries between dental occupations. Teaching and learning of dental occupations occur in an environment that promotes poor communication and mistrust within the dental profession which filters into practice.

8.1.2 implicit hierarchy that no you don’t care for us

In addition to not being integrated during training, mid-level dental students and lecturers feel that they are not prioritised at dental schools. There are several reasons why mid-level dental students feel this way.

First, mid-level dental students believe that they are treated as inferior by the lecturers in comparison to how dentistry students are indulged. A dentist lecturer mentioned that “there is a perception, on the side of the students, a built-in implicit hierarchy that no you don’t care for us” (DL2). The dental students and academic staff handle oral hygiene and dental therapy students as sub-standard students, and this is identified as a problem by the professional boards upon accreditation. A therapist on the professional board noted: “they were being looked at upon by the dental students [...] They felt belittled [...] And lecturers we're not doing anything” (PBD3). This shows that hierarchies are shaped early on during training, that dentists’ training is prioritised over the training offered to mid-level dental occupations, and that lecturers are aware of this.

Second, clinical training is not the same for dentistry, dental therapy, and oral hygiene students. Oral hygienists do not feel prioritised during their training because there are limited numbers of patients that students can work on. The insufficiency of patients means

that several procedures are not completed during training. An oral hygiene lecturer mentioned: “soft linings[34] our students, not one of them go out here having done it honestly” (OHL1). This induces an environment where students have to compete with each other to get access to patients. The same lecturer added that “whoever grabs the patient first is lucky and they will do it... so it is difficult in getting patients for some of these procedures” (OHL1). Another oral hygiene lecturer supports the concern that the hygiene students get limited access to patients, she noted that: “ soft linings… our students don’t even get to do one case, so how can they be classified as competent in performing that procedure? If they have only done one in a demo? I do think that other professions out there could query and are querying the competency of the scope” (OHL2). This lecturer suggests that this is a reason why hygienists' clinical abilities are being challenged.

Another example of mid-level students' skewed allocation of patients in the clinics is from a professional board therapist. She verifies that the limited allocation of patients to mid-level dental students is common practice in many universities, “students could complain about the fact that the dentistry students got preference over the therapy and hygiene students for patients in terms of clinical work. I know for a fact that that came up as a huge problem” (PBD3). The fact that mid-level dental students have less time doing practical training, means that they have less exposure to tutors, and performing fewer procedures could make them believe that they are second-rate students. This places practitioners from one occupation in a better position to improve their clinical abilities compared to the other. This could be another trigger underpinning the insecurities that develop about their abilities to perform certain procedures which may overflow into what occurs in practice.

This perception that dental students are given preference in clinical settings over hygienists and therapists, is noticed by a dentistry lecturer:

> Dental Therapists would always argue that we don’t treat them the same as the dental students, and when you ask them why, they say “no, the tutors don’t spend enough time with us”, then when you check the tutors, they say “no, we spend enough time” but there

[34] *Soft tissue linings is a procedure that was added into the 2000 scope. it is a prosthodontic procedure where dentures are lined with a special material to improve patien comfort.*

> are certain procedures that the BDS students do which need me as a tutor to spend more chairside time. Sometimes they make a mess of it and then I take over. (DL2)

At face value, the statement shows that mid-level dental students complain because they are not exposed to the same amount of practical training as dental students. However, it also shows that the dentist lecturer admits to spending more time with dentistry students when they have difficulties in the clinic.

Third is that generally the number of dentists trained is prioritised over that of mid-level dental occupations. This is reflected in the intake numbers of students into dental programs. Despite many calls for an increase in the number of mid-level dental practitioners, there have been very few shifts to increase them. An oral hygiene lecturer is concerned that "they've been saying for years and years they must train more oral hygienists. But yet, in our institution, two or three years ago, they decided no they're going to take in 20 more dental students" (OHL1). These concerns are echoed by an oral hygienist within the professional board highlighting that

> one institution didn't even have OH applicants, one year they did not even take in anybody… those are some of the concerns, are they going to be shutting down OH? What is the situation? What did you do to revive it? How did you advertise? It's one of your programmes, you are running that programme, what do you do to market it, what do you do to attract people to come in? (HPCSA1)

This perceived lack of support for mid-level dental training and the prioritisation of training dentistry students has caused mid-level dental professionals to feel that the training for these occupations is being side-lined. The oral hygiene lecturers in particular feel that the training programs of oral hygienists are under threat of being terminated and that the future of oral hygiene is at risk.

8.1.3 Advancement within the dental profession

The investigation of the advancement within the dental profession raises several questions about relations in dental schools. First, transitioning from one qualification to another is a difficult undertaking for students. Opportunities for entry into dentistry are limited,

therefore students use dental therapy and oral hygiene qualifications as a catalyst into dentistry. The interests of mid-level students are mainly to enter the dentistry degree and they use e.g. the oral hygiene degree to give them access. An oral hygiene lecturer explained: “two out of the five from the beginning would say, I didn't get selected for dentistry... I will go and do dentistry after oral hygiene” (OHL1). Moreover, she noted that “from last year’s 3rd years, one is now studying dentistry, one medicine, and another one veterinary science, just to give you an idea of how many” (OHL1). Another oral hygiene lecturer added: “most if not all our Oral Hygiene students come in wanting to be dentists” (OHL4). These oral hygiene lecturers are concerned about the intentions of students who enter the program. The transition from mid-level dental occupations into dentistry is a common perception as dentists, therapists and hygienists share the same sentiments. A dental therapist at the board level described this as follows: “qualifying as hygienists because they can’t get into the dental programme… or they using it (BOH qualification) as a bridging course” (PBD2). This shows that the oral hygiene students appear to have little interest in the program they commence with, as they seek to leave the occupation once they are done. This decreases the number of practitioners entering the field, thus creating a constant struggle by hygienists to advance themselves.

Second, the oral hygiene lecturers feel that often the top students qualifying within their programmes, defer to dentistry. A professional board hygienist and lecturer indicated that: “every year there is an Oral Hygienist that is in the Dentistry group, this year was phenomenal, there were 4-5 students and it's by choice because they feel that they can do more.” (HPCSA1). Another concern is that lecturers from mid-level occupations support students who want to enter the dentistry programme. A therapist from the professional board mentioned: “it was quite sad to see because we have raised these issues with the, with the lecturers and they were encouraging therapy students and hygiene students to change to dentistry and that was where we had a problem” (PBD3). This reveals that mid-level dental occupations are losing the best-qualified students to dentistry programs and in so further weakening these occupations.

Third, an additional point about transitioning from a mid-level dental qualification into dentistry is that students must start in the first year again, as their curricula are not aligned with dentistry programs. A dentistry lecturer stated:

> more and more what we are seeing at this dental school, because we train all three… is that these cadres particularly the Dental Therapists [especially those who are above average] they tend to apply to do dentistry, but the two programmes don't really talk to each other. So, after the three years of dental therapy, the student applies for dentistry and will get one or two credits of modules but start from first year. (DL2)

This means that there is no direct pathway from oral hygiene or dental therapy into a dentistry curriculum. However, in mid-level dental occupations, the curricula of dental therapy and oral hygiene are similar in the first and second years of study as described by a dental therapy lecturer, "they attend the same lectures, and the oral health clinical practice is the same for therapists and hygienists, but the final year is we change. And I think with the preclinical training in restorative it's different, but the rest is, is the same. (DTL2). The fact that the training is similar has allowed oral hygienists to transition into the third year of the dental therapy curriculum and this would then give them a better chance to get access to dentistry. Despite the extended pathway from oral hygiene into dental therapy and then into dentistry, there are still difficulties for students to transition into the dentistry programme. A dentist lecturer explained the process of student selection for the dentistry program at his dental school:

> the policy of the university is that we give first preference to the new matriculants, and if you are a Dental Therapist, you are low down [for selection] and we don't go beyond intake of 40 students, we are capped by the HPCSA. So, we take the high-flyers from matric, then those with BSc, the Dental Therapists and sometimes Oral Hygienists... but mostly Dental Therapists are pushing to get in hence this cadre contestation. (DL2)

This explanation of the selection criteria confirms the limited pathways into a dentistry programme for mid-level occupations, which raises the struggle among students to gain access to dentistry.

Fourth, the advancement in the dental profession is also related to the vertical articulation options to which an occupation has access. In dentistry, there are multiple means for advancement after the completion of the dentistry degree. This includes dental specialities and other postgraduate pathways such as the MDENT and doing a Ph.D. For mid-level dental students to advance they have to do an Honors programme in a different area/field of study. A dental therapy lecturer described the difficulties that current students have when they want to pursue postgraduate studies:

> the whole story of them going into a master's program and a Ph.D. program because they have a three-year degree. A lot of them struggle, and they've got to go and do diplomas and before they accepted into a masters and a PhD program so that's where there's a bit of frustration at the moment, because they can't get straight into a master's program with the three-year degree program. (DTL2)

This shows that dental therapy and oral hygiene curricula do not allow for access to postgraduate studies within their fields and therefore lose graduates more readily to other fields of practice.

Fifth, a challenge which withholds the advancement of mid-level dental students is that there is little support from the Committee of Dental Deans[35] to extend the three-year degree to a four-year professional degree. This is seen in this quote from a lecturer on the professional board:

> moving from a two-year to a three-year programme then it's okay… but if you are offering a 3year programme and you are squashing everything into it… now you want to start offering a 4year programme is that feasible? So, they are saying don't keep loading the scope of practice… you were training first for 2 years, and the 2year programme couldn't cope with all the things that needed to be done… and you were not doing it justice, then you moved to a three-year programme and you are adding to the scope again, so the curriculum is already jam-packed, and you are not only doing clinical training, you are doing other soft skills, research skills, oral health promotion… those are huge areas for an oral hygienist… so that was a major complaint from the Deans. (HPCSA1)

[35] *The Committee of Dental Deans is made of the five Deans from each of the universities providing dental training.*

This perception of mid-level dental training suggests concerns that the curriculum is already overloaded. It could also mean that there is a perception that important stakeholders such as dental deans are not supporting the professionalisation of oral hygienists. Even though hygienists may want to advance, this perception is that there is little chance that a professional degree is on the cards for hygienists.

Sixth, the problem of limited advancement for mid-level dental occupations is compounded by the fact that there is indecision about which pathways to develop for the occupation. A hygienist indicated:

> not sure about what to put in a curriculum... honours, for instance, the difference in the curriculum for instance between honours and a masters, because they because it's a three-year degree, they will first have to go the route of honours and then Master's., it can't be like go into masters directly [...] And then, the will to do it, yah we'll do it [...] but nothing! (OHL1)

This displays a lack of direction, impetus, and commitment by oral hygiene lecturers to advance the occupation. This highlights that the occupation is being stifled from within, by the very people that are supposed to advocate for the advancement of the occupation through education and training.

To add another aspect that stalls advancement is the belief that oral hygiene practitioners are not advocating to develop themselves. An oral hygiene lecturer stated that: "from the first group qualified in 2013 so it's five years now and we've never even had an inquiry even. This is being offered now can I come and do an honors" (OHL1). This shows that practitioners are not requesting further qualifications within the field of practice. Consequently, neither the practitioners nor the lecturers in oral hygiene are advocating for the development of further qualifications.

Finally, the challenge to hindering the advancement of mid-level dental occupations as separate entities is that there is a drive to merge the two mid-level dental occupations and their curricula. A dentist lecturer mentioned: "there isn't enough of a good evidence base for dental therapy. I personally believe that the two can be merged… whatever you would

call them… an oral therapist… with a common scope of practice, and if you are creative, you can run a curriculum that allows for one could go and practise, then come back to finish either BChD or BDS… but there are a lot of people that are anti that kind of thinking" (DL2).

This point by a dentistry lecturer comes across as an attempt to streamline mid-level dental occupations and create a pathway into dentistry. However, the question which arises is whether this is dentists' attempts to dispose of dental therapy as an occupation because of their general beliefs about dental therapy being a threat to them. Or to be able to control one group of mid-level dental practitioners and safeguard the professional boundaries of dentists.

The above discussion suggests that there is limited room for advancement within the education and training arena for mid-level dental occupations. Oral hygienists have multiple concerns about their continued existence within the dental profession. Their vulnerability makes it difficult for relations to thrive between dental occupations.

8.1.4 Summary of the relations in dental schools

It is vital to note that the dental school environment does not lend itself to fostering an atmosphere for teamwork to flourish. What is noticeable in each subtheme is that the quotations mainly indicate contestations about the poor relations in dental schools, while others show very little, see Figure 28.

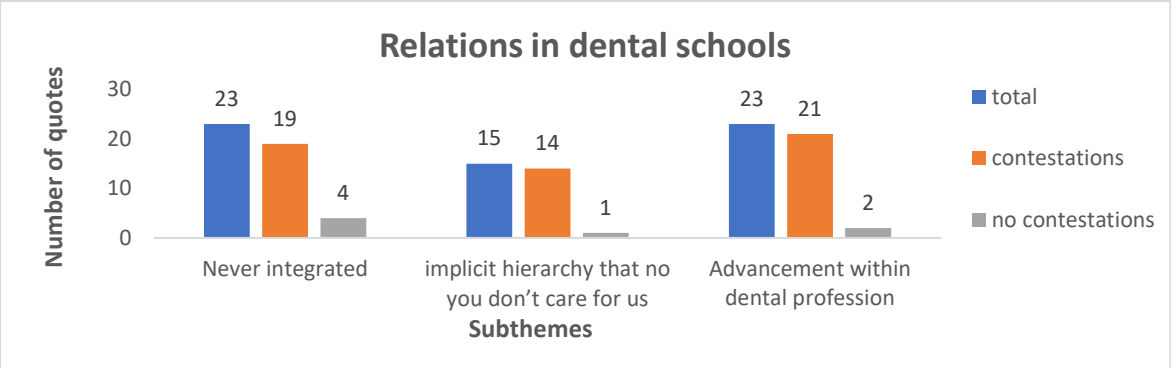


Figure 28 Quotes about the relations in dental schools

The first subtheme ‘they were never integrated with us’ has 23 quotes, of which 19 quotes show no contestations and agree that dental training is separate. Four quotes refer to attempts to integrate students within their dental school. The quotes suggest an overwhelming agreement that siloed dental training is problematic as it promotes poor communication and mistrust within the dental profession. This indicates that the lack of integration of students maintains and possibly reinforces the boundaries between dental occupations.

The second subtheme ‘prioritising students’ has 15 quotes. These 14 quotes show that participants agree that mid-level dental are not being prioritised. One quote contested this and indicated that dentistry students were not prioritised over mid-level students. This subtheme also suggests that mid-level dental students feel inferior to dentistry students, and this produces poor relations and mistrust between these students.

The third subtheme ‘advancement within occupations’ has 23 quotes, of which 21 quotes are contestations about mid-level dental students wanting to transition into dentistry. This is mainly because of the difficulties students have to advance within the dental profession. There are two quotes where there are no contestations as participants agree that students ought to have the opportunity to transition. This shows that mid-level dental students, in particular, those studying oral hygiene constantly endeavour to advance within the dental profession.

The evidence from this section highlights that mid-level dental students feel vulnerable in terms of their professional advancement as an occupation which emanates from how they are dealt with by lecturers and fellow students. In the long run, there is a lack of communication within the education and training arena which leads to mistrust between dental occupations. The lack of integration, mistrust, poor communication and the limited means for advancement all affect the relationships within the dental profession. Furthermore, these issues aid in shaping and maintaining the boundaries of the different occupational groups.

8.2 Manipulating the Scope during Training

Oral hygienists' scope is manipulated during their training and influences their professional roles and what occurs in practice. This section captures perceptions about the teaching of the new scope of practice for oral hygienists and how teaching is controlled at various dental schools. The oral hygienists' scope has been queried and there are controls on what knowledge is taught. This discussion points to the interpretation of scope from the regulations and considers reasons for the poor implementation of the scope into the curriculum. These are crucial points of discussion, as they illustrate how lecturers from different occupations play a role in what knowledge is transferred, what the students are taught, and thus who controls the type of education and training a student receives. This ultimately influences the type of practitioner sent into practice and how they use their discretion in the workplace.

The main argument of this section is that transmitting the expanded scope into curricula is multifaceted and education and training may not be aligned with the latest changes in scope. After coding the transcripts, one hundred and three (103) observations were made relating to the aggregate dimension of linking scope to the curriculum. These observations came from nineteen (19) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 29 below.

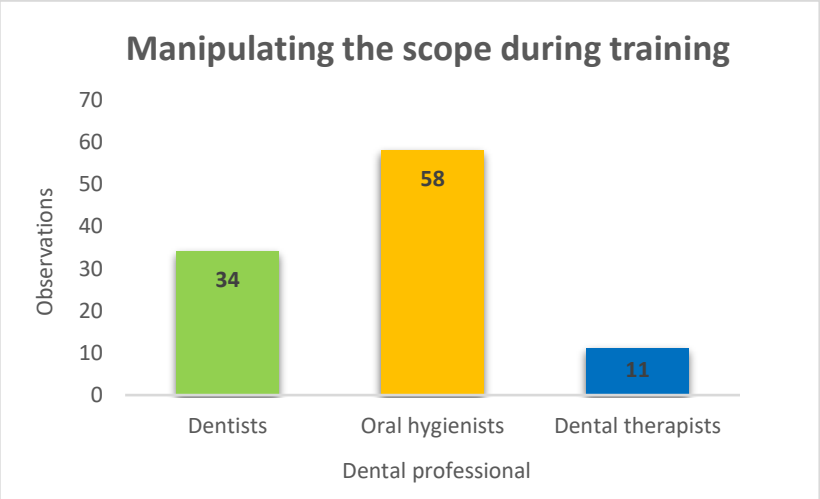


Figure 29 Observations of manipulating the scope during training

The figure illustrates the number of observations taken from each interviewee for the theme of manipulating the scope during training. The highest number of observations were drawn from dentists. Of the one hundred and three (103) observations, fifty-eight (58) were from hygienists, thirty-four (34) were from dentists, and eleven (11) were from therapists.

Table 8.1 in Annexure E illustrates how the observations were analysed. A first-order analysis of each observation was carried out which brought to light first-order concepts. These first-order concepts were grouped through a second-order analysis and four second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: manipulating the scope during training. The four subthemes identified which are discussed below are:

- We're not taught it - 21 quotes
- Dentists do not trust oral hygiene lecturers' knowledge – 21 quotes
- Interpretation of the new scope - 22 quotes
- Expanded scope is being implemented slowly or not at all - 39 quotes

8.2.1 We're not taught it

The distribution of human resources that teaches mid-level dental students slants towards dentists. This has been the case since the start of training for these occupations. Most of the expanded scope for oral hygienists is taught mainly by dentists, even though there are lecturers in positions in dental therapy and oral hygiene who could do this. There are several reasons why this is still the case despite the HPCSA calling for like-to-train-like.

One concern is, not sufficient mid-level dental professionals in the academic arena, as seen by a therapist noted: "they are trained by dentists because we don't have therapy lecturers" (DTL1). This appears to be shifting, as mid-level dental professionals are getting more involved in academia and training within their occupations, a therapy lecturer stated: "10 years ago, we had dentist training therapists, it has now changed, where we have dental therapists training dental therapists, and we have hygienists training hygienists. So, on our establishment, we have more dental therapists, part-time and full-time training dental

therapists”(DTL2). This shows that the shift to having mid-level dental occupations teaching students from within their ranks is slow.

Further, mid-level dental students are trained in an environment where there are limited leaders from within these occupations. A dentist lecturer explained:

> we do not have Dental Therapy as a department, so meaning there is no one who is a dental therapist who is running with the dental therapy curriculum so that it can be run properly. From long ago it has been run by dentists and right now, I know it’s under community dentistry. But there is a push for this so that therapists and hygienists can have their own leg to stand on. Dental therapy and oral hygiene students feel that this is the reason why they feel that they are not taken care of as a profession on its own. It’s like they are a tentacle of dentistry. (DL3)

The quote shows that the lack of academic leaders within mid-level dental occupations makes students feel subordinate to dentists. It also instigates the subservience of mid-level dental students, and they feel they are taken for granted. The quote highlights dentist lecturers' perceptions, that there is weak or no leadership within mid-level occupations which influences the identities of students. Another dentist lecturer describes the setting in their dental school where there is no dedicated department for mid-level dental occupations. He stated that: “HPCSA are insisting that there ought to be a standalone department training dental therapy and oral hygiene, with a head for the purposes of role-modelling… for the unwritten curriculum” (DL2). Here the importance of having leadership in mid-level occupations is emphasised to encourage students to be professional. Yet there is only one dedicated oral hygiene department out of five universities in the country headed by oral hygiene lecturers. At other universities, oral hygiene lecturers are subsumed by other departments with dentists in charge of them.

The lack of mid-level dental lecturers and their weak leadership is exacerbated by perceptions of dentists’ position on teaching mid-level dental students. There is a belief that when dentists teach mid-level students, they are not keen to take this on. Oral hygiene lecturers claim that dentists are not aware of their expanded scope and do not think that hygienists ought to be performing certain procedures. Dentist lecturers indicated: “I’m not

aware that they were giving local anaesthesia," (DL4) and another noted: "local anaesthesia I didn't know that... my understanding was that this only came into effect from 2013" (DL1). Dentists appear to be oblivious to some of the procedures included in the scope. This supports the claim made in Chapter 6 that dentists are unaware of the expanded scope for hygienists.

Practising hygienists also relate to dentist lecturers' reluctance to teach hygienists. One hygienist in practice explained: "I did once or twice have vibes from guest lecturers, that like, we had one specialist who when he would lecture us, it was very clear that he didn't think much of oral hygienists, and he was pretty bummed that he had to lecture us. (OHP5). Another practising hygienist exclaimed: "we're suppressed by the dentists, and we're not taught it at the university level" (OHP4). These statements show the experiences of hygienists while they were in training, which confirms that dentists are not eager to teach and that they look down upon hygienists as practitioners.

Oral hygiene lecturers' perceptions are that the dentists lecturing to oral hygiene students don't understand the scope of hygienists and feel coerced into teaching some of the new procedures. An oral hygiene lecturer indicated that: "feedback that we've had, it's like 'oh, we didn't realise that hygienists must do this as well, so now I've been instructed to teach!' so it does come across as if it's a bit of a chore for them to do it, and they will do it also in a very minimalistic way […] because 'the oral hygienist only needs to know that much'" (OHL4). Another oral hygiene lecturer mentioned: "starting here in our School of Dentistry, there's a lot of reservations about some of the procedures and some of the things they [dentists] openly stated is: 'I don't think that oral hygienist should be allowed to be beyond that'" (OHL1). Such a lack of dentists' awareness and disapproval of the expanded scope for hygienists may influence how they teach these students. This same oral hygiene lecturer describes the atmosphere at her dental school, regarding the teaching of oral hygiene students, she stated: "glass ionomers, the splinting, the restorative resins[36], all that, it's all been taught from that department [...] And there's also a lot of reluctancy and negativity"

[36] *The procedures outlined in this quote are all additions to the scope of oral hygienists.*

(OHL1). This suggests that oral hygiene lecturers are aware that dentist lecturers are not eager to teach the procedures that were added to the oral hygiene scope.

To further this discussion, some oral hygiene lecturers feel that the scope is not being taught because dentist lecturers don't want to teach certain procedures that they feel are not being used by hygienists in practice. This oral hygiene lecturer mentioned: "departments don't teach mouth guards because we don't use it in practice, and we have to tell them this is the scope, and it has to be taught" (OHL3). This is further reinforced by a dentist lecturer when describes another procedure namely tissue conditioners, he stated:

> I don't think dentists trust Oral Hygienists in general to carry out the procedure. Because it is very expensive to do it properly and they have to adjust the denture to a certain extent and I think that dentists are afraid that damage may occur in the process and they will be responsible for replacing the denture, so it becomes a risk factor and an expense factor. Because Oral hygienists don't have as much experience as dentists do… but the irony of the situation at this institution is that from the information I have, is that dentists don't qualify doing the procedure. Or not all of them, majority of the students don't do the procedure… so, it doesn't make sense. (DL4)

This shows that some dentistry lecturers are holding on to their scope and do not want hygienists to perform certain new procedures. This is despite dentistry students themselves not getting adequate exposure to practice certain procedures during their training.

In a startling disclosure, some oral hygiene lecturers themselves doubt the need for the addition of certain procedures to their scope. An oral hygiene lecturer noted: "we spend so much time training oral hygiene students on all these extra things. And then not necessarily going to do it [...] so is it really worth our while spending all that time" (OHL1). This statement suggests that the lecturers seem to feel that the additional scope is a waste of time. This raises the question of whether oral hygiene lecturers are ready to take up the expanded scope. This is a concern as oral hygiene lecturers are supposed to be the main advocates of their scope and the advancement of the occupation.

Another reason why they think the expanded scope is not taught is that hygienists' dominant mode of practice is working under the supervision of dentists. An oral hygiene lecturer mentioned: “a lot of the procedures were in our 2000 scope, they were not necessarily taught or probably even practised from an independent clinicians’ point of view because you always had supervision” (OHL4). This means that this lecturer believes that when the expanded scope for hygienists was taught, it was done with the consideration that there would always be a dentist at hand to make decisions and take responsibility for hygienists in their practices.

Furthermore, one more issue linked to the teaching of the expanded scope is that oral hygiene students predominantly perform the old scope during their training. A professional board member/lecturer explained that: “all they still see is scaling and polishing” (HPCSA1). She went on to say that “oral hygiene students do not see the new scope as part of their work, you have to keep reminding students that they have been trained to do other things, you have got a 3rd-year student who can clearly see that the patient has a lesion from a denture, and all they say is that they going to refer.” (HPCSA1). The oral hygiene students have not taken up the expanded scope, and this is despite being at a university where the procedures have been taught well. This suggests that there is something about the training of hygienists that makes students feel that certain procedures ought to not be performed by them.

The lack of willingness by dentists to teach mid-level dental students shows that hygienists’ training has been dismissed as unimportant which causes strained relations between different occupations at dental schools. Furthermore, the hygienists' indifference toward the introduction of the expanded scope raises questions about their choices to advance the occupation.

8.2.2 Dentists do not trust oral hygiene lecturers’ knowledge

Section 8.2.1 above shows that dentists are reluctant to teach expanded scopes to hygienists. this can also be linked to the fact that dentists do not recognise the need for professional development of mid-level dental professionals as seen in section 6.3. When

dentists do teach mid-level dental students there is a concern from hygienists that the knowledge and skills transferred to these students may be controlled. This is because the person teaching may decide the depth of knowledge or the level of complexity the students must have. As an oral hygiene lecturer stated: “there have been cases where a dentist covered restorative procedures for students and in the clinic, a dental therapist realises that the students are not well versed on the depth of that procedure. And the dental therapist must recover/ re-teach that work” (OHL4). The oral hygiene lecturers believe that the depth of the knowledge is limited by the dentists teaching the theory. A dentist from the professional board verifies that the content taught to hygienists by dentists is often curtailed. He indicated that:

> If a teacher is training a group of dental students (e.g., Local Anaesthesia), he or she has the perception knowing what they know as being a dentist, that person does something. And when they train hygienists, the perception may be different. But if that group was together and if the trainer wasn’t sure who was a hygienist or who was a dental student. And the training was focused on the skill that both those people needed for the procedure. It may be a different situation then, you know… Because sometimes it’s also influenced by the fact that you know that you’re doing it for a hygienist. And that’s not right. And that’s why if there’s greater integration, and the skill is going to be taught at the third-year level of a dentistry student, second-year level of a hygiene student, the groups are put together, they split up into different sections and trainers train them the same way. (PBD1)

This shows that dentists teach differently when they know which group of students they are teaching. This dentist is indicating that some dentists may adapt their teaching when they realise that they are teaching mid-level dental students.

There is another perspective by dentists about teaching mid-level dental students. The fact that dentists curtail the knowledge and skills of hygienists is refuted by this dentistry lecturer. On the contrary, he shows the importance of knowledge for better decision-making. Here a dentist explained how he teaches hygienists

> I actually use the same lecture slides for the dentistry students and the oral hygiene students, the difference comes in how I present the slides to the students. I believe that they both need the same knowledge it's just that the dentistry student will use the knowledge

> differently and the oral hygiene student will use the knowledge differently. So, from a dental student's point of view, they will need to know everything because they need to be able to do everything, from an oral hygiene perspective those students still need to know everything, but they are not necessarily going to be doing everything. So, if they understand the content and they understand the process and the future treatment it allows them to perform their function so much better. It is not always about what you are going to be doing yourself... as an oral hygienist or a dental therapist you will need to understand future processes and to guide your treatment options required" (DL1)

This statement shows that the dentist says that mid-level dental occupations need to have a broader knowledge than what they use so that they can plan their specific treatment with such knowledge in mind. What is implied by this lecturer is that he emphasises certain content more for some groups of students than others.

As indicated earlier (in section 8.1.3), therapists' and hygienists' clinical training is mainly reliant on dentists, it shapes and maintains the hierarchy of care in practice. Even though mid-level dental lecturers believe that dentists maintain the hierarchy during training, they also support dentists in teaching. A dental therapy lecturer suggested: "we all believe that the complicated procedures and the training are done by the dentist" (DTL1). An oral hygiene lecturer felt the same about more complicated content taught to oral hygiene students and said:

> there are topics that are taught by dentists to the Oral Hygienist, for instance, Oral medicine would be taught to Oral Hygienists by dentists and specialists because that's what they are exposed to daily in clinical practice. And it comes from a more experienced point of view to the Oral Hygienist. (OHL4)

This illustrates that mid-level dental lecturers prefer it when dentists teach complicated knowledge and procedures to dental therapy and oral hygiene students', thus reinforcing the hierarchy within the dental profession. This gives a sense that dental therapy and oral hygiene lecturers are not comfortable with teaching intricate concepts and procedures, even though it is within their scope. It raises the question of whether these lecturers have

the self-assurance to teach specialised knowledge and whether they have the knowledge in place to teach (this is elaborated further below).

Because dentists and therapists often teach oral hygienists the expanded scope, it is unclear to what extent oral hygiene lecturers feel they can or can't perform and teach more complex procedures. The oral hygiene lecturers indicate that they don't have the expertise to teach the scope and therefore specialists and dentists are enlisted to teach the oral hygiene students. One oral hygiene lecturer stated: "we don't have the experience, I mean how many splinting's have I done in my life? so you can't really expect me to be an expert on that. So, we go to the experts, and we ask them to please do the training. So, they [dentists and specialists] don't really believe that an oral hygienist should do that" (OHL1). The fact that the oral hygiene lecturers feel that they don't have the experience shows that they agree with dentists that they are not capable of doing the teaching themselves. There is also the situation of oral hygiene lecturers making use of dental companies to deliver the subject matter from the expanded scope. An oral hygiene lecturer mentioned: "we don't have oral hygienists to provide training (on whitening) every year we call different companies to come and present on this topic" (OHL3). This shows that oral hygiene lecturers at most universities are not actively responding to their scope of practice in terms of doing the actual teaching.

In this regard, dentists believe that mid-level dental lecturers should be teaching their students. A dentist lecturer queried why oral hygienists are not teaching procedures themselves, he indicated that:

> the curriculum itself need dedicated staff to teach certain things. And maybe it would be better if you had upskilled hygienists teaching the hygiene students, because they would know the scope, they would have the experience and the expertise to relay the knowledge that needs to be relayed. Because if it is within the scope of a hygienist then why do you need a dentist to teach it? The hygienist should be teaching it. (DL1)

By this, the dentist is recognising that oral hygiene lecturers are reluctant to teach their students. Dentist lecturers suggest that mid-level dental lecturers require training in the expanded scope themselves and must become more involved with the training. This will

assist hygienists in acquiring the experience to do the teaching themselves, as another dentist lecturer indicated:

> Dental therapists and oral Hygienists coming to operative dentistry, coming into the sessions and supervising the dental therapy and oral hygiene students in the clinics. So, they themselves eventually would become the people that would run operative dentistry, like a branch of operative. So, you would have a dept. of Dental Therapy where you would have Dental Therapists that would do operative, perio, in all the disciplines they are supposed to function. (DL3)

This proposes that dentist lecturers think that mid-level dental lecturers have not taken up the opportunity to learn the expanded scope to teach their students. The dentists, therefore, believe that mid-level dental lecturers are not taking the responsibility to acquire the knowledge required to teach the scope to their students.

For hygienists to be more confident about their training, the dentists note that all hygienists must be taught to work independently and to be exposed to difficult cases in the dental school environment. A dentistry lecturer stated: "you are teaching them the ideal procedure here on the ideal patient, yet when they go out they have to learn to think outside the box which we should be doing here. This is the environment where you help them to think outside the box and practise outside of the box. So, I don't think that we should be giving them simple cases, here we should give them complicated cases and when they go out there they are competent" (DL4). A hygienist lecturer in support of this suggests that training must inculcate self-confidence to perform the full scope of work and that this comes from having the theoretical knowledge to do the work without having to wait for a decision from another practitioner. She explained that:

> if you have done certain basic sciences you should be able to do it… the focus is not necessarily on what you are allowed to do, I think it should be on how you continually train yourself to do it because the confidence also comes from that. And if you are going to be questioned about how confident you are at giving a block for instance… you will indirectly shy away from doing it and then that just emphasises the point 'you see that is why we say that they will never be able to do it'. So that is why we need to train students to be confident in these procedures and implement their basic sciences in their practical and

> clinical work. And if students are trained like that, we won't have issues with the questions that arise from how well you can give a block or Local Anaesthesia… it's the same thing as prescribing antibiotics, I get taught as an oral hygienist of the various antibiotics that can be used but do not prescribe. I can advise the patient, but I cannot sign. I've had situations where I have disagreed with the dentist on what needs to be prescribed for that patient, but it still is not going to be my signature that goes on the dotted line. So, the dentist gets to choose what they think is good for the patient. But if we take it back to the theory and how much theory you've done in Pharmacology and how much theory you've done on patient management, does the oral hygienist know less than the dentist does? It becomes questions that need to be discussed in academic forums, to redirect our training (OHL4)

This explanation shows that even when a procedure such as local anaesthesia is taught there is a sense from this lecturer that oral hygienists are not allowed to use their knowledge to make decisions. The emphasis is still the dependency on dentists, and there needs to be a transition to redirect the training of oral hygienists to include more specialised knowledge so that they are confident to work independently. The extent to which the expansion of the original scope of practice for oral hygiene has contributed to the lack of confidence in teaching and implementing these tasks appears to stem from their lack of specialised knowledge. Such a lack of knowledge which leads to a lack of confidence to perform tasks is both self-imposed and perceived by other academics and can be seen as a general trend in most universities.

Oral hygiene lecturers do not meet the required regulations of working independently to perform the expanded scope and therefore cannot teach the scope. A dentist lecturer mentioned: "for Local Anaesthesia, we have to make sure that even the lecturers in Oral Hygiene have registration for Independent Private Practice within the school… and most of them when they trained themselves were not doing Local Anaesthesia"(DL2). This means that oral hygiene lecturers who do not have independent practice status are not permitted to teach students without being supervised themselves.

The discussion above signifies that mid-level dental lecturers depend on dentists' expertise to teach complicated procedures. Dentists do not trust oral hygiene lecturers' knowledge to

teach oral hygiene students the more complicated procedures. Although hygienists have gained new scope, oral hygiene lecturers have not increased their skill set to include this in their teaching and do not trust themselves enough to do the teaching. This raises the question of what will be required to upskill the oral hygienists and why have they not done so. Is it the dominance of dentists which allows them to control the knowledge in the training environment? Or is it the insecurities hygienists have with their level of expertise, which take away their control over the knowledge imparted to oral hygiene students?

8.2.3 Interpretation of the Expanded Scope

The wording of the oral hygiene scope of practice has triggered several issues around the interpretation of procedures within dental schools. The difference of opinion is between lecturers from various occupations and at different institutions. An oral hygiene lecturer explained: “The problem that we have is, we've actually discussed it with the board this scope is not very clearly written. I think whoever wrote it and so many different interpretations from individuals because even in my department I would read it this way and prof [...] will read it that way” (OHL1). This reveals that the way the oral hygiene scope is written has raised numerous contestations. These contestations may influence the education and training offered, which may shape occupational identities within the dental profession.

First, the broadness of the scope has led to differences in the content and methods of procedures taught at various universities. An oral hygiene lecturer describes how dentistry lecturers at her dental school construed the procedure of applying local anaesthesia compared to other universities. She says, “they all [other universities] interpreted the local anaesthetics as giving blocks, and we saw it as you can only be infiltrations, but now going back to how this actual scope now reads is still not very clear, it doesn't specify”(OHL1). This shows that the written scope has been misinterpreted by lecturers over many years [since 2001 when local anaesthetics were included for hygienists], leading to differences in the knowledge base of students and the actual procedures which the hygienists perform daily. She noted that: “even from previously since 2000, when we initially had like local anaesthetic [...] even dentists were complaining that saying that ... how can we do a lot of

issues with regards to medical history and what happens if there's a medical emergency.... they're not all happy" (OHL1). This shows that dentists are unhappy about hygienists performing certain procedures and they control the scope taught to oral hygiene students. In a situation like this, where different universities are not teaching the same procedures, clarity about translating the scope correctly is provided by professional boards. The fact that the expanded scope is not being taught at all or in the same way may be subject to the autonomy of universities but may also be because of the lack of communication between the various stakeholders[37]. Yet adherence to or communication between universities and the regulatory bodies is not assiduous (as discussed in the following section).

Second, the way the scope is composed makes it unclear to what extent a particular occupation performs a specific procedure. A therapist practitioner explained: "preventive resin restoratives (PRR), the scope does not specify which group does which one, this group can do Type III preventive resin restoratives[38] because it is similar to a Class I [restoration]" (DTL1). An oral hygiene lecturer explained the extent to which this procedure is taught to hygienists and therapists, "you can diagnose the tooth properly and you say that your treatment plan will be a Preventive Resin Restoratives, they all actually do a caries risk assessment […] then for hygienists, you make your diagnosis, but your treatment will end at Type I but for therapists, it goes a little further to introducing the preventive resin restoratives Type II and III" (OHL3). This shows that the oral hygienist will have to be able to make a diagnosis of the extent of the condition (dental caries in this case), but the deeper lesion will be referred to a therapist or dentist. In the two quotes above, the therapist and hygienist from the same institution differ about the level to which this restorative procedure must be introduced for hygienists. This shows that even at the same dental school there are differences of opinion on which procedures are performed by the different clinicians.

Third, the vagueness with which preventive resin restoratives (PRR) have been written in the regulations, allows dentists and therapists to control the level and extent to which

[37] At the time of the data collection, this may have been the case however subsequently the Board of Dental Therapy, Oral Hygiene, and Dental Assisting at the HPCSA hosted a curriculum review workshop on the 18th of January 2023 to interrogate and align interpretation of the identified scope of practice for teaching purposes across the various training institutions

[38] Preventive resin restorations have three levels I, II, III and each level signifies the depth which the cavity is, with Type I being the shallowest cavity and Type III the deepest cavity which extends into the enamel.

hygienists perform this procedure. Dentists decide on the level at which they feel the hygienists should be working, this is seen in a statement made by a dentistry lecturer:

> I heard from the HOD that yes, they need to know Type I – III, but they must do I think Type I & II because if they get into type III they might as well be doing a composite restoration. Because that's what happens anyway… so, we know with PRR that we cannot tell when it comes to diagnosis that I know for sure that this is PRR Type I, because it's only when you go in that you realise oops… I'm in Type III. Maybe it's important to let them know from I to III, so eventually, if that happens, they will know is the part that I'm not equipped to do as a type I or a Type II. But I'll do it as a type I or II and then I can refer if there is a problem for the patient. (DL3)

The statement above is saying that dentists (and in some cases therapists) decide on the type of preventive resin restorative procedure (also labelled sealant restorations) hygienists may perform because the type/level is not specified in the scope[39]. From this, one can denote that the dentist lecturer is convinced that it is not easy to make the distinction before the clinician starts the procedure. He indicates that students have to be taught all the stages of the restoration and perform up to a certain stage and then refer to a therapist or dentist. In this way, the dentist intends to cut back the scope that hygienists have been granted. A hygienist lecturer confirmed this and mentioned: "what our students are now taught is, I think, up to a Class II, so they're not allowed to go into the dentine [...] that's what the dentists who teach them say [...] So as long as you stay in enamel. But where do you draw the line? you know it's difficult." (OHL1). This shows that what is written in the scope and what may be written in the intended curriculum do not necessarily occur in the enacted curriculum. This is because dentists and therapists may decide what is taught, and the extent of the knowledge and skill included in the enacted curriculum.

Fourth, there is much confusion around the restorative procedures that hygienists perform and their ability to distinguish between types of restorations. As a dentistry lecturer described:

[39] *Preventive Resin Restorations as outlined in the regulation of scope for oral hygienists is; (/) the placing and removing of rubber dam and matrix bands, the application of minimally invasive procedures such as atraumatic restorative techniques (ART) and sealant restorations; (Source: No. 39453 Government Gazette, 26 November 2015).*

> So, you tell a student you going to do a preventive resin restorative and then later you tell them you are going to do a Class I… now oral hygiene students listen to that and then they often ask the question, "what's the difference?", and there is no difference. It's just the concept, we just give terminology to a procedure, Class I, Type I, II preventive resin restorative, whether it's in the enamel, Type II preventive resin restorative it's partially into the dentine, and Type III traditionally it was a Class I composite, but now we know that you can prepare a cavity only in enamel, it doesn't have to be only in enamel… do that and leave it alone. You can do a cavity and do it in the enamel and then put in a flowable (this is a dental material), is that a preventive resin restorative? You can't actually tell the difference. So, that's the only debatable thing about it, now what do we teach the students? (DL4)

This suggests that dentists are concerned that the type of restorative procedures and their materials are closely linked and cannot be distinguished easily before opening a dental cavity. The clinician has to use their discretion, and this is a very fine distinction which can easily be missed if the knowledge is not in place, or it can be misused depending on the ethics of the clinician.

The way that the regulations are written ought to influence the curriculum content, however, it causes differences of opinion for lecturers at different universities as the procedures easily overlap. It allows those teaching the procedure to control the depth and range of knowledge and skills according to their interpretation. Such decisions by the lecturers impact what procedures are taught and ultimately filter down to which procedures are performed in practice. Thus, there is control of boundaries during training which permeates into practice.

8.2.4 Expanded scope is being implemented very slowly or not at all

There are many reasons for the lack of implementation of the scope of the curriculum, which include a lack of infrastructure and human resources explained earlier. In addition to the content taught at the different universities, there are other discrepancies regarding the execution of the expanded scope in curricula. One of the challenges is that not all of the scope is included in the teaching of mid-level dental students. An oral hygiene lecturer indicated that some of the procedures were not implemented five years after the scope was

approved, she stated: “the 2013 scope the tooth whitening […] I must say it is 2018 now and our institution is not there” (OHL3). This means that the oral hygiene programme at this institution has been qualifying students without the requisite knowledge and experience to perform the full scope of practice. A dentist lecturer at the same university divulged the status of their oral hygiene programme because the full scope was not taught, he explained: “We have just recently been penalised for the bachelor in oral hygiene and bachelor in dental therapy programs, for not being completely in alignment with the 2013 scope of practice and we got provisional accreditation to offer these degrees” (DL2). The fact that certain procedures are not taught, the accreditation of these programs is in question which lowers the status of some universities' oral hygiene and therapy programs. Another dentistry lecturer at a different university provided a similar example of procedures that were not taught many years after regulations were passed. This lecturer explained: “I know for a fact that if you question some of our oral hygienists here, or graduates if you come across them […] they only started administering local anaesthesia recently. It was not in 2000, it may have been part of the scope of practice, but I don’t think that every institution agreed to allow their oral hygienists to give local anaesthesia” (DL4). This reveals that some dentists were aware of the expanded scope but did not agree that local anaesthesia ought to be performed by hygienists. This shows that despite the expansion of scope, the control and narrowing in practice are being sustained at dental schools.

The professional board members raised alarm over the lack of implementation of the full scope and indicated that lecturers were blaming the board for not informing universities of the latest scope changes. A hygienist on the board described: “I was horrified to know that they were not offering courses and I asked why not, and they said that they didn’t get a proper directive from the HPCSA that we are supposed to implement” (HPCSA1). This shows that communication between the regulatory body and the training institutions is not desirable. The same hygienist noted that despite the board communicating with dental schools, the expanded scope is being implemented very slowly or not at all, she explained “we sent the letters to the universities, then it was up to the deans. That particular institution, whoever the deanship was at the time did not even filter it down to the oral hygiene division. I went there in 2018, last year, which is 5 years later and they haven’t yet

instituted it. (HPCSA1). This statement shows that in that oral hygiene program, there was poor communication within the dental school which is influencing the teaching of the full scope. This raises concerns about how oral hygiene is perceived within dental schools and how the occupation is treated by senior members of dental schools. The constraints around communication among dental stakeholders allow for the lack of implementation of the expanded oral hygiene scope to continue. This also points to the lack of regulatory oversight on the part of the professional body and the role it plays in ensuring the updated scope of practice is taught at universities.

8.2.5 Summary of manipulating the scope during training

The uptake of the expanded scope is limited during training and students often complete their programs lacking the confidence to perform procedures from the scope. This begs the question of whether it is the dominance of dentist lecturers ensuring boundary-keeping during the training of hygienists or whether it is oral hygiene lecturers' hesitancy to take on the expanded scope. What is noticeable in each subtheme is that the quotations sometimes indicate contestations, while others show none, see Figure 30.

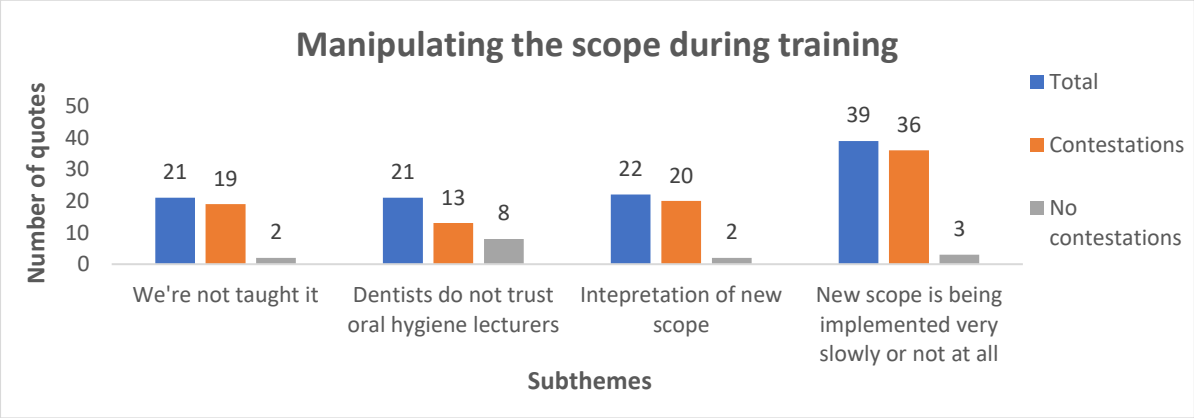


Figure 30 Quotes about manipulating the scope during training

The first subtheme ‘we’re not taught it’ has 21 quotes, of these 19 quotes described contestations that mid-level dental occupations are taught the expanded scope mainly by dentists as the responsibility of teaching the scope has not been taken up by oral hygiene lecturers. Further, this also shows that dentists are reluctant to teach procedures that are contested in the expanded scope for oral hygiene students. What is surprising is that oral

hygiene lecturers also doubt whether some of the new procedures ought to be included in their scope. The two quotes that do not contest the teaching of mid-level students reveal greater eagerness for teaching mid-level dental students. What can be deduced from this is that there is considerable reluctance to teach mid-level dental students their expanded scope.

The second subtheme ‘dentists do not trust oral hygiene lecturers’ has 21 quotes, of which 13 contestations mainly indicated that dentists control the knowledge they impart to hygienists. The dependency on dentists to teach the expanded scope allows for the control of knowledge of preventive resin restoratives and local anaesthesia in oral hygiene curricula. Eight quotes suggest that oral hygiene lecturers have not increased their skills to improve their teaching and do not trust themselves to teach the scope. The discussion indicates that dentistry lecturers question oral hygiene lecturers’ ability to teach contested procedures such as preventive resin restoratives and local anaesthesia. This affects oral hygiene lecturers' control over the knowledge of the contested procedures.

The third subtheme ‘ interpretation of the new scope’ has 22 quotes. There are 19 quotes which highlight contestations and concerns around how the expanded scope is written and misinterpreted. Of the 19 contestations, 12 quotes are from mid-level dental occupations which shows their concern about the unclearly written scope which allows dentists to control knowledge during training. The ambiguity of the scope has therefore affected how different role players control procedures that are taught and performed in practice. Three quotes are from dentistry lecturers showing their support for teaching mid-level dental students thoroughly.

The fourth subtheme ‘new scope is being implemented very slowly or not at all’’ has 39 quotes, 36 quotes outlining barriers to implementing the expanded oral hygiene scope. These include poor communication and a lack of interest by various stakeholders. The poor implementation of the new scope may have been set off by the external dominance of dentists over procedures but also by internal endorsement from within the oral hygiene occupation. The hygienists have taken on the stance that there are too many barriers and

there is very little that they can do to implement the expanded functions if they don't have the support of key stakeholders. The three quotes note that there is support for teaching the expanded scope.

This discussion presents several reasons why the oral hygiene scope of practice is manipulated. This has led to the impression that there is a need for dentists to maintain their boundaries by controlling what is taught and implemented to oral hygienists. However, not all oral hygiene lecturers have not taken the responsibility of teaching the expanded scope and some appear to be unsettled by the thought of boundary crossing. The section suggests that policy developments regarding professional scopes do not inevitably lead to changes in education and training and such changes do not always filter into practice.

8.3 Preparation for Work through increasing Specialised Knowledge

The previous themes described different issues regarding the preparation for work. The final theme focuses on the preparation for work through deepening curriculum knowledge. Some of the discussion is broad and refers to the idea of enhancing the professional status or allowing hygienists to work independently, while some of the discussion points to preparation for work which looks at how contested procedures are taught. This discussion provides an overview of mid-level dental programs to compare knowledge in the intended curricula and the transition from theory into practice. These points are central to the discussion as they describe how lecturers may shape the intended and enacted curriculum. The key claim emanating from this section is that the preparation for work is controlled by the dominant occupation (dentistry) to maintain its boundaries, while oral hygiene lecturers lack the resolve to take up the expanded scope in education institutions.

After coding the transcripts, one hundred and twenty (120) observations were made relating to the aggregate dimension of preparation for work through increasing knowledge. These observations came from nineteen (19) interviewees, a representation of the number of observations for the different interviewees can be seen in Figure 31 below.

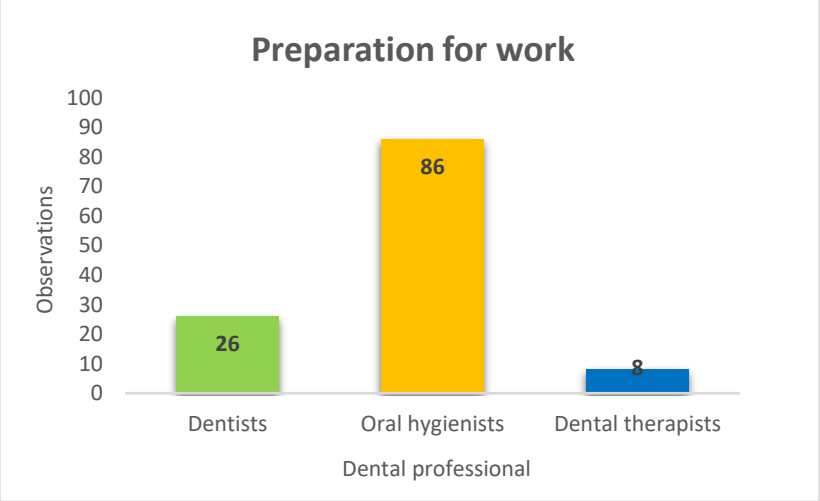


Figure 31 Observations of preparation for work through increasing knowledge

This figure illustrates the number of observations taken from each interviewee for the theme of preparation for work through increasing knowledge. The highest number of observations were drawn from dentists. Of the one hundred and twenty (120) observations, eighty-six (86) were from hygienists, twenty-six (26) were from dentists, and eight (8) were from therapists.

Table 8.1 in Annexure E illustrates how the observations were analysed. A first-order analysis of each observation was carried out which brought to light first-order concepts. These first-order concepts were grouped through a second-order analysis and four second-order subthemes were identified. The second-order subthemes were then combined into the aggregate dimension: Preparation for work through increasing knowledge. The four subthemes identified which are discussed below are:

- With a degree, we focus more on giving them more in-depth knowledge – 18 quotes
- I should've known more about anaesthetics… but I didn't get it – 45 quotes
- I have to make the decision myself – 26 quotes
- first and second year. It's similar. I think it's the third year that's different - 32 quotes

8.3.1 With a degree we focus more on giving them more in-depth knowledge

The dental profession is also shaped by the level of qualifications that the three occupations hold. With the enhancement of qualifications for mid-level dental occupations (specifically oral hygienists), there has been an expectation that knowledge would increase and that the status of this occupation would improve.

The upgrading of qualifications from a two-year diploma to a three-year degree has influenced perceptions within the dental profession. What the data shows is that dentists are surprised that the qualifications of oral hygienists have advanced. A dentist practitioner referring to the training of hygienists mentioned: “when I studied, they could do a one-year or two-year diploma so now it's a three-year degree. Yes. That's marvellous. I think that's wonderful.” (DP2). This shows that dentists are in support of increasing the level of qualifications for oral hygienists. In this regard, oral hygiene lecturers believe that a diploma qualification affects the recognition for the occupation. A lecturer noted: “if you had a diploma it wasn’t recognised as a profession” (OHL2). This shows the perception that the diploma program for hygienists is not highly regarded by dentists and lowers the recognition of the occupation.

However, there are differences in perceptions regarding the upgrading of oral hygiene qualifications. Even though qualifications have shifted from diploma to degree programs over the past few years, there seem to be conflicting opinions at different universities about such changes. At one university a dentistry lecturer described the new curriculum at his institution as follows: “the curriculum must be in sync with the scope […] but the people who are crafting the curriculum must make sure that there is the sequencing of knowledge […] and that it accumulates over a period of three years. So, let me say there has been a slight shift, but two-thirds of the core curriculum is still the same.” (DL2). This points to the fact that changes to hygienists’ scope and autonomy have not impacted the curriculum at this university enough. This means that hygienists are regarded in the same light as before, as not able to operate autonomously. At another university, a dentistry lecturer describes a difference since the qualification shifted,

> the change from the diploma to the degree, because of the intensity of the course and the amount of knowledge they have to acquire in odontology compared to the diploma, is much more the quantity and the quality than previously in the diploma where it was more about knowing how and in the degree, you now have to show how. So, if you look at Millers pyramid of teaching, it goes up a level. Before they had to know and not show, now they have to know and show and sometimes even do. That's where the curriculum has really changed much more (DL4).

This perception shows that some dentists believe that there has been a change in the types of knowledge that oral hygienists now receive compared to the diploma. This is substantiated by an oral hygiene lecturer who explains how the bachelor's degree was conceptualised at this university, she stated: "I don't think we changed from a diploma to a degree to accommodate the extended procedures. That was not the reason we wanted to, maybe enhance their status, and give them a professional identity which you don't get with a diploma. So, I think with a degree we focus more on giving them more in-depth knowledge, for instance, pharmacology, more in-depth knowledge with regards to anatomy we included the research module. And I think that makes them a better professional in the end." (OHL1). This university appears to have contemplated the curriculum knowledge which would contribute toward hygienists becoming autonomous.

Oral hygiene lecturers believe that the new qualifications have brought status to the occupation. One lecturer mentioned: "with a degree I want to say that it just opens little more doors for you […] And I'm going to bring in something now that maybe doesn't have anything to do with it […] financially […] if you had a diploma it wasn't recognised as a profession say for instance with Profmed […] you could not get any insurance from them if you just had a diploma, but with a degree, you are on par with some of the other professions."(OHL2). Another lecturer indicated that the new qualification makes students think about the work that they do differently, she stated it will: "teach them how to make a diagnosis", and "bring the things together. (OHL1). Even though hygienists obtain bachelor's degree qualifications, the universities differ in what is taught and how students are taught.

The drive toward advancing the level of qualifications and knowledge that comes from this has proven to differ at various universities. At one university there is a perception that the changing to a degree for oral hygienists has not changed what is taught, while at a different university, the perception is that there have been changes to the theoretical knowledge which will help with the professionalisation of hygienists. Thus, because the qualification may have changed from a diploma to a degree, it does not always result in the depth of knowledge improvement or whether contested procedures will be taught. It appears that some universities have not seen a significant shift in how these professionals are being prepared for autonomous practice.

8.3.2 I should've known more about anaesthetics… but I didn't get it

The concern that hygienists have not been prepared to perform certain procedures has been mentioned above. During this discussion, sometimes I refer to a whole curriculum, while other times I refer to expanded functions courses[40] to substantiate or refute claims about the adequacy of knowledge previously made by the participants. In this section, the focus is on explaining queries about the knowledge for the expanded scope.

Dentists are unsure about the contents of curricula and the level of training provided for mid-level dental occupations. A practising dentist indicated: "I don't really know what the training and the level of training are really like for hygienists and therapists" (DP4). Further, another dentist specifically remarks on what knowledge hygienists have regarding restorative procedures and stated: "I don't know how the oral hygienists are taught, I don't know whether they are given any kind of background information about this, whether they taught about anything about the pulp" (DP3). Such comments show that dentists in practice may not be aware of the depth of training that mid-level occupations receive, which permits their reservations and reasons for holding onto certain procedures.

Several procedures in the new scope for hygienists are contested as seen earlier and in the findings of Chapters 6 and 7. The insinuation is that hygienists are not taught the theoretical

[40] *Expanded functions courses are often short 1 or 2-week blocks introduced to teach the procedures added to the new oral hygiene scope. Practitioners who want to perform the new scope are obliged to attend this training offerred only through universities and is certified by the HPCSA.*

knowledge to perform contested procedures. A dentist lecturer outlined his concerns about hygienists' knowledge of local anaesthesia as follows:

> I will still have some questions about the Local Anaesthesia part, I don't think that they have sufficient clinical time… to manage for emergencies, because what happens when they have a patient that is asthmatic? Or a patient who has a history of fainting/syncope, or a patient that goes into cardiac arrest, even the dentists don't have sufficient training with regards to that. They can do normal CPR procedures, but if it's a serious case like anaphylactic shock? So that's what we must emphasise in the curriculum is that just like we have in the referral system, they don't recognise it in the scope… to overcome that problem, all that they have to do in the scope of practice is, ensure that the patient doesn't have these conditions then the Oral Hygienist can give an infiltration or a mandibular block, if the patient is not a cardiac patient, or has a history of systemic disease that the Local Anaesthesia will have an effect… then that will sort out the problem, you don't have to take it out of the scope. Just introduce a referral system for Local Anaesthesia, the dentist must administer the Local Anaesthesia because then he will take responsibility for the patient and then that will protect the Oral Hygienist. Because they don't have enough clinical background, or it does not support that emergency medicine or resuscitation they don't have that in their curriculum. (DL4)

Here is a good example of a procedure which has been part of the scope for hygienists since 2001 and that dentists are still not comfortable with hygienists performing. This lecturer is suggesting that the hygienists are not receiving adequate knowledge and that they do not have sufficient time to learn to perform this procedure. Instead, he proposes a referral system from hygienists to dentists for inclusion in the curriculum. These statements expose dentists' lack of trust in what is in the curriculum and their need to control who may perform more contested procedures.

The concern is mainly about whether hygienists receive adequate knowledge and skills during their training to perform the new procedures well. Dentist lecturers are unsure of the extent to which procedures such as local anaesthesia and restoratives are taught practically and assessed. A dentist lecturer explained: "I'm not aware, because the oral hygienists that attend our (odontology) clinic have never administered local anaesthesia in our clinics for restorative procedures, (DL4). Another dentist lecturer described his teaching of restorative procedures to the oral hygiene students:

> having taught the Oral Hygiene students for a few years now… it does concern me that there is no structured preclinical component. For the expanded functions, we give them a couple of demonstrations, but there is no assessment… not that I'm aware perhaps that is done beyond what I teach. But for us that come in as the external operative course lecturers… we have never run a practical component to what we are teaching… I'm not sure if the others have… (DL1)

This dentist lecturer is concerned because he realises that the theory is taught by dentists, while the preclinical demonstrations and clinics are taught and assessed by the therapists and oral hygienists (who have not been involved in much of the theoretical input). This dentist is not sure of the quality of the preclinical training or the clinical assessments and this produces hesitation on the part of these dentists as to how well the hygienists are taught and whether they are capable of doing the procedures.

Such statements by dentists about the preparation of mid-level occupations are corroborated by older hygienists in practice and some of those lecturing. A practising hygienist stated: "I do think that pathology and micro, anatomy and all of that, ha, that side of it. That were good enough but if we had more time, I think we would've had a better understanding." (OHP1), and an oral hygiene lecturer explained the lack of practical training as follows: "they also do the dissections the dentistry students, which oral hygiene students don't do [...] they just have to identify on the wet specimen" (OHL1). This exposes the beliefs of some hygienists that their education and training are not sufficient. Another example from practising hygienists is about the knowledge they receive for procedures such as local anaesthetics. One practitioner explained:

> I should've known more about anaesthetics. But that was the time unfortunately, remember, that's when Dr …. was just introducing it, so it was new. But from the anaesthetic point of view, ja, I should have had more practice. And I didn't get it. (OHP4)

This suggests that hygienists lack theoretical knowledge of contested procedures such as local anaesthetics. Further, queries are associated with whether the hygienists get sufficient practical exposure for a procedure such as local anaesthesia. An oral hygiene lecturer concurs with dentists, she stated that:

> in some of the procedures I would agree with the dentists, because we don't get enough exposure, I would like to do at least one a week […] so that I know that I'm going to be comfortable with it but now, you go and get the demo as a student or you go and do the expanded functions course somewhere at a university, they show you that you are maybe allowed to practise one, no six months later you only get to do one, I think that there is reason… in my opinion that for myself, the exposure to those procedures are not sufficient and then that is why there is a concern from others out there, why are we doing these procedures? (OHL1)

This shows that the hygienists also query their abilities to perform certain practical procedures, a lecturer indicated: "they have to write a test. And I have to get like 65% for that test before they're allowed into the ward, there they get one or two sessions where they now observe the dental students doing it, and then they are just given a syringe and do it" (OHL1). This reveals that the oral hygiene lecturer may be confident that the students are receiving theoretical knowledge before doing the procedure practically, however, she queries whether the practical demonstrations are adequate.

A younger practising hygienist who completed the degree in oral hygiene has a different response, as she exclaimed: "dentistry's more extensive and more prestigious but I felt like what we were trained in we were trained in thoroughly" (OHP5). This hygienist is conceding that the level of dentists' training is higher while stating that her training was sufficient. She remembers that she received enough practice to do a local anaesthetic, and noted: "they would send us to the extraction department and make us do all the injections and then the dentistry students would come behind and pull out the teeth" (OHP5). This shows that the newer hygienists at some of the institutions are receiving more exposure to contested procedures during their training. This indicates that there might be a positive shift in how education and training are perceived and experienced by younger hygienists.

This shows that dentists and hygienists are aware of the complex nature of certain procedures and admit that it would be difficult to perform unless practitioners have the requisite knowledge and experience. An example of restorative procedures shows that dentists would not raise objections for oral hygienists to perform such. A dentist

practitioner compared dentists and hygienists doing the same restorative procedure, he cautions that thorough training and experience are required and stated:

> I'm not saying that a hygienist isn't able to do it well. But I think that that would be contested so as a dentist with a lot of experience, and somebody who does, like all of this stuff and I've done it for a long time. I think sometimes they're easy and sometimes they're hard and you need to be trained well, and maybe if you're not that skilled in bonding in difficult situations, it may be detrimental to patients rather, to have it done rather than do it and so I would think that some of those restorative things are may be a little bit tricky. (DP4)

Dentist practitioners note that training needs to be thorough so that all practitioners perform procedures properly in practice. A dentistry lecturer noted: “They are allowed to use a handpiece and if they're given the appropriate instructions, initially I don't see why it should be a problem. Those procedures seldom compromise the pulpal space and a very superficial, that is why I don't see any risk for hygienists recognising pulpal pathologies and this has to be taught to them”(DL1). These dentists are advocating for thorough training and the knowledge to be given to oral hygienists to perform restorative procedures correctly.

Another area to examine whether the knowledge is sufficient for advancing hygienists is the expanded functions courses. These expanded functions courses differ in design, content and quality at the various universities. A dental therapist from the professional board stated: “one university just expected oral hygienists at the expanded functions courses to do just one procedure, whereas at another university we actually wrote exams to test our knowledge and then we had practical to test our clinical competence.” (PBD2). This reveals that curricula for expanded functions differ from one university to another and the quality of some courses may not be viewed favourably. This is confirmed by another hygiene practitioner when she stated: “after doing that course you should be supervised for a while before being brought in independent practice and going out and doing sealant restorations yourself because the first few I did I asked the dentist”(OHP8). The expanded functions courses are supposed to incorporate the knowledge to advance hygienists, however, it has been perceived as lacking.

Upon further examination of the perceptions of the expanded functions courses, another participant suggests that these courses do not meet the desired outcomes. One oral hygiene lecturer viewed the expanded functions courses as follows:

> expanded functions and how it's being delivered is the fact that it is a checklist and its procedures. So, have you taught the students how to place a certain material? How to assess the student for that material to be placed? do the students know the indications for that material being placed in the mouth? As opposed to integrating it with the rest of the knowledge that the student has and being able to make it, it has to come from a place where the student comes to you with a problem and it's this severe, but it's also compounded by another problem. How do you as a clinician approach that problem in terms of being effective? Who do you pull into that team and why? And what do you tell the patient and how do you just proceed with that appointment? I think it becomes a lot less about overall integrated patient management as opposed to […] can you do this? can you do that? (OHL4)

This perspective reveals that the expanded functions curriculum is designed and implemented to teach the procedures technically and does not teach hygienists to make decisions autonomously.

A further concern is the allocated time to teach the new procedures in the full curriculum compared to the expanded functions courses. A dentist lecturer described the gaps in expanded functions courses:

> the hands-on time that those hygienists are getting and how does it compare with the hours that an undergraduate has to fulfil… so if it takes 50 hours… are they getting the 50 hours? And again, are they being assessed properly…. Are they certified to say that someone is now able to perform a certain function? Personally, I think that someone that qualified before 2013… should not have the liberty to do a 2-week course, it should be a properly structured half-year course to teach them to do the procedures to an acceptable level. And then perhaps get an upgrade to a degree to say yes, we can now do these procedures. (DL1)

This dentist lecturer is advocating for hygienists to have a deeper knowledge to perform the new scope. The claims made by the dentist are that the allocated time for expanded

functions courses does not equate to what is taught in full qualifications, it is not assessed thoroughly and does not provide deep knowledge and skills.

The discussion highlights queries about the adequacy of knowledge that is provided to hygienists during training. Dentists are unaware of the depth of training that hygienists receive to perform certain procedures and thus query whether hygienists have sufficient knowledge. The oral hygienists themselves are concerned with the low level of knowledge they have to carry out certain procedures. The oral hygienists' whole curriculum and the expanded functions courses are said to be inadequate for preparation for work. Although there are shifts in the acceptance of different occupations performing new procedures, there are many doubts as to whether curricula for hygienists prepare them adequately.

8.3.3 I have to make the decision myself

The previous section illuminates multiple queries about whether oral hygienists receive adequate knowledge in preparation for work. This section suggests some more positive perceptions that oral hygienists have about their ability to work independently. This positivity is not noted by all hygienists though and it is quite different from the overall findings.

Oral hygienists may enter into independent practice, this has prompted the question of whether the education and training prepare them adequately for such situations. Recently qualified bachelor's degree hygienists' perspectives on their training and their abilities to carry out procedures independently is positive. One hygienist explained her good experiences during training:

> I've heard some practitioners question whether or not we should be able to perform blocks saying maybe we should just be able to do infiltrations. But in my training, I was extensively taught to do blocks, all types of blocks, and I did them all plenty, and I'm very confident to do it, so that's not even a question. But maybe that's not the experience of everyone especially the hygienists that were trained very long ago. (OHP5)

This illustrates how practical abilities imparted during education and training can improve self-assurance for practitioners to perform complex procedures independently. This can also

be seen in another case where a practitioner admits that the content that they were taught was systematically taught by experts in each field. A dental therapy practitioner stated: “Those are quite thorough because we were actually lectured by the lecturers from those departments [anatomy and microbiology] in what it wasn't just general lecturers, so it was quite in-depth, and work very well done” (DTP3). This offers the impression that the therapist is assured that the quality of the content received is high.

The discussion above demonstrates how training may influence how the practitioner undertakes procedures in independent practice. This is linked to their confidence to make decisions autonomously. Another hygienist who qualified with a Bachelor's degree disclosed that she has more control over her work. She described this as follows:

> they won’t overstep my boundaries when it comes to seeing a patient or consulting a patient. They’ll give me full freedom to do that. They won’t walk in and tell me that I don’t know better than them. So, they have, we have a good mutual respect when it comes to a service being delivered to a patient. They don’t doubt the type of service I give to a patient. So, whether I do a scaling, he won’t want to come in and check on the scaling. Or to see if I’ve done a good scaling or if I’ve done a good filling (OHP2)

Here the hygienist believes that her training has given her the respect that she requires from the dentists that she works with and that they grant her the autonomy to do work without questioning her knowledge base. This perception by a newly qualified hygienist does not represent one of the overall findings, which suggests that oral hygienists feel they lack the knowledge which renders them underprepared for work. Oral hygiene lecturers also believe that the more recent bachelor's degree training is much improved in terms of preparing students for independent practice. One lecturer explained “I know these courses by heart, and I know that it has the depth that is required, the thing is you know as I say in the 2nd year in theory and preclinical, I know, it is practise and practise, and the importance is to pick all of that up in the 3rd year” (OHL5). This highlights that the lecturers are aware that the depth of knowledge and rigorous clinical training is important for making decisions autonomously in practice.

When considering what hygienists are being taught about decision-making, we see a different scenario at some universities. Some oral hygiene practitioners have different experiences during their training. An oral hygiene practitioner indicated: “if I feel a patient needs to get splintered, I don’t actually have to go through the dentist to give the patient that certain treatment. I have to make it myself; I have to make the decision myself. But that’s why I say, that’s the type of knowledge that we lacked from varsity because we never got the opportunity to make such decisions by ourselves” (OHP2). In contrast to the discussion in the previous paragraphs above, this highlights that the knowledge is not in place for these students to become more autonomous. Another oral hygiene practitioner noted: “my mindset from my training was, we follow the prescription of the dentist you do not, you do not work autonomously. If I can put it that way. You don't make decisions that autonomously, the Scale and Polish the decision of the dentist, everything is the decision of the dentists” (OHP8). This comment shows how education and training continue to make students doubt their abilities to work independently. This can also be seen in the diagnosis-making process taught during training. An oral hygiene lecturer explained: “we teach our students to diagnose, even if they can't specify what it is or if they see a nodule in the palate, for instance, they don't know what it is but they will say, I've seen this nodule it's red, it's this size” (OHL1). The fact that the student is not expected to have deep knowledge produces an environment where hygienists go into practice without confidence, and they believe that they need the supervision of the dentist on the procedures they may perform. An older oral hygiene practitioner disclosed: “local anaesthetic that I know of is what the dentist or friends in the industry helped me with. By observing and going there, you know, out of your way to go and learn. But definitely not getting enough exposure and proper education in the course.” (OHP1). This disclosure suggests that the hygienist developed her ability to do a local anaesthetic in the workplace and that the training she received in dental school did not instil confidence in her to perform procedures well. The fact that this practitioner has learnt to perform the procedure through observation raises questions about whether she now simply has the technical ability or whether she has acquired the underlying knowledge to perform the procedure independently. These examples emphasise beliefs that the knowledge required to empower these practitioners to make decisions in practice is not in place.

Other specific content areas such as pharmacology and practice management have been highlighted as important knowledge bases to inform decision-making in independent practice. An oral hygiene lecturer mentioned:

> Bachelor of Dental Surgery students have 2years prior of basic sciences that they would have done, they still have an entire block I think in 4th year of internal or surgical medicine that they do. But they have a lot of more basic sciences input and Pharmacology that they do as a full-on course in 4th year. (OHL4)

This statement reveals that oral hygiene lecturers believe that Pharmacology in the dental curriculum is regarded as more substantial and that the mid-level curriculum must incorporate more theoretical aspects. The same sentiments are mentioned about practice management, that it does not suit the roles of these occupations. A professional board therapist described this as follows:

> when this course, was first designed, it was designed for this particular professional, oral health provider to actually be working in a public facility, whatever public facility may have been, whether it was military, or whether it was the government hospitals, or the clinics or whatever. But it was not designed to work in private practice, in any form of private practice, whether it was with a dentist or independent practice. (PBD3)

This highlights that there is a belief that knowledge in certain content areas and for specific procedures may not be in place, which creates hygienists with a lack of confidence to perform autonomously in practice.

The section points to different opinions about the preparation of mid-level dental students for autonomous practice. There are instances when there is agreement that the knowledge base is good, and then there are situations when the adequacy of the knowledge is refuted. This confirms inconsistencies in perceptions about the knowledge received to inform decision-making in independent practice.

8.3.4 first and second year. It's similar. I think it's the third year that's different

After noticing the difficulties in implementing the scope, the questions around the adequacy of knowledge, and whether certain procedures are performed autonomously by mid-level

professionals, I turn to investigate the alignment of scope in curricula. This section first looks at a broad conception of knowledge in curricula and this is followed by a description of how such knowledge transitions from theory to practice and assists in decision-making, with specific attention on the contested procedures which are common to the three occupations.

Even though the three occupations have common procedures, each curriculum is distinctive. A dentist lecturer believed that: “the three groups are separate here, the curriculum does not talk to another curriculum” (DL2). With this, he implies that dental curricula are not compatible with each other and confirms that the three occupations are trained independently as discussed earlier. Oral hygiene lecturers indicate that knowledge differs in the three curricula, they explained this as follows: “the basic sciences are different, even though they all have anatomy, chemistry […] Oral Hygiene has these modules, they are similar modules but then the content is different” (OHL3), and “as far as I know in the dentistry course they still do a lot of anatomy from the rest of the body as well. We as oral hygiene only focus on head and neck” (OHL1). These lecturers are querying the content of their curricula and whether a student receives sufficient basic sciences such as Anatomy, Microbiology and Pharmacology when compared with dental students. Lecturers also emphasise that occupational roles influence the various curricula. An oral hygiene lecturer mentioned: “it is different because of the focus and the scope, for us oral hygiene and dental therapy the 3rd year that when dental therapy will differ, the dental curriculum it is completely different” (OHL3). This lecturer admits that the scope and roles of each occupation will affect the final curriculum design. It is important to note that participants from the mid-level occupations have different perceptions of their roles as described in chapter 6.

Despite the curricula being distinctive, what is interesting is that mid-level dental occupations are understood as sharing at least the same first year and some parts of the second year of study and may have a few courses in common. Most theoretical knowledge is covered in the curriculum in the first year of the mid-level degree courses. An oral hygiene lecturer stated: “we do it in the first six months of the first year, because that provides them with a basic knowledge of everything that goes on. So, they do anatomy, microbiology,

physiology, and pharmacology during the second semester" (OHL1). These lecturers suggest that theoretical courses for the oral hygiene and dental therapy degrees offering both qualifications are similar.

A dental therapy lecturer described the differences and similarities between oral hygiene and dental therapy curricula as follows:

> first and second year. It's similar. I think it's the third year that's different. So, with the first year, they do oral biology. Dental clinical practice it's similar in the second year, even restorative materials, the hygienist does the similar course its the exam paper is different, because the scope is different. So, this, but they attend the same lectures, and the oral health clinical practice is the same for therapists and hygienists, but in the final year we change. (DTL2)

It is not clear from this response and the other interviews to what extent the curricula are the same. Therefore, I provide a broad analysis of the theoretical courses of 1st and 2nd years[41] for the bachelor in oral hygiene and the bachelor's degree from different universities.

This analysis can be linked to the previous section regarding whether knowledge for preparation for work is sufficient or not and how this is linked to confidence to perform procedures autonomously. Here I examine curriculum documents (rule books) to show the first and second-year courses offered in oral hygiene and dental therapy qualifications at three universities see Table 16 below. I use distinctions from my Masters' dissertation to analyse the different curricula (see pages 92 -94). I use the credits allocated to each course which is a representation of the time allocated to the different types of knowledge. In the table below, the courses and credits sourced from each university' rule books are outlined for the first and second years of study. In this table, I grouped courses which focus on five knowledge types; soft-pure/applied knowledge (e.g. community studies, behavioural sciences) is highlighted in blue, clinical applied knowledge (e.g. Clinical oral Health I, Preventive dentistry) in orange, hard-pure knowledge (e.g. Oral Biology, Anatomy,

[41] *The third years were not included in this analysis because it is focuses more on the areas of speciasation of each occupation. And in this analysis I tried to establish the foundational knowledge in the mid-level dental curricula.*

Physiology) in grey, hard-applied knowledge (Oral diseases, Microbiology, Periodontology) in yellow, and generic knowledge such as languages (e.g. isiZulu) and academic literacy in green.

Table 16 Mid-level dental curricula courses

	UNIV1 Bachelor Oral Hygiene	UNIV2 Bachelor Oral Hygiene	UNIV3 Bachelor Oral Hygiene	UNIV2 Bachelor Dental Therapy	UNIV3 Bachelor Dental Therapy
1st year of study	1. Health, Development and Primary Health Care (5) 2. Social Sciences for Oral Health (15) 3. Interdisciplinary Health Promotion (10) 4. Clinical Practice I (15) 5. Radiography 1 (5) 6. Clinical Oral Health I (20) 7. Human Biology for Oral Health (10) 8. Oral Biology for Oral Health (10) 9. Oral Diseases I 10) 1. Intro to Xhosa / Afrikaans (10) 2. Academic Literacy (10)	1. Community Studies (16) 2. Health and Illness Behaviour (16) 3. Foundation for Clinical Practice (16) 4. Oral Biology (16) 5. General Basic Physiology (16) 6. Intro to Anatomy & Neuroanatomy (16) 7. Anatomy Head and Neck (8) 8. Basic isiZulu Language (16) 9. Academic Skills and Clinical Practice (8)	1. Community Studies (16) 2. Health and Illness Behaviour (16) 3. Oral Biology (16) 4. General Basic Physiology (16) 5. Introduction to Anatomy (16) 6. Basic IsiZulu (16) Academic Skills and Clinical Practice (8)	1. Health and Illness Behaviour (16) 2. Community Studies (16) 4. Foundation for Clinical Practice (16) 3. Oral Biology (16) 5. General Basic Physiology (16) 6. Intro to Anatomy & Neuroanatomy (16) 7. Anatomy Head and Neck (8) 8. Basic isiZulu Language (16) Academic Skills and Clinical Practice (8)	1. Behavioural Sciences (16) 2. Dental Public Health (8) 3. Integrated Clinical Dentistry (12) 4. Oral Health I, (28) 5. Radiography I (16) 6. Oral Biology (4) 7. Anatomy (8) 8. Biology (8) 9. Introduction to Microbiology (4) 10. Applied Oral Pathology (4) 11. English for Health Sciences, (12)
	Subtotal – 120 credits	**Subtotal – 128 credits**	**Subtotal – 104 credits**	**Subtotal – 128 credits**	**Subtotal – 120 credits**
2nd year of study	1. Oral Health Promotion I (15) 2. Measuring Health and Disease (10) 3. Clinical Practice II (35) 4. Clinical Oral Health II (15) 5. Radiography II (15) 6. Periodontology for Oral Health (5) 7. Pharmacology for Oral Health (5) 8. Special Care for Oral Health (20) 9. Local Anaesthesia & Oral Surgery (10) 10. Oral Diseases II (10)	1. Dental Public Health, Ethics & Practice (16) 2. Radiography-Preclinical and Clinical Practice (16) 3. Basic Dental Clinical Sciences (16) 4. Clinical Practice in Preventive Dentistry 2 (16) 5. General Medicine & Special Patients (16) 6. Clinical Practice in Preventive Dentistry 1 (16) 7. Restorative Dentistry and Dental Materials (16) 8. Periodontology 1 (16)	1. Dental Public Health, Ethics and Practice (16) 2. Foundation for Clinical Pract (16) 3. Radiography Preclinical and Clinical Pract (16) 4. Clinical Practice in Preventive Dentistry 1 (16) 5. Anatomy-Head and Neck (8) 6. Oral Biology (16) 7. Gen Medicine, Special Patients (16) 8. Basic Dental Clinical Sciences (16) 9. Restorative Dentistry & Dental Materials (16) 10. Periodontology 1 (16)	1. Dental Public Health, Ethics & Practice (16) 2. Basic Dental Clinical Sciences (16) 3. Preventive Dentistry and Radiography 1 (16) 4. Preventive Dentistry and Radiography 2 (16) 5. Minor Oral Surgery and Clinical Pharmacology (16) 6. General Medicine & Special Patients (16) 7. Restorative Dentistry and Dental Materials – Preclinical (16) **8.** Oral Pathology, Oral Medicine (16)	1. Dental Public Health II (4) 2. Ethical Practice Management I (4) 3. Oral Health II, (64) 4. Radiography II (8) 5. Periodontology & Oral Medicine (20) 6. Applied Pharmacology (8) 7. Academic Skills II (16)
	Sub-total – 140credits	**SubTotal – 128credits**	**Subtotal – 152credits**	**SubTotal – 128credits**	**Subtotal – 124credits**

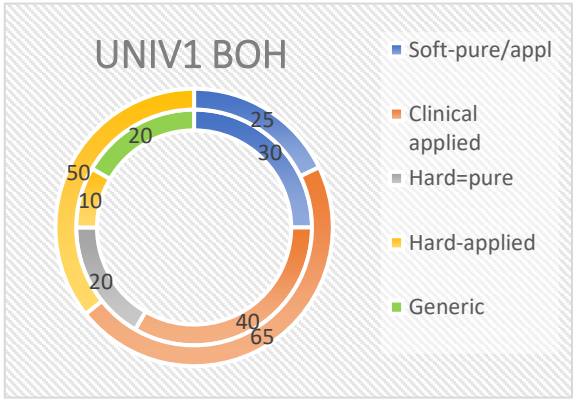
The five groups are used in the diagrams below to show how the time allocated to different knowledge types differs at the three universities. The table presents the curricula of three universities which offer mid-level dental qualifications. and UNIV3 offer two qualifications

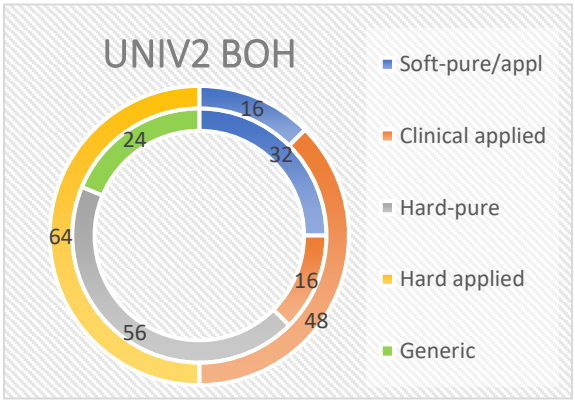
for mid-level dental professionals, they are a bachelor's degree in oral hygiene and a bachelor's degree in dental therapy. At UNIV2 both degrees have identical courses in year 1, with the same number of credits. The courses differ slightly in year 2, with the dental therapy degree introducing e.g., Minor Oral Surgery and Clinical Pharmacology. At UNIV3, the two degrees differ in both the first and second years and no courses are the same in content or length. In the oral hygiene degree, for example, Oral Biology, General Basic Physiology, and Introduction to Anatomy are offered, while in the dental therapy course Oral Biology, Anatomy, and Biology are offered in the first year of study. Up to this point, I provide a broad overview of the types of knowledge found in the mid-level dental qualifications offered at three universities.

I now move to examine the oral hygiene degree qualifications at three universities (UNIV1, UNIV2, and UNIV3) more closely. I use the courses as outlined in the table above, to determine the total number of credits allocated to the different knowledge types that each university has in the first and second years of study. The inside ring represents credits for the first year of study and the outer ring the second year.

Figure 32 shows that the oral hygiene first-year courses are comparable in terms of the time allocated to content included at the three universities.

For example, all three universities offer courses with soft-pure/applied knowledge (social sciences, aspects of Community Health), courses with clinical applied knowledge such as Clinical practice, Hard-pure knowledge such as Oral Biology, Anatomy, Physiology, generic knowledge such as an Additional Language (e.g., Zulu) and Academic literacy in the first year of study. However, these courses differ in the time allocated to each curriculum, which means the emphasis differs. One can see the total of soft-pure/applied knowledge types (UNIV1-55, UNIV2-48, UNIV3-48 credits) courses are very similar in all three universities during the first year. The clinical practice courses are longer at UNIV1 (40 & 65 credits) than at UNIV2 (16 & 48 credits) and UNIV3 (48 credits). While at UNIV1 the hard-pure knowledge is the shortest in the first year.





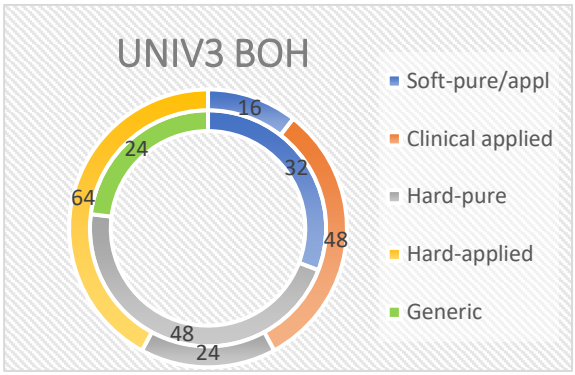
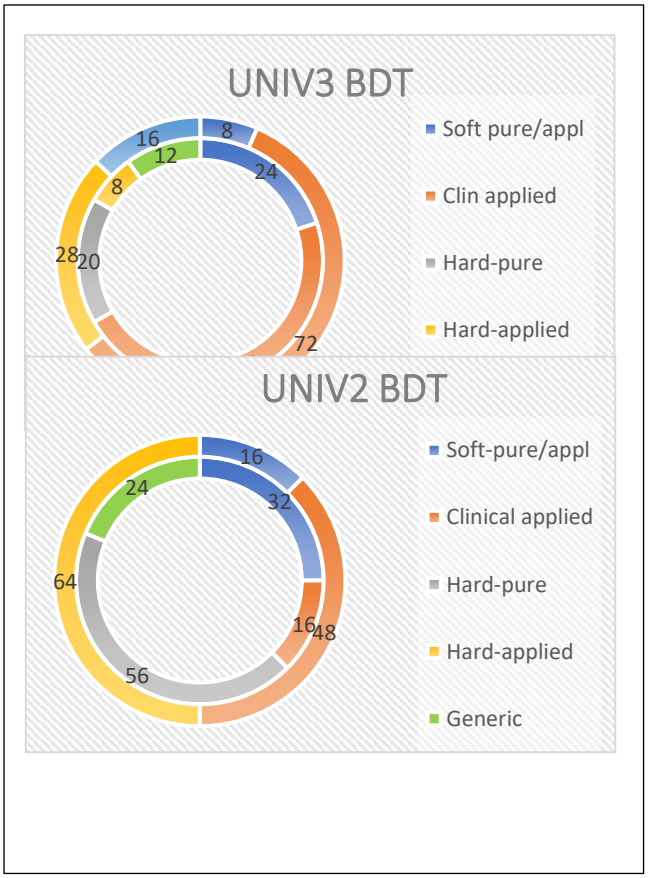


Figure 32 Knowledge types in oral hygiene curricula

The hard-applied knowledge is of similar length of time at all three universities (50, 64, 64 credits) and is offered mainly in the second year of study. This analysis suggests that theoretical knowledge in the first and second years of study of oral hygiene degrees in these three universities has a substantial focus on hard-pure (Oral biology), soft-pure (Social sciences) and clinical-applied (Clinical Practice or Basic dental sciences) knowledge types which are outlined on pg.94 in Chapter 4.

When examining the dental therapy degree courses at the two universities UNIV2 and UNIV3, there are a few similarities and many differences in terms of the time allocated to different knowledge types. Figures 4 and 5 show that soft-pure/applied (UNIV2 - 48 credits, UNIV3 – 32 credits) are similar in terms of time for both the first and second years at the two universities. While at UNIV2, hard-pure knowledge (56 credits) has twice as much time as UNIV3 (20 credits) in the first year. UNIV3 has more time allocated to Clinical Practice (56 & 72 credits) than UNIV2 (16 & 48 credits). This analysis shows that the theoretical Soft-pure/applied knowledge in the first and second years of study of dental therapy degrees in the two universities differ. UNIV2 has a bigger focus on hard-pure (Oral



Biology) knowledge and UNIV3 has a bigger focus on clinical applied knowledge (Clinical practice).

Figure 33 Knowledge types in dental therapy curricula

When we look at the order of the knowledge types according to the years it is offered in each qualification we see that UNIV1 BOH and UNIV3 BDT have more soft-pure/applied and clinical applied knowledge in the first year of study. While UNIV2 BOH and BDT, UNIV3 BOH have more hard-pure and hard-applied knowledge in their first years. In the second year of study, clinical-applied and hard-applied knowledge was greatest in all the curricula. Showing more integration of knowledge in the second year of study.

This analysis of the bachelor in dental therapy and the bachelor in oral hygiene first and second years at different universities illustrates that the focus of knowledge differs even though the professional roles are similar in terms of preventive. The content outlined in the intended curricula for mid-level dental qualifications above shows the knowledge which underpins preparation for independence and the elevation of status for these occupations. What has become apparent is that;

- Three university degrees UNIV2 & UNIV3 BOH and UNIV2 BDT focus more on hard-pure (Anatomy, Physiology, Oral Biology) knowledge than UNIV1 BOH and UNIV3 BDT where they focus more on clinical-applied knowledge (Clinical Practice, Integrated clinical dentistry etc.)
- There are also differences in focus on clinical-applied knowledge, with some curricula having little to no clinical-applied knowledge in the 1st year (UNIV2 BOH & BDT, UNIV3 BOH) and others having a strong focus on clinical-applied knowledge in the 2nd year of study (UNIV1 BOH and UNIV3 BDT).

This indicates that the three degrees (UNIV2 & UNIV3 BOH and UNIV2 BDT) have a greater focus on hard-pure and soft-pure/applied knowledge types, which assist in instilling theoretical knowledge for decision-making when working independently. Other universities have a less significant emphasis on hard-pure and soft-pure knowledge types and have a greater focus on clinical-applied knowledge which focuses more on techniques and could hamper their students' decision-making abilities.

The above analysis of the curriculum does not provide sufficient evidence of the knowledge which underpins the specific contested procedures of hygienists. Thus, I turned to conduct a specific examination of the content for the local anaesthesia procedure as an example of how knowledge is integrated into curricula for oral hygiene, dental therapy and dentistry.

The UNIV1 bachelor in oral hygiene curriculum shows how a procedure such as local anaesthesia transitions from theory to practice and assists students in decision-making for performing this procedure. An oral hygiene lecturer explained how local anaesthesia is integrated into their curriculum:

> local anaesthesia, it's one of our modules it's not separate and that basically has your Local Anaesthesia, that covers your expanded functions in 2nd year and it's integrated into 3rd year. So, your expanded functions are incorporated into each of these and almost taken up into certain levels where they are introduced in the 2nd year to the theory and to preclinical and maybe they get to clinical in the 2nd year that golden thread goes through to the 3rd year. (OHL5)

In this statement, the lecturer explains how local anaesthesia is taught at this university. She notes the considerable integration of local anaesthesia theoretical knowledge and practical skills in the curriculum. The integration she described is illustrated in the table which specifies that the theoretical knowledge is taught in three modules, one module (Human Biology for Oral Health) in the first year and two modules (Local Anaesthesia & Oral Surgery, and Pharmacology for Oral Health) in the second year of study. While the practical components are performed in other modules (Clinical Practice III) in the third year. The contents of each module relevant to local anaesthesia have been extracted from university module outlines and are illustrated in Table 17 below.

Table 17 Oral hygiene courses that underpin local anaesthesia

	Course/Module	Contents	YoS	Hours
UNIV1 BOH	Human Biology for oral health	The integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive and urinary systems. • Practicals on gross anatomy • Blood, haemostasis, blood types, hemodynamics and blood pressure. • Principles of homeostatic control • Electrolyte and fluid balance • Acid-base balance • Calcium metabolism	1st year	48hrs lectures 12hrs practicals

		skull and mandible. • structure and function of the major salivary glands including analysis of salivary composition. • lymphoid structures of the oral cavity • structure and function of the muscles of mastication including origin and insertion. • innervation of the maxilla and mandible		
	Pharmacology for oral health	Sedatives and Anxiolytics o Mechanism of action, effects, side effects, toxic effects, clinical uses Anaesthetics o Conscious sedation o Indications o Contra – indications o Mechanism of action o Pre – medication o Routes of administration o Stages of analgesia o Phases of general anaesthesia o Tranquilizers: Mechanism of action, effects, side effects, toxic effects and clinical uses	2nd year	26hrs lectures
	Local anaesthesia & Oral Surgery	Local Anaesthesia • relevant anatomy • Osteology • Sensory and motor innervations • Muscles of mastication • pharmacology of LA • techniques: infiltration and block • adverse reaction to LA • contraindications to LA • complications	2nd year	50hrs lectures 10hrs practicals
	Clinical Practice III	Clinical practice of the oral hygienist • The oral environment • Chair-side education: a patient-centred approach • The dental hygiene process of care – different approaches to patient care • Writing and presenting a case report • Relaxation and complementary therapies • Paediatrics • Periodontics, including splinting mobile teeth • Orthodontics • Prosthodontics • Occlusal and temporomandibular disorders • Dental implants • Esthetics in dentistry, including vital tooth bleaching • **Oral and maxillofacial surgery** • Ethics and professionalism • Marketing the profession • Review of instruments, materials and products • Preventive care, including fabrication of protective mouth guards • Basic medical and dental emergencies	3rd year	120hrs Contact with lecturers

From Table 17 above, we can see that in the first and second years, two modules include knowledge which underpins local anaesthesia, these are Human Biology for Oral Health (60hrs) and Pharmacology for Oral Health (26hrs). The Human Biology for Oral Health module for example includes topics such as; innervation of the maxilla and mandible, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive and urinary systems. Pharmacology for oral health incorporates; Routes of administration, Stages of analgesia, Phases of general anaesthesia, Tranquilizers: Mechanism of action, effects, side effects, toxic effects and clinical uses. The Local Anaesthesia & Oral Surgery module covers 50 hours of theory and 10 hours of practical work and includes topics such as; techniques: infiltration and block, adverse reaction to LA, contraindications to LA, and complications. The three modules in this oral hygiene curriculum cover a range of topics that prepare hygienists for performing local anaesthesia procedures. The Clinical Practice III module offered in the third year is where local anaesthesia is integrated with other clinical areas in 120 hours and includes the topic of oral and maxillofacial surgery. What is not clear from the module outline is how much theoretical and practical time is spent specifically on the local anaesthesia component in the Clinical Practice III module. What this example shows is that local anaesthesia is incorporated into the curriculum. The comprehensiveness of the knowledge ensures that

students will have adequate theoretical and practical knowledge to make decisions about this procedure independently.

The contents in the modules of the UNIV2 Bachelor of Dental Therapy which prepare for local anaesthesia are also outlined here (see Table 18). There are five modules on the UNIV2 bachelor in Dental Therapy degree, which includes knowledge that informs the procedure of local anaesthesia.

In the first year, three modules namely, Oral Biology, General Basic Physiology and Introduction to Anatomy and Neuroanatomy provide content which makes up the theoretical foundation. In the second year, there are three modules linked to local anaesthesia, these modules Basic Dental Clinical Sciences, General Medicine & Special Patients, and Clinical Practice in Preventive Dentistry 2, which include mainly clinical applied knowledge and introduce the practical aspects of performing the techniques and integrating knowledge for example from Pharmacology.

Table 18 Dental therapy courses that underpin local anaesthesia

	Name of Module	Contents	YoS	Credits
UNIV2 BDT	Oral Biology	Dental histology (hard tissues), dental histology (soft tissues), tooth morphology, development of the dental and oral tissues and oral physiology and biochemistry.	1st year	16
	General Basic Physiology	No records	1st year	16
	Intro to Anatomy & Neuroanatomy	No records	1st year	16
	Anatomy Head and Neck	No records	1st year	8
	Basic Dental Clinical Sciences	infection control; microbiology; general medical pathology; principles of history-taking and diagnosis-making; principles of treatment planning; various diagnostic and therapeutic processes; and the management of common medical disorders. The student should also have a basic knowledge of clinical pharmacology, drug metabolism, indications, contraindications	2nd year	16
	General Medicine & Special Patients	Theoretical knowledge and management techniques related to the practice of Dental therapy of neurological, neuromuscular, musculoskeletal, dermatological, sensory, and mental disorders, the adolescent, geriatric, pregnant patients, patients with oral cancer, cleft lip and/or cleft palate, blood disorders, basic medical knowledge of headaches, hypertension, diabetes, kwashiorkor, tuberculosis, oedema, blood pressure and the pulses, food balance and nutrition, and the management of medical emergencies.	2nd year	16
	Clinical Practice in Preventive Dentistry 2	the general principles in surgery, and theory and practice of Local Anaesthesia. The Medical Emergencies component focuses on medical history taking, vital signs, and first aid management. diagnostics, treatment planning and implementation of the treatment plan; administration of local anaesthesia (LA)	2nd year	16
	Clinical Practice in Oral Hygiene 2	diagnostics, treatment planning, and implementation of the treatment plan. The student develops clinical skills in administering Local Anaesthesia relevant to the scope of practice	3rd year	16

The content analysis for local anaesthesia in both the Oral Hygiene and Dental Therapy qualifications at two different universities reveals that the specialised knowledge of local anaesthesia is well integrated into the three years of study. There is good coverage of the specialised knowledge and practical skills required to perform the procedure and is paced over three years of study. This suggests that mid-level dental occupations receive adequate specialised knowledge and skills to perform this procedure. To assess whether the extent of knowledge will imbue confidence in making decisions about local anaesthesia in students, I turn to examine the content for local anaesthesia in a curriculum for dentistry students.

When examining the specialised knowledge of local anaesthesia for the UNIV1 Dentistry degree, I found significantly more courses which include knowledge of this procedure. Table 19 shows that there are fourteen courses which have contents linked to the procedure.

Table 19 Dentistry courses that underpin local anaesthesia

	Module Name	Content	YoS	Cred
UNIV1 DENT	Chemistry for Dentistry	• Basic concepts of chemistry • Atoms, molecules and ions • Chemical reactions • Quantitative information about chemical reactions (Stoichiometry) • Atomic structure and periodic trends • Bonding and molecular structure • Gases and their properties • Electron transfer reactions • The chemistry of acid and bases • Hydrocarbons, Alcohols and Ethers, Aldehydes and Ketones, • Carboxylic Acids and Esters, Amines and Amides, Carbohydrates, Proteins, Lipids	1st year	15
	Life Sciences 141	Cell structure and organelles and an introduction to processes taking place in them. DNA replication; DNA control of protein synthesis and thereby biochemical processes, mitosis, meiosis, chromosomes and genes, Mendelian and biochemical genetics, evolution.	1st year	15
	Physics for Dentistry 113	An introductory appreciation of science as a way of knowing • An introduction to vectors: representation, adding, subtracting, scalar product, vector product • Equilibrium of a rigid body: Newton's Laws, first condition of equilibrium, friction, the second condition of equilibrium (moment of a force/torque). • Elasticity: stress, strain and Young's modulus. • Hydrostatics: pressure in a fluid, buoyancy, flotation, Pascal's principle, Archimedes' principle, Bernoulli's principle. • X-rays: description, creation, and safety. • Electricity: Coulomb's law, electric field, electrical potential energy, capacitors and dielectrics, simple circuits	1st year	15
	Human Biology 105	Organization of the human body. • Principles of homeostatic control. • Review of the cell physiology. • Methods of studying cells. • Early embryology. • Connective tissue histology and chemistry. • Functional histology of epithelia, cartilage, bone, teeth, skin, neural tissue, the lymphatic system and muscle. • Electrolyte and fluid balance. Blood, Haemostasis, Blood types, Immunology and associated abnormalities. • Anatomy of the Thorax. Mechanics of breathing. • Organization of the CVS. • The cardiac cycle, Starling's Law and cardiac output. • Histology of blood vessels. • Haemodynamics. • Blood pressure. • Control of the CVS. • Cardiovascular disease. • Structures and histology of the respiratory system. • Lung volumes and composition of alveolar air. • Transport of O2 and CO2. • Control of breathing. • Anatomy of the pelvis and abdomen. Anatomy and Histology of the kidney. • Glomerular filtration. • Renal control of body fluids. • Acid-base balance. • Anatomy and physiology of the reproductive system	1st year	40
	Human Biology205	Body composition nervous system • Nutrients and non-nutrients in diet • Anatomy/histology of the GIT • Mastication and swallowing • Histology and physiology of salivary glands, stomach, pancreas, liver, biliary system, intestines • Review of metabolism. Insulin and glucagon • Diabetes mellitus • Calcium and bone metabolism • Hypothalamic and pituitary hormones • Temperature regulation • Adrenal glands • Menstrual cycle • Hormones in pregnancy,	2nd year	40

		lactation, contraception and HRT • Overview of the male reproductive system • Developmental embryology of the head, neck and central nervous system • Gross anatomy of the head and neck region • The cranial nerves • The functional units of the central nervous system • Structure and function of sensory pathways • Structure and function of motor pathways • The Autonomic system		
	Oral Biology	• general craniofacial embryology and structure • bone • odontogenisis and microscopic structure of dental tissue • the periodontium • tooth eruption • the sensitivity of teeth • the oral mucosa • the salivary glands and saliva • the temporomandibular joint • lymphoid structures of the oral cavity • Relevant terminology to describe hard and soft tissue of the oral cavity • Significance of tooth morphology	2nd year	25
	Prin of Medicine and General Surgery (MFOS)	general principles of history-taking • general principles of physical examination • the basic clinical signs and symptoms of the normal cardio vascular system and the disorders ¬ Abnormal pulse (basic principles) ¬ Hypertension ¬ Heart failure ¬ Cardiac arrest ¬ Heart valve lesions (basic principles) ¬ Rheumatic disease, infective endocarditis • the basic clinical signs and symptoms of the normal respiratory system and the disorders ¬ Respiratory failure ¬ Pneumothorax ¬ Obstructive lung disease ¬ DVT and Pulmonary embolism • the basic clinical signs and symptoms of the normal alimentary system and the disorders ¬ Liver failure ¬ Hepatitis • the basic clinical signs and symptoms of the normal genito-renal system and the disorders ¬ Renal failure • the basic clinical signs and symptoms of the normal nervous system and the disorders ¬ Head injuries ¬ Strokes ¬ Epilepsy (Grand Mal) • the basic clinical signs and symptoms of the normal musculoskeletal system and the disorders ¬ Spinal cord injuries • the basic clinical signs and symptoms of the normal haematological system and the disorders ¬ Anaemias ¬ Platelet disorders ¬ Leukemias ¬ Bleeding disorders • integration of history and examination for the medical and surgical patient including ¬ The skin ¬ Eyes and ears ¬ Neck (Lymph nodes & Thyroid) • side room investigations ¬ Haemoglobin ¬ Haematocrit ¬ Blood glucose (for DM) ¬ Urine tests ("Dipstix") • diagnostic investigations ¬ Full blood count ¬ INR, PTT and bleeding time test ¬ Serum electrolytes ¬ Renal function ¬ Liver function ¬ CRP and sedimentation rate ¬ HIV, hepatitis, syphilis tests ¬ Chest radiography ¬ MCS of urine/blood	3rd year	15
	Systemic Pathology	• Disorders of the nervous system • Cardiovascular abnormalities • Disorders of bone and joints • Disorders of skin • Respiratory disorders • Disorders of the kidneys • Hematopoietic and lymphoid diseases • Endocrine abnormalities • Gastrointestinal disorders • Hepatobiliary disorders • Blood and bone marrow pathology	3rd year	10
	Dental Pharmacology	Basic pharmacodynamics • Qualitative pharmacokinetics • Aspects of pharmacotherapeutics • Chemical transmission and the autonomic nervous system • Autocoids • NSAIDs • Antimicrobial chemotherapy • Cancer chemotherapy • Drugs and the immune system • Drugs acting on the cardiovascular system • Hormones • Drugs acting on the Endocrine system • Drugs acting on the Central Nervous System • Drugs used in Gout • Analgesics • Respiratory drugs • Drugs and the GIT • Antimicrobial chemotherapy • Antihelmintic drugs • Drugs affecting the fluid and salt balance • Vitamins • The P-drug concept and basic principles of pharmacotherapy • Review of the pharmacotherapy of selected disease states • Practicals: Clinical skills and case studies	3rd year	20
	Maxillofacial & Oral Surgery I	History taking • Basic examination of patient – extra oral and intraoral • Special investigations – radiographs and laboratory investigations (i) Lab Tests • Infection Control • Relevant anatomy • Pharmacology of local anaesthesia • Techniques – infiltration and block techniques • Adverse reactions to local anaesthetics • Complications to local anaesthetics • Cardio Pulmonary Resuscitation • Instrumentation • Exodontia – principles • Clotting mechanisms	3rd year	10
	Maxillofacial and Oral Surgery II	Maxillofacial and oral/dental trauma • Medical emergencies • Infective conditions of the maxillofacial and oral region • Surgical endodontics (apicectomy) • Impacted teeth • Sinus related conditions • Bleeding tendencies • Salivary glands and related conditions • Management of cysts and tumours of the mouth and jaws • Temporomandibular joint dysfunctions • Management of facial pain • Pre-prosthetic surgery including implantology • Orthognathic surgery • Management of cleft- and craniofacial deformities • Diverse treatment modalities	4th year	20
	Anaesthesiology and Sedation	physiology – cardiovascular, central nervous and respiratory systems • conscious sedation, including relative analgesia – background, equipment, patients, techniques, etc. • pharmacology related to anaesthesia • premedication; muscle relaxants and endotracheal intubation • operating theatre techniques and the anaesthetic theatre machines • conduct of anaesthesia; monitoring and post-	4th year	20

		operative care • anaesthetic complications; cardio-pulmonary resuscitation • anaphylaxis, allergy and the toxic effects of local anaesthetic drugs		
	*Maxillofacial and Oral Surgery III	Advanced exodontia and surgical removal of teeth • Maxillofacial and/or dental trauma • Medical emergencies • Infective conditions of the maxillofacial and oral region • Surgical endodontics (apicectomy) • Impacted teeth • Sinus related conditions • Bleeding tendencies • Salivary glands and related conditions • Management of cysts and tumours of the mouth and jaws • Temporomandibular joint dysfunctions • Management of facial pain • Pre-prosthetic surgery including implantology • Orthognathic surgery • Management of cleft- and craniofacial deformities • Dental anaesthesiology and sedation	5th year	10
	Clinical Dentistry V	Integration of diagnosis, clinical approaches, treatment options, treatment plans, and clinical treatments • Integrated case-based discussions and tutorials • Clinical application of the following disciplines: o Conservative dentistry o Prosthetic dentistry o Orthodontic dentistry o Paediatric dentistry o Oral radiology o Maxillofacial and oral surgery o Oral Medicine and periodontology o Oral Pathology o Pharmacology • Anaesthesiology	5th year	80

Four courses in the first year: Chemistry for Dentistry, Life Sciences 141, Physics for Dentistry 113, and Human Biology 105, with a total of 85 credits. There are two courses in the second year: Human Biology205 and Oral Biology, totalling 65 credits. The third year has four courses: Principles of Medicine and General Surgery (MFOS), Systemic Pathology, Dental Pharmacology, and Maxillofacial & Oral Surgery I, with 55 credits. There are two courses in years four and five respectively. The fourth year has Anaesthesiology and Sedation, with 40 credits and the fifth year has Maxillofacial and Oral Surgery III and Clinical Dentistry V, with a total of 90 credits. It is unclear from the rule books how much time is spent on theoretical knowledge and practical skills. What is clear is the vast extent of topics which is included and spread over the five years in the dentistry curriculum. The specialised knowledge underpinning the local anaesthesia procedures for dentists ought to make these students confident to make decisions when performing the procedure. In light of having examined the specialised knowledge of the local anaesthesia procedure for the three occupations, it is apparent that the dentists are justified in believing that their knowledge base is superior to that of mid-level dental occupations. However, the point that this analysis makes is that mid-level dental occupations have sufficient knowledge to perform the procedure, albeit at a much more technical level because it does not have such deep foundational knowledge as dentists.

By examining the curriculum documents of mid-level dental qualifications, it is evident that the knowledge of local anaesthesia procedures is systematically structured and paced over three years. Which should inculcate the ability to work independently. However, oral hygienists still doubt their abilities to perform these procedures and feel that their

education did not give them status, this will emanate from the lack of deep knowledge as shown above. The content of the knowledge is an important factor in the lack of confidence that oral hygiene students display for performing local anaesthesia, yet there are other factors in the preparation of hygienists which complicate this further.

The link between what is written in curriculum documents and what happens during teaching and learning, an oral hygiene lecturer at a different university mentioned:

> I don't think that there's anything wrong with the curriculum on paper. The outcomes that have been put on paper are the outcomes that are required for the competencies that we want the students to have, that's not, I don't think that's the problem. I think it's the implementation of how you teach what is on paper to students for you to get the desired outcome and the desired product with the competencies that you need. The interpretation of administration of local anaesthesia. On paper, it's written. The students need to have anatomical knowledge. Students have to have the lectures on you know LA, the drug actions. They do all these things. All of that is on paper. So the curriculum itself look may actually look sparkling. However, the interpretation by lecturers of that and implementation in the classroom and in the clinic chairside teaching is where the disconnect happens, and then you see it in the outcome or in the product, or the competency skills that the students have, that something didn't happen. (OHL4)

This lecturer provides several likely justifications for why oral hygiene students lack self-confidence and alludes to it being something about the teaching. First, despite the curriculum being well written, implementation is difficult when lecturers do not seem to understand the curriculum. She mentions “few lecturers that actually understand and are familiar with the curriculum” (OHL4). Second, when students are assessed in clinical settings, the underlying knowledge for clinical reasoning is not evaluated, the lecturer states that “you're not testing clinical reasoning as a therapist, because you probably don't think that the hygienist needs to be able to reason technically. Do you think that the students are not supposed to make that clinical judgment?” (OHL4). In this scenario, she is suggesting that therapists (the same as dentists mentioned earlier) control the knowledge which they think hygienists ought to receive. Third, not all oral hygiene lecturers have transitioned from working under supervision to independent practice, she explains

> As an academic in any institution for many years, you only using the knowledge that you were taught to continue in your competency skills or you know in your profession and the majority of staff members have been taught under supervised practice. And in the diploma program and now obviously with all the programs having been converted to the bachelors and I think the shift is not as natural. (OHL4)

With this statement, the lecturer refers to the fact that there has been a slow uptake of the expanded scope among oral hygiene lecturers. This means that the role modelling that these lecturers extend to students is still one of subservience to dentists. The explanation by this lecturer provides possible reasons for the lack of confidence that oral hygiene students have upon completion of their studies.

This section shows preparation for work from a broad conception of knowledge in curricula. It illustrates that intended curricula integrate different knowledge types which inform the status of the practitioner exiting from the particular university. Further, it shows that preparation for one of the contested procedures (local anaesthesia) is specified in topics and integrated into different modules and carefully transitions from theory to practice. The concern is about how knowledge of such procedures is taught and the role that lecturers play in modelling the ability to perform the procedure. This proposes that the enacted curriculum is contradictory to the intended curriculum and is producing students who are not confident to perform procedures independently.

8.3.5 Summary of preparation for work through increasing knowledge

This theme focuses on the preparation for work through deepening curriculum knowledge. Broadly the idea of advancing professional status is about developing qualifications and providing the knowledge to agree that hygienists work independently. The preparation for performing contested procedures was seen from an analysis of mid-level dental programs. This showed how knowledge in intended curricula transitions from theory concepts into practice in different modules.

What is noticeable in each subtheme is that the quotations sometimes indicate contestations, while others show none, see Figure 34.

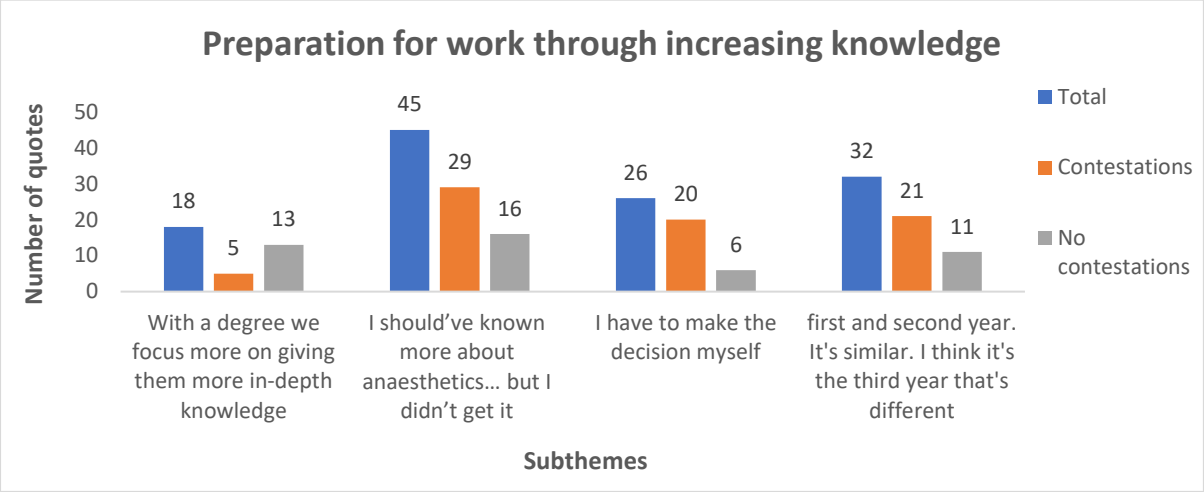


Figure 34 Quotes about Preparation for work through increasing knowledge

The first subtheme 'with a degree we focus more on giving them more in-depth knowledge' has 18 quotes of which five quotes contest that mid-level dental qualifications are advancing the profession. These suggest that despite the qualifications changing, there haven't been many changes to what is taught to students. The majority of quotes (13), mainly stated by hygienists are supportive of these qualifications advancing. This shows that oral hygienists aspire to advance their occupation through the enhancement of qualifications.

The second subtheme 'should've known more about anaesthetics… but I didn't get it', has 45 quotes of these 29 are contestations about having been taught well and 16 are not contesting what students are taught. Those oral hygienists who contest the knowledge they received at university suggest that they either did not receive adequate theory or practical knowledge to make them confident to practice independently. While the rest felt that the training was adequate.

In the third subtheme 'preparing students for autonomous practice ', 26 quotes of these 20 contestations are that hygienists are not prepared well for independent practice and 6 are not contesting this, noting that they are. This theme reveals that the lack of clinical exposure during training shapes feelings of inadequacy for oral hygiene and dental therapy students, which makes them doubt their ability to make decisions on their own. The explanation

exposes hierarchies which are shaped by lecturers through methods and practices inherent in these students' training.

The fourth subtheme is about the alignment of the knowledge in curricula, 'First and second year. It's similar. I think it's the third year that's different' and has 32 quotes. There are 21 quotes which describe contestations around the knowledge found in curricula. These contestations suggest that practitioners feel that they were not adequately prepared for independence as students. The other 11 quotes do not contest curriculum knowledge and show that the focus on theoretical and practical knowledge was good. In this theme, several similarities can be seen in Oral Hygiene and Dental therapy programs even though they have varied occupational roles. The various universities intended curricula incorporate theoretical and practical knowledge to develop independent decision-making. Yet, how the knowledge is taught, makes students doubt their abilities to perform the expanded scope.

8.4 Conclusion of Dental Education and Training in South Africa

This chapter highlights several important issues that emanate from education and training. It highlights the way dental occupations relate to each other and how boundaries are maintained within the dental profession. It considers preparation for work from two perspectives. The first is that preparation for work aims to instil independence and increase the status of occupations. The second is inclusion and ordering of theoretical knowledge matters for preparation for the contested procedures, but its uptake by lecturers may be insufficient.

The claims which arise from this chapter are as follows: First, dental schools do not lend themselves to nurturing collaboration among students and lecturers from various dental occupations. Second, the poor implementation of the expanded scope of practice into the curriculum is caused by external occupations' dominance over certain procedures but also by hesitance from within the oral hygiene occupation, as lecturers position themselves as reactive agents in the implementation of policy. Third, mid-level dental lecturers are not taking up the responsibility for teaching within their occupations, which creates and maintains the hierarchical system within the dental profession. Fourth, considering the

different curricula in the dental profession, qualifications differ and hamper transitioning from one qualification to another. Fifth, the intended curriculum for the contested procedures is well outlined and shows how theoretical and practical knowledge is integrated to develop independent practitioners. Sixth, the intended curriculum for mid-level dental occupations is not necessarily enacted as envisioned, with the transitioning knowledge from theory to practical perceived as problematic. Seventh, professional recognition and status are shaped during training, yet mid-level dental professionals describe a lack of support and approval toward their occupations which starts at dental institutions.

These claims highlight that oral hygiene's full occupational scope and roles are not being given the respect and recognition required within education and training. It also demonstrates that hygienists encounter resistance from dentists and therapists during their training and that they are not in control of what they are taught. Yet, we also see that hygienists suppress their advancement by not taking control of their education and training. Finally, what can be said from the discussion is that policy developments do not inevitably lead to changes in education and training and such changes do not always filter into practice.

Observations about advancing the knowledge project highlight differences in how knowledge is valued by mid-level dental occupations. It shows that questions arise about the adequacy of knowledge of hygienists, whether developing higher qualifications has influenced their knowledge, and whether it focuses on how competence is acquired during practice and not instilled during training. These key arguments highlight the role of education and training in helping to develop oral hygiene professionals with the knowledge and skills to make autonomous decisions in practice.

This section is crucial as it shows how knowledge and specialisation are being endorsed by some actors within the dental profession while being rejected by others. It is crucial to note that there are various opinions on the changes to the knowledge base of mid-level dental occupations. Many dentist practitioners do not realise the changes in knowledge and how this may have affected how these occupations are trained for independent practice. Newer

hygienists qualifying with a bachelor's degree show a change in confidence to perform contested procedures as they regard their training to be of a higher standard. This shows that among mid-level dental occupations boundaries are starting to shift within dental institutions.

CHAPTER 9

DISCUSSION, RESEARCH CONTRIBUTION AND CONCLUSION

9. Introduction

The thesis aimed to examine how the changes in scope and autonomy of mid-level dental professionals, specifically, oral hygienists influenced professional boundaries within the dental profession in South Africa. The study was conducted to illustrate how regulations that change occupational boundaries can be put in place but may not be incorporated into daily work practices or the curriculum. Such implementation of regulations depends on the acknowledgement and acceptance of all stakeholders involved in the development of an occupation. This study points to bigger debates in the literature on professionalisation. These debates centre around occupations and the links to their work, their control over jurisdiction and the social structures which influence occupations. From this the study has a few specific objectives, these include;

1. To explore perceptions of the expanded scope of work of hygienists and their effects on professional relations in the dental profession.
2. To scrutinise how regulatory changes affect perceptions of the daily work practices for mid-level dental occupations (specifically oral hygienists).
3. To examine how the preparation for work in a diversifying sector is shaping the way work is performed daily by mid-level dental occupations.

One of the key concerns raised by various authors in the rationale of this study is that competition for professional jurisdiction in the dental profession hinders the delivery of dental care (Reinders et al., 2017b; Brocklehurst et al., 2014a; Nash, 2012). The study is positioned in the interface between education and work and examines how changes to scope and autonomy may influence the interrelations of occupations. Through this, the chapter seeks to answer the main research question of this study: How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced professional boundaries within the dental profession? The main finding of the research suggests that even though the government enacted regulations which allow oral hygienists

an expanded scope and greater autonomy, uptake of the new scope and independent practice in this profession has been slow. The findings attribute this largely to professionals' perceptions of a lack of preparedness. However, there are other vital justifications which complicate such a transition. These include among others: their perceptions of their roles which are that they are foremostly preventive agents, the role of the state in supporting their expanded roles, their acceptance of working without supervision, and the dominance of other dental occupations.

This chapter aims to provide a comprehensive account of the research findings and their interconnections with literature to emphasise the contributions that this research is making within the fields of dentistry and occupations.

The thesis shows that there has been very little change in what happens in practice and during the preparation for the work of oral hygienists in South Africa. This also suggests that contestation of who controls power may still be widespread within the dental profession. Thus, this study highlights the difficulties of changing the division of labour despite changes to both regulations and curriculum and this contributes to debates about professional boundaries.

9.1 Synopsis of Chapter 9

The chapter provides a composite picture of how the changes in regulations influence boundary shifts in the dental profession. It highlights boundary contestations that develop between dental occupations, particularly between dentists and hygienists.

Section 9.2 focuses on central claims emanating from the findings. Here the findings are coupled with the literature on the professionalisation of occupations, using the conceptual framework to analyse the links between education and work. It highlights boundaries which come from the outside of an occupation, by actors such as dentists, and the dominance dentistry has over other related occupations. At the same time, there are also boundaries coming from within an occupation: my findings make clear that oral hygiene limits its

advancement through the intraprofessional contestations for the professionalisation of the occupation.

The next section 9.3 focuses on consistencies and inconsistencies that emanate from the responses of dental professionals. This discussion shows contradictions which come from the responses given by the participants.

Section 9.4 concludes the discussion of the research project, and outlines the answers to the research questions. The following section 9.5 outlines the limitations of the study, and 9.6 provides recommendations for further research concerning this topic. Section 9.7, describes a high-level explanation of the contribution that this thesis makes empirically and theoretically. Finally, I conclude the chapter and make a definitive statement to answer the main aim of the study, which is to answer the main question: "How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced professional boundaries within the dental profession?". This chapter brings together answers to the research sub-questions; for convenience of reading they have outlined again as follows:

1. What are dental professionals' perceptions of the work practices of oral hygienists?
2. How are oral hygienists responding to the policy amendments?
3. How are dental curricula, preparing learners for shared procedures (e.g., local anaesthesia, restorations)?
4. How does examining the work and education of dental occupations help us to understand inter-professional conflict?

9.2 Analysing the Jurisdiction of Dental Occupations

Despite the regulations changing for oral hygienists and that they now have an expanded scope and greater autonomy, shifts in this occupation have been slow and have not been taken up by most hygienists. The research findings from chapters 6, 7, and 8, illuminate how the jurisdiction of dental occupations is perceived. Literature from the sociology of professions indicates that the type of work that is performed, how a professional's work addresses the problems over which it claims control and a discipline's abstract knowledge are factors which affect their jurisdiction (LaMere, 2012a). This is why I

used Abbott's (1986) three considerations for analysing the jurisdiction of occupation, as seen in Figure 35 below which provides lenses to examine the contestations that occur between occupations. First, Abbott indicates that one must understand the link between an occupation and its work through the actual work that is performed. Second, one must recognise the social structures that maintain and support the occupation. Third, one must be able to determine the type of control an occupation has over its work and how control is changing for occupations (Abbott, 1986, p. 190).

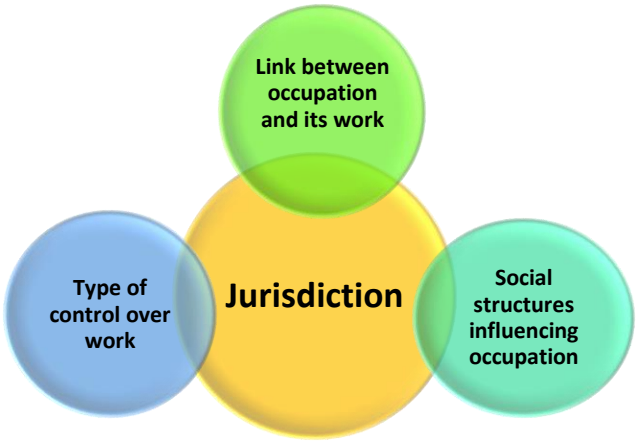


Figure 35 Abbotts considerations for analysing the jurisdiction of occupation

These propositions by Abbott allow me to emphasise the links between dental occupations and their work. In this chapter, I describe the perception of the actual work of dental occupations (specifically oral hygienists), the social structures that have a bearing on the advancement of the oral hygiene occupation, and how control over work is changing within the dental profession. In my discussion of these three main areas, the claims emphasise how boundary contestations manifest themselves within the dental profession in South Africa. When we consider the link between an occupation and its work with educational preparation for work, we see that an occupation requires specialised knowledge for decision-making in the workplace. The social structures which are established in educational institutions can constrain or enable the advancement of occupations. Control over work relates to the types of knowledge that are included in the curricula of an occupation. From these claims, this chapter highlights the boundary contestations in the dental profession and links the research findings to the literature and conceptual framework.

9.2.1 The link between occupation and its work

In trying to get a better understanding of the link between oral hygiene occupation and their work, one has to examine the number and type of procedures an occupation performs and how these may influence their professional status, referral, and teamwork. Therefore, I describe the regulated scope of work of this group, the work they take up, and the boundary contestations that evolve from their work.

9.2.1.1 Claim 1 - Hygienists' work practices have not changed much after changes to their scope

This claim comes from the fact that despite the expanded scope granted to oral hygienists, they are still doing mainly the original scope procedures and haven't taken up their expanded scope. Numerous international authors show that despite the scope expanding, mid-level dental professionals perform mainly basic procedures (Mishler et al., 2018; Nash, Friedman, Kardos, Kardos, Schwarz, Satur, Berg, Nasruddin, Mumghamba, Davenport, et al., 2008). Lukhozi et al (2012) and Gordon (2015) indicate that in South Africa, the execution of the expanded scope for hygienists has been inadequate too. In this regard, the findings of this study confirm that mainly the basic scope such as scaling and polishing is performed by hygienists.

My study shows that boundary contestations about scope come mainly from dentists, but also from hygienists themselves. First, dentists are establishing boundaries around the type of procedures hygienists are allowed to perform. Dentists seem threatened by the expansion of scope and want mid-level dental occupations to be curtailed to do only basic procedures. Contestations from dentists are mainly about hygienists performing complex procedures such as local anaesthesia, diagnosis-making, and preventive resin restoratives. These concerns by dentists are aligned with other studies which show that dentists feel mid-level dental professionals are not fulfilling their primary roles (Bhayat et al., 2008; P. Singh, 2011). The dentists also claim that the delegation of expanded procedures is negatively affecting their income and that hygienists and therapists are taking away their work and income. The growing trend of discontent around economic practicality by South African dentists has been reported by Snyman (2016). This study reveals that some dentists in

private practice are concerned that the expansion of scope for mid-level dental professionals will reduce dentists' future income.

Second, oral hygienists are not eager to perform procedures such as local anaesthesia, diagnosis-making, and preventive resin restoratives. This goes against previous studies (Gordon & Rayner, 2004; Toogood et al., 1998) which show that local hygienists have advocated for the expansion of their scopes such as local anaesthesia. The findings show that hygienists are not doing some of the procedures from the expanded scope in practice. This can also be seen from a review of expanded functions internationally, where local anaesthesia is more likely accepted in most countries compared to restorative treatments (Bozia et al., 2023) One of the main reasons is that hygienists believe that some procedures are taking them away from their original role of being preventive agents. This shows that hygienists are not persuaded to take up their scope as it is not aligned with their core sense of purpose as an occupation, and are contesting the shift in boundaries placed on them by the state. This perspective is mainly from older hygienists and some lecturers who believe that broadening the scope impinges on their specialisation and can be considered as a challenge that would confine their scope and their training, thus delaying their advancement. Hygienists are also concerned about the costs of setting up practices and the materials they require. These high costs have been outlined as a concern for dentists too (Matjila et al., 2019; Snyman, 2016; Green, 2014), which warrants hygienists' fears about opening independent private practices. These findings are aligned with reported international tensions and boundary contestations are not limited to the South African experience (Reinders et al., 2017b; Jang et al., 2017; Adams, 2004; Gatermann-Strobel & Perno Goldie, 2005).

9.2.1.2 Claim 2- Hygienists want more recognition, but they believe that some procedures are beyond their jurisdiction and they are intimidated

My findings show that hygienists want to be recognised as key role players in the dental profession, but perceptions of roles, expansion of scope, and the hierarchy of care have not changed within the dental profession.

The literature suggests that mid-level dental professionals are not being utilised to their full capacity (Mishler et al., 2018). The findings of this study show that hygienists' preventive role is perceived as an important part of dental service provision and that they are perceived to have a strong professional identity. Despite the positive perceptions about the role of hygienists, the specifics of their expanded scope are not widely known by dentists and therapists, who show very little interest in the scope of hygienists. This has slowed the referral of expanded procedures to hygienists and is attributed to them not performing their full scope.

Further, the hierarchy of care within the dental profession has not shifted, with dentists continuing to dominate mid-level dental occupations in terms of how their roles are defined. Oral hygienists are perceived as being at the bottom of this hierarchy and do not see a change in their hierarchical position. Hierarchy is engrained in the workplace as dentists strive to do more specialised work and those lower in the hierarchy perform basic care. The findings, therefore, show that the type of work is reserved according to the set hierarchy within the dental profession. In an international review of attitudes toward expanded functions and independent practice for hygienists Reinders et al (2017b), show that the majority of dentists and hygienists are in agreement with the expanded scope of practice. They show that very few dentists are in favour of independent practice for hygienists, while a majority of dental hygienists are in support of this. The findings in this study show that hygienists are not as eager to take up independent practice.

9.2.2 Social Structures that influence the Occupation

According to Abbott, social structural changes in professions generally aim at changing a profession's competitive position (p230). This section points toward two arenas for shaping the jurisdiction of an occupation: the labour market and the education and training institutions. These are discussed in claims 3 and 4.

9.2.2.1 Claim 3 - Structures within the labour market have influenced the extent to which oral hygienists advance

This section points to different social structures within the labour market which have shaped the occupation of oral hygiene. The findings provide evidence of how the labour market has adapted to the shift within the dental profession. This will be outlined by interrogating what happens in five key structures, namely; the state, the public, regulatory bodies, professional associations and medical aid companies.

First, I will consider the impact of the intervention by the state to approve regulations for the expansion of scope and autonomy for hygienists to assist in providing dental services in South Africa. Despite the regulations being inspiring for the advancement of oral hygienists the state has not considered how the labour market would respond to such changes. According to Bhayat & Chikte (2018a) and Strachan et al. (2011), the majority of dental professionals work in the private sector. The surplus of dental professionals generates competition to get access to patients and to control who works in particular areas. The findings indicate that the government's decision to enhance therapists' and hygienists' scope and autonomy has led dentists to believe that these two groups ought to focus primarily on poorer communities. Furthermore, dentists see urban areas as their territory and indicate that therapists and hygienists ought to be prevented from opening practices in these areas. The government has not offered financial support to hygienists to set up independent private practices and this is causing hygienists to compete with established dentists and therapists. The findings also suggest that the government should provide support to dental occupations if it is allowing mid-level dental professionals to practise independently. The changes brought about by the government have weakened dentists' legal control over mid-level dental occupations; however, dentists are finding different ways in which to establish their jurisdiction and curb others. This is supported by research in South Africa and the role government should play in providing a greater supply of human resources to improve dental service provision (Bhayat & Chikte, 2019; Mukhari-Baloyi et al., 2021; Nkambule et al., 2022).

Second, public awareness of the different types of dental occupations is low, and dentists are regarded as the main providers of dental care. The findings also show that hygienists are

aware that the public does not have an idea of what their scope of practice is. This implies that consumers are not ready for the regulation changes awarded to hygienists. A study by Ayo-Yusuf et al. (2013) shows that low socioeconomic positions and certain racial groups are significantly less likely to keep preventive dental visits. This could mean that the three dental professionals may compete for the few patients who seek preventive services. Ayo-Yusuf et al. (2013), highlight a poor uptake of routine preventive dental services in South Africa and suggest that public awareness of prevention must be enhanced. However, my findings show that the dental profession is struggling to educate the public about the role and scope of oral hygienists and dental therapists.

Third, the Health Professions Council of South Africa (HPCSA) is the regulatory body which was established to provide control over the education, training and registration for practising health professions registered under the Health Professions Act (HPCSA, 2022). The two professional boards for dental occupations collate inputs from various stakeholders to develop new scopes of practice. The findings show that many lecturers are concerned about how the scopes are written. They claim that the way the scope of hygienists is written prompts misinterpretation and leads to confusion about what must be included in training and what can be performed in practice. This means that the scope initiates contestations among dental occupations. The findings also suggest that there has been poor communication between the professional boards, practitioners and lecturers. One board member indicated that previously this was the case, but this is being addressed by the current board. Despite the professional board actively promoting the advancement of mid-level dental occupations, according to my respondents, the practitioners and lecturers do not feel that they are supported. This also points to the lack of regulatory oversight on the part of the regulatory council and the role it plays in ensuring the updated scope of practice is taught at universities.

Fourth, there are three professional associations representing the different dental occupations, dentists (SADA), therapists (SADTA) and oral hygienists (OHASA). Their mandate is to support and represent dental professionals within its ambit. The findings show that oral hygienists working as independent private practitioners are dissatisfied with

the lack of support they receive from the Oral Hygienist Association of South Africa (OHASA). This is even though the association advocated for their independence. Oral hygienists indicated that the association did very little to promote the occupation to the broader public. The main focus of the association was said to be to offer continued professional development to oral hygienists. The South African Dental Association of South Africa (SADA) and the South African Dental Therapy Association (SADTA) declined to comment or to be interviewed for this study. Responses from the participants showed that SADA played a dominant role in the dental profession as they control the codes which are allocated to each procedure which has to be claimed for in independent practice. This means that SADA has control over the procedures that hygienists can claim from medical aids. The above findings suggest that the Professional Association for hygienists does not have control over their occupation in the same way that SADA is respected by dentists.

Fifth, medical aid companies play a key role in the advancement or regression of dental occupations and they are a major contributor to the income of dental professionals in independent private practice. This is because medical aid/insurance companies are the most common form of payment in developing countries (Garla et al., 2014). Yet over time, medical insurance payouts have become a major challenge for dentists in independent practice (Snyman, 2016), as the tariffs which they can claim are very low. This introduces competition for remuneration within the dental profession. Several findings reveal how medical aid companies do not support the increased scope and independence of hygienists. Participants indicate that medical aids refuse to approve certain codes for hygienists. This means that these hygienists are not getting paid for certain procedures by medical aids. In addition, when medical aid companies pay therapists and hygienists, the amount is much less than dentists for the same work performed. This type of conduct by medical aid companies makes it difficult for hygienists to survive the difficult period of opening their practices. The medical insurance companies create an environment where dental occupations compete over the limited funds that patients have access to.

These social structures have a bearing on the advancement of the oral hygiene occupation. There appear to be perceptions of competition that surface from various social spheres,

which positions oral hygiene as an occupation subservient to others within the dental profession. One could say that contestations in the labour market reflect what occurs in education systems: by not teaching at all or by not teaching procedures well, practitioners may struggle to do the procedures in daily practice.

My findings question what reproduces or reinforces the challenges seen in the labour market. At times controlling knowledge appears to be a key factor, and other times it is about competition for income. The dentists are talking about money, the oral hygienists are talking about exploitation and independent practice. There are two forces in the labour market. The first is that dentists require cheap labour which hygienists provide. The second is that there is a need for professionalisation which begs the question of what the knowledge gap is. Next, therefore, I move to how shaping jurisdiction is perceived in the education and training arena.

9.2.2.2 Claim 4- Education and training are not aligned with the regulation changes

Policy developments have not necessarily led to changes in education and training, and thus have not filtered into practice. This section explains the preparation for work more broadly and then looks specifically at contested procedures in the curriculum. Several contestations within the education and training environment restrain the advancement of the oral hygiene occupation. Seven points are described below namely: skills mix, educational advancement, siloed training environment, the inadequacy of training, the reluctance to teach, the implementation of scope in the curriculum, and finally the emphasis on knowledge.

First, the study shows that lecturers are concerned that the unequal skills mix has not been addressed by training institutions. This means that the number of hygienists continues to be much lower than dentists, which will impact a primary prevention model of dental service delivery. This is in line with the literature, which highlights that training quantities are not sufficient to meet the oral disease demands, with very few mid-level dental professionals being trained (D. Chen et al., 2021; Bhayat et al., 2021; Bhayat & Chikte, 2019; Thorpe, 2006a). Further, the literature shows that there have been many advocates for an increase

in the number of mid-level dental professionals to offer oral health promotion and prevention in South Africa (Bhayat et al., 2021; Bhayat & Chikte, 2019; Gordon, 2015; Govender, 2010; Lalloo, 2007a; P. Singh & Combrinck, 2011). The study highlights concerns that there are still significantly lower numbers of mid-level dental professionals entering the labour market. The findings reveal that this is because not sufficient numbers of mid-level professionals are being trained, dental schools do not support the increase in training in these occupations, and mid-level dental students defect to dentistry or other occupations. The continued low numbers of mid-level dental students entering the labour market slant the provision of dental care toward curative care, as dentists remain the dominant dental occupation in South Africa.

Second, there have been many developments regarding educational advancement within the dental profession. Mid-level dental occupations have seen a rise in the level of qualifications across the world (Johnson, 2009a; Monson & Engeswick, 2007; Nash, Friedman, Mathu-Muju, et al., 2014a). This has been evident in South Africa, yet the findings reveal that there are contestations about mid-level dental students wanting to transition into dentistry. This is mainly because of the difficulties mid-level dental students have to advance within their occupation or transition into the dental profession. The lecturers describe that mid-level dental students, in particular, those studying oral hygiene constantly endeavour to advance within the dental profession. The exodus of students transitioning to dentistry weakens mid-level dental occupations because their numbers continue to be low and there is a loss of intellectual capacity.

Third, the education and training that hygienists are exposed to do not integrate them into the mainstream of dental school. Despite the plea for dental schools to introduce interprofessional training to ensure that dental occupations are introduced to each others' roles and scope (Cutler, 2021), the findings indicate that training is siloed as dental occupations are taught separately. Hygienists feel that they are not prioritised during training which creates a sense that they feel underprepared for work.

Fourth, the literature indicates that the preparation of oral hygiene students has remained technical and does not adequately equip students for their additional roles (Vergotine, 2015; D. Chen et al., 2021; Cobban et al., 2007). My findings align with this statement, as hygienists feel that their training has not been adequate. They cite the lack of clinical exposure during training, which they attribute to shaping feelings of inadequacy in mid-level students. Oral hygienists don't feel confident performing contested procedures because they did not acquire sufficient theoretical knowledge, practical skills or practice during and after training. The curriculum analysis supports assertions made by mid-level dental lecturers that the intended curriculum has sufficient specialised knowledge and skills. However, other factors in the preparation for work stall their confidence to perform certain procedures.

Fifth, there is considerable reluctance to teach mid-level dental students their expanded scope. The findings hint at the contestation that mid-level dental occupations are taught the new scope mainly by dentists. Oral hygiene lecturers question how the intended curriculum is enacted, what is being taught, and the emphasis that dentist lecturers put on the knowledge they convey to mid-level dental students. They believe that dentists feel entitled to control the type of knowledge they deliver. In addition, the findings expose the lack of responsibility by oral hygiene lecturers to teach the expanded scope. The reason oral hygiene lecturers have not taken up teaching their students is that they are not confident to teach.

Sixth, there are several barriers to implementing the expanded oral hygiene scope, including poor communication and a lack of interest by various stakeholders. The findings indicate that universities don't implement expanded scopes timeously. This may have been set off by the external dominance of dentists over procedures but also by the powerless role that oral hygienists take within the oral hygiene occupation. The committee of dental deans, a key stakeholder in ensuring the academic advancement of dental occupations, has not shown support for adapting the curriculum to reflect the expanded scope. Referral systems are not implemented in dental schools, and hierarchy is introduced during training because of the different qualifications and the nature of the scope.

Finally, dental curricula in South Africa have different emphases and purposes. The literature indicates that specialisation areas for mid-level dental occupations focus on community-oriented studies and prepare them for supervised practice (Vergotine, 2015; Evans, 2011; P. Singh, 2011). The study revealed that in dental curricula in South Africa, there has not been much of a shift in curricula to prepare oral hygiene students for the expanded scope and to work independently. From the data it seems there is variation in the knowledge and clinical practice opportunities during training across the various universities, variation in the opportunities for gaining experience in clinical practice (particularly applying the key contested procedure – e.g. anaesthesia) between dentists and oral hygienists. The dentistry curriculum does have a stronger foundational knowledge of the procedure: local anaesthesia. Even though oral hygiene curricula cover the basic foundations for decision-making for local anaesthesia, they don't feel as confident as dentists to perform such a procedure, as some indicate not enough time is spent on practical training. The data from the curriculum analysis on the training and experience of hygienists raises concerns about their competence in performing these contested procedures. It reveals that the more extensive knowledge base for dentists suggests that diagnosis, treatment and professional risk can be made with much greater effortlessness.

In conclusion, the discussion highlighted that education doesn't improve the status of hygienists; hierarchies are shaped through methods and practices inherent in the training of mid-level dental students. This reveals a perceived web of power relations between dental occupations, as dentistry lecturers impose their power on hygienists and their advancement. What is crucial to note is the implementation of the expanded scope in the curriculum has been slow for several reasons. Lecturers are not confident, or the knowledge and skills are not in place, students don't have facilities, equipment and materials, or the curriculum design hasn't changed enough to suit independent decision-making. These are some of the reasons in the preparation for work which substantiates the apparent low take up of opportunities for oral hygienists to increase their range of practice. However, there is something greater going on in the labour market that is stopping them from performing the expanded scope and moving toward autonomous practice. It suggests that labour market

factors are more powerful than education factors in changing the scope of practice, even after the regulatory changes.

9.2.3 The control an occupation has over its work

The findings reveal that control over work is changing within the dental profession in South Africa. In this section, I determine the type of control an occupation such as oral hygiene has over its work and how control is changing for other dental occupations.

9.2.3.1 Claim 5 - Relations between dental occupations are said to be good, yet perceptions show shifts in the division of labour are seen as a threat to occupational boundaries

As seen internationally, the work performed by dental occupations has entrenched the hierarchical system. Dentists entrust basic work to a mid-level dental professional, while dentists do more complex work (Reinders et al., 2017b; Nash, 2012; Abelsen & Olsen, 2008). The study shows that dentists see changes in the division of labour and the blurring of occupational roles as a threat to their occupational boundaries. This confirms that the interrelations between occupations have been disrupted by changes to regulations. In the literature review, I explained how occupations differ because of the tasks they perform. According to Freidson (2001) and Abbott (1988), the division of labour represents the social structure of professions through the tasks they cover as well as the specialisation thereof. The vertical nature of the division of labour in the dental profession influences the interrelations between occupations and has a strong impact on the competition arising between these occupations. The research findings highlight the changes to the division of labour and interrelations which are summarised here.

My findings show that on the surface relations appear to be good in the dental profession, however, the shifts in regulatory changes have created tensions among the three dental occupations. Even though dentists claim that they work well with mid-level dental professionals there are several instances where it shows that they want to curtail the types of work and the remuneration for such work. A reason for such tensions is that dentists feel threatened by mid-level dental occupations taking work away from them. This is in line with international dental literature which indicates that changing regulations and professional

endeavours which dental professional groups pursue have triggered the competitiveness between them (Markowitz et al., 2017; Nash, Friedman, Mathu-Muju, et al., 2014a; Kleiner & Park, 2010; Adams, 2004). Further, dentists are more concerned that the dental therapy occupation is a greater threat to their occupation than oral hygiene. Singh (2011) indicates that therapists have been getting considerable resistance from dentists as more than half of therapists are working in independent practice which takes business away from dentists.

This study submits that contestations are mainly between dentists and therapists. Nonetheless, it shows that contests between therapists and hygienists and dentists and hygienists are also rising. Some dentists and therapists see the expansion of hygienists' scope as a threat to their roles; the fact many procedures overlap is a concern for them. Figure 36 illustrates, as discussed in Chapter 2, section 2.2.3, how the scope of the three dental occupations overlaps, as dentists and mid-level occupations have a common jurisdiction. Dentists perform any procedure in the mouth, while therapists and hygienists share some of the same procedures.

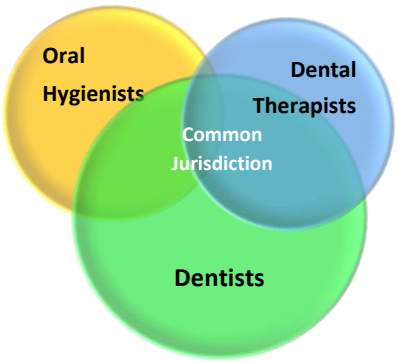


Figure 36 Common jurisdiction of three dental occupations

The common jurisdiction is enlarging for dental occupations and shows how the scopes of the three occupations overlap with each other. Hygienists are doing preventive resin restorations which were not originally part of their scope and this is seen as encroaching on the scopes of both therapists and hygienists. This is causing a shift in the social structure of the dental profession which Freidson (2001) and Abbott (1988) describe.

Further, there are concerns that roles are starting to blur within the dental profession. Again, the literature shows that historically the concern has mainly been between dentists and therapists (Bozia et al., 2023; Nash, Friedman, Mathu-Muju, et al., 2014a; Singh, 2014). However, the findings reveal boundaries around the oral hygienists' role and scope are being resisted not only by dentists but also by therapists. Further, oral hygienists disagree with dentists and therapists that their roles are becoming blurred with that of therapists and dentists; they believe that they continue to have a preventive focus. This finding is interesting as hygienists' preventive focus is viewed as an area of specialisation, yet some hygienists still aspire to have greater status and believe that they are at the bottom of the hierarchy of care.

The literature review indicates that the workplace is where tasks and roles become more blurred than the legal and public jurisdictions (Abbott, 1988; Kroezen et al., 2013). This means that an occupation enforces its legal jurisdiction, controls professional language, and executes direct and symbolic subordination over other subordinate occupations (Abbott, 1988). The findings show that even though there is a concern that mid-level dental occupations are encroaching on the scope of dentists (performing diagnoses, local anaesthesia and preventive resin restorations), dentists continue to have the topmost position in the social division of labour.

Even though dentists appear to be more supportive of hygienists, and while they disregard therapists, both mid-level dental occupations feel threatened by the power and control that dentists have over them. Dentists' perceptions are that the changes in scope and roles are blurring within the dental profession. Yet, even though they are the most dominant in practice they are threatened by the shifts and therefore control the work of the mid-level professionals further. The next section goes into more detail on how this occurs. The findings highlight a deep sense of boundary-keeping on the part of dentists, while hygienists are reluctant to assume boundary-crossing. From this claim, changes in the division of labour, role, and hierarchy are viewed as direct threats to occupational boundaries and how they are maintained and contested. This shows that dentists are threatened by the changes in autonomy and scope of therapists and hygienists, while therapists and hygienists believe

that dentists are still dominant. The perceived roles point to an interesting inconsistency between acceptance of a hierarchical division of labour dominated by dentists, which is expected. It is expected that dentists would see the roles between dental occupations blurring. The continuous contestations on occupational boundaries between dentists and hygienists are not expected. This is because dentists claim that they are allegedly working together well with hygienists in their private practices. However, this is not has been reported by hygienists.

9.2.3.2 Claim 6 - Dominant occupation controls the type of work subordinate occupations perform

As signified at the end of the above discussion, dominant occupations continue to feel threatened by the work subordinate occupations have been granted. Here we can see how boundaries are contested through control of certain types of work.

Mid-level dental professionals believe that dentists want to perform more specialised work and they do not want to let go of some of the basic procedures that mid-level dental professionals have adopted. This is in line with international research in this area (Jo et al., 2020; J. Chen et al., 2018; Reinders et al., 2017b),. Even though they have handed certain tasks such as scaling and polishing to oral hygienists and dental therapists, they still want to be able to do these tasks in their daily work. It seems to be that as economic challenges arise, dentists perform more basic procedures which they regard as their bread and butter. They claim that such tasks provide them with economic stability because when economies have a slump, patients also have no money for expensive treatments and afford only industry which mid-level dental professionals provide. This is possibly one reason for them not to release these basic procedures completely. The contest for controlling basic procedures and holding on to their role has been taken up by several oral hygienists. Hygienists in this study mention that dentists should not be doing specified basic procedures such as scaling and polishing at all, as it has become the work of a hygienist. This shows that there are contestations around some of the basic procedures, especially as these sustain economic stability.

When it comes to more complex procedures such as local anaesthesia and preventive resin restorations, dentists challenge hygienists to do these procedures independently (Bozia et al., 2023). Dentists are controlling more complex tasks such as diagnosis-making. They feel strongly that these are not procedures that mid-level dental professionals ought to be doing. They indicate that mid-level dental occupations do not have the requisite knowledge. The position of dentists contesting certain procedures extended to hygienists can be questioned, as dentists interviewed often had no idea about changes to qualifications or the content found in dental curricula of mid-level dental occupations.

In the education and training environment, dentistry lecturers also control the knowledge that is conveyed to mid-level dental professionals during teaching. Even though the curriculum documents are clearly stated the dentist lecturers decide on the depth of the knowledge mid-level dental occupations will learn.

The dentist will allow the mid-level dental professionals to do new tasks when they are working under supervision and query whether the tasks can be done when mid-level dental professionals work independently. The study by Reinders et al (2017b), shows that the majority of dentists are in agreement with an expanded scope of practice but are not as supportive of independence. So, the dentist controls the procedures that can fully be taken over by mid-level dental occupations. The dentists also control how much money the mid-level dental professionals earn through the type and quantity of tasks they allow them to do. They also indicate that they should be paid more for procedures because they have a better knowledge base. These findings correlate with multiple studies (Beach et al., 2007; Fernández et al., 2015; Garla et al., 2014; Gatermann-Strobel & Perno Goldie, 2005)

9.2.3.3 Claim 7- Subordinate dental occupations have not accepted their independence

The literature points out that mid-level dental occupations are attempting to professionalise and gain control over their work (Reinders et al., 2017b; Brocklehurst et al., 2014a; Johnson, 2008; Nash, 2012). Supervision by dentists has influenced the interrelations within the dental profession which increases challenges for the advancement of mid-level dental occupations. Abbott (1988) indicates that a profession who accepts instructions from a

senior one in exchange for control of a set of tasks, that profession will continue being in a subordinate position. An important question about the advancement of hygienists is whether they will continue to work as a subordinate of a dentist or whether they will eventually become independent.

My findings suggest that the regulatory changes have not resulted in a dramatic increase in oral hygienists entering independent private practice in South Africa. A major factor in hygienists not going into independent practice is the low perception they have of themselves. Underpinning this is that they feel there are gaps in their knowledge, but also that power relations continue interprofessional relations.

Further, hygienists' motivations for working independently focus on having more control of their time and decisions. This suggests that they aspire to work autonomously, as seen in many studies (Bhayat et al., 2021; Catlett, 2016; D. Chen et al., 2021). However, dentists continue monopolising oral hygiene and use them as passive income. Hygienists don't see a way toward independent practice as they feel trapped in supervised practice. The hygienists are still mainly employed by dentists and are afraid to go into independent practice and take on the financial risk. Hygienists are aware that they don't have the specialised scope which will bring in enough revenue to cover their overheads. Those hygienists who have opened independently have difficulty with setting up practices and thus promote themselves to an economically lower market.

Dentists indicate that they are not worried about hygienists working independently and indicate that they accept it. Their acceptance is possibly a false statement as they know that they will continue to have hygienists in their employ and believe that hygienists would not take up an independent private practice. The dentists further, control the referral of certain procedures to hygienists in independent practice and curtail patients from going to such hygienists. This raises questions about their stated acceptance and whether they contest hygienists' advancement.

9.2.4 Summary of analysing the jurisdiction of dental occupations

The literature draws attention to occupations which compete for jurisdiction and shows various ways in which occupations settle disputes (Abbott, 1988, 1986). These settlements include division of labour, intellectual control, subordination, advisory control, and clientele differentiation. This section will consider the extent to which dental occupations settle disputes by keeping in mind these jurisdictional settlements.

Before the start and throughout this study, as a lecturer and dental professional, I was aware of several anecdotal perspectives among dental professionals that suggested:

- that dental professionals do not work together well,
- despite the hierarchy in the dental profession, oral hygienists appear content with being dominated,
- despite the domination by dentists, the oral hygiene occupation is evolving, and some hygienists do aspire to advance,
- changes in the regulations of scope would automatically be translated into changes in daily practices.
- Curricula are not preparing hygienists for independent practice

The study has been able to address these preconceived perceptions and here I use the findings to confirm any changes in this regard. Several vital explanations surface from the analysis of the jurisdiction of the oral hygiene occupation and are aligned with the three considerations for understanding the jurisdiction of an occupation.

First, by investigating the link between occupation and work, a key finding of this thesis about oral hygienists' aspirations to advance is that they have been curtailed by others but also by themselves. The intraprofessional contestation is an interesting finding which highlights several important differences between intra-professional identities that are possibly linked to age and understanding of the preventative intent of the occupation and those that are possibly more aspirational such as the lecturers' indications of younger hygienists reported aspirations to be/transfer to the dental track (seen in section 6.2.3). There has been a slow uptake of the expanded scope and independent practice by oral

hygienists. Changes in teaching have also been slow, as oral hygiene lecturers are not taking up the teaching of the expanded scope. My findings attribute this largely to these professionals' perceptions of their lack of readiness and the influence of power and gender dynamics.

Second, the social structures that influence specifically the oral hygiene occupation, can be seen by the competitiveness in the labour market and how this is reproduced in educational institutions. It is evident that the hierarchy within the dental profession is still firmly in place and hygienists are perceived as being at the bottom of this hierarchy. Even slight boundary changes in daily practice have disturbed power relations within the dental profession, which negatively affect the advancement of the oral hygiene occupation. Education and training have not been effective in preparing hygienists for the expanded procedures and working autonomously.

Finally, despite the intended opportunity for the control over work to change for oral hygienists, subordination hasn't changed as most hygienists are still working under supervision. Perceptions of the preparation for work show that work is controlled by what happens in the training institutions. This highlights that even though procedures have been added to the work of hygienists, their education and training are lagging. Within popular discourse, the idea that education can lead to change is there, but my study shows the limitations of education—rather, the curriculum seems to reflect work, instead of leading changes in it. We see that education alone can not bring about change within occupations.

9.3 Inconsistencies around Boundary Shifting

This section emphasises consistencies and inconsistencies that develop from the responses of participants and shows how triangulation of different data sources described by Meijer et al. (2002) can generate contradictions in the findings. I outline the perceptions of dentists and oral hygienists below to assess the inconsistencies about boundary shifting from the two perspectives.

9.3.1. Probing the perceptions of dentists

Dentists indicate that they work well with hygienists, yet they lack awareness of the complexity and type of procedures that hygienists may perform. Such a lack of awareness impacts whether dentists refer procedures to hygienists in practice. What is seen is that procedures in the scope are not referred to hygienists, which gives dentists control over hygienists' work.

There appears to be inconsistency among dentists as they generally see the value of oral hygienists' abilities. Yet, they do not recognise hygienists' abilities to perform specific procedures such as diagnosis, local anaesthesia, and preventive resin restoratives. This shows dentists' resistance to the expansion of boundaries for hygienists. The division of labour is being contested from outside of the oral hygiene occupation.

Dentists provide overwhelming support to hygienists working under their supervision which will benefit their practices. The hygienists even perform these procedures without direct supervision, but when hygienists want to perform the same procedures in independent practice, dentists are against this. This exposes dentists' opposition to independent practice being awarded to hygienists.

Dentists indicate that they are not bothered about hygienists working independently and with tongue-in-cheek, they wish hygienists well. However, they know that hygienists in their employ would not leave their salaried jobs. This means that dentists are aware that they control hygienists' income and job security.

9.3.2 Probing the perceptions of oral hygienists

Oral hygienists perceive their expanded scope and advancement interestingly, albeit inconsistently. Hygienists show resentment for not being recognised, they want more recognition from the other dental occupations but they do not appreciate the expansion of their scope and independence.

Hygienists are dismayed that dentists don't trust their ability to perform certain procedures, nonetheless, they feel intimidated by the complex procedures and believe some procedures are beyond their jurisdiction. What is surprising is that oral hygiene lecturers also doubt whether certain procedures ought to be included in their scope and they have not assumed teaching of the expanded scope. This suggests that the division of labour is contested from the inside of the oral hygiene occupation.

Hygienists feel that dentists disrespect them and describe feeling exploited and discontent with their working conditions. However, they also describe their satisfaction with their work and continue being employed by dentists.

Oral hygienists aspire to work autonomously and specify what motivates them to open an independent private practice. Yet, hygienists doubt that they would be able to subsist financially and very few practitioners have opened an independent practice. In education and training institutions oral hygiene lecturers are not demonstrating how an independent practitioner ought to act. This shows that hygienists are not ready to assume practice autonomously and therefore continue to give control of their work to dentists.

9.4 Conclusion of the Discussion and Contribution

In summary, the discussion above features several claims which have surfaced from the overall findings of this study. The thesis looked at how the oral hygiene profession responds to the complexities within the workplace and training institutions, which highlights how the advancement of the oral hygiene occupation is shaped. The stance and responses toward the professionalisation of oral hygienists show that boundaries between occupations are resisted and maintained. The two sections above help to answer the research questions, and I distil the answers below.

The main research question is "*How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced their work practices and education?*"
The study reveals that the changes to the scope and autonomy of oral hygienists in South Africa have not influenced their work and education significantly. Perceptions are that shifts in education and training have been slow and that support for the expansion of scope and

independence for hygienists has been lacking in dental schools. Furthermore, there have been very few changes in the workplace as hygienists continue to work under supervision and very few have taken up an independent practice.

The research subquestions can be answered as follows:

1. *What are dental professionals' perceptions of the work practices of oral hygienists?*
   Despite relations within the dental profession being regarded as good, the findings suggest that there is still a clear hierarchy in which hygienists are perceived to be at the bottom. This means that dentists and therapists continue to control the work that hygienists do in daily supervised practice. This is also noted in independent practice where hygienists have difficulties with procedures not being referred to them. There are several procedures which are contested from the expanded scope (e.g., diagnosis making, local anaesthesia, restorations). Hygienists' work practices have not shifted much despite the changes in regulations.

2. *How are oral hygienists responding to the policy amendments?*
   The findings show the tentativeness of the oral hygiene occupation. Rather than embracing the scope and autonomy, the people on the ground (practitioners and lecturers), are not in agreement with regulatory bodies and professional associations. Oral hygiene practitioners have concerns about their knowledge and the financial constraints they face. Lecturers are not prepared to teach. The professional associations want more independence but not necessarily more scope. Different actors in the dental profession are pulling and pushing against the changes to scope and autonomy. This reveals contestations within the oral hygiene occupation. The surprise in terms of what the literature predicts about subordinate occupations competing to increase their jurisdiction, the study reveals the contrary that oral hygienists are having difficulty embracing the changing scope and independence.

3. *How are dental curricula, preparing learners for shared procedures (e.g., local anaesthesia, restorations)?*

According to the findings, preparation for work has not improved the status of hygienists. The implementation of the expanded scope in curricula has been slow, which has affected the uptake of the expanded scope and in daily practice by oral hygienists. Intended curricula for oral hygiene qualifications indicate the expanded scope is well integrated into different courses. However, the enactment of the curriculum does not align with the intended curriculum. The findings show that even though oral hygiene lecturers teach much of the curriculum, it is in the expanded procedures where dentists continue to control the content which is taught to hygienists and many of the oral hygiene lecturers have not taken up the teaching or clinical supervision of the expanded scope.

4. *How does examining the work and education of dental occupations help us to understand inter-professional conflict?*

   By examining the work and education of dental occupations, we can see how different occupations respond to shifts in their division of labour. We have noticed how boundary-keeping and boundary-crossing manifest in the two spheres and the inter-professional conflict which emanates from it. Further, we have observed the settlements which occupations select when they compete for jurisdiction. What is evident is that dominant occupations such as dentistry which is predominantly male-dominated occupation continue to control the jurisdiction over occupations such as oral hygiene which is mainly female-dominated.

9.5 Contemplating the Limitations of the Study

This study has several limitations, which I outline here. First, the study mainly used interviews, and although it covered a range of stakeholders the number of participants was low, and generalisations should be made with caution. Second, to get a more conclusive understanding of the relations within the dental profession observations in practices and at dental schools could have been included. By doing observations, my results may have been different and may have exposed power relations differently, compared with perceptions of how it is enacted daily. However, this was not possible due to access (as some key stakeholders did not agree to participate) and time restraints. Third, the coding and analysis

of the interviews brought challenges, as I was aware of researcher bias. I doubted whether I considered the different respondents' contexts and the extent to which I may have misinterpreted them. During this process I found myself reflecting on my selection of themes in the analysis by repeating sequencing several times to regulate any biases. Another method used to control researcher internal biases was the use of a participant to review the key findings and to find out whether the representation of their perceptions was correctly relayed in the analysis and discussion. Another method was, the use of triangulation, where different data sources were compared in response to the same questions and whether they came up with similar responses. Fourth, the curriculum analyses focused on the first and second-year curriculum documents of mid-level dental qualifications and did not look at the full curricula of all universities offering these qualifications. In addition, it did not compare dentistry with mid-level dental occupations. Another aspect of the curriculum analysis was that it examined one contested procedure as an example. These analyses may not give the full picture of what occurs in each university and it does not account for how knowledge is recontextualised during teaching. Fifth, during a recent conversation with one of the research participants, I realised that the data may not represent the status quo as it was collected several years ago (during 2019-2020). However, this study was conducted at a moment in time and reflects what was happening in the dental profession at the time.

9.6 Recommendations for Mid-level occupations

The possibility of doing future research emanates from the various aspects of the Sociology of professions and boundary contestations this study aimed to investigate and therefore creates the basis for further research. This section provides a discussion of the important contributions this study makes to the oral hygiene occupation in South Africa and abroad. In addition, it outlines recommendations for future research and makes suggestions for the oral hygiene profession in particular.

This study shows that oral hygienists are not taking up independent private practice and revealed several challenges in this regard. An extension of this study could be to observe more directly the advantages and disputes that independent private hygienists experience

when operating without supervision. My suggestions for increasing the uptake of independent private practice by the oral hygiene occupation are to:

- increase communication between stakeholders in the dental profession,
- develop focused strategies to increase public awareness of this occupation,
- regulatory bodies to provide with clearer inputs additional scope of practice,
- enhance strategic negotiations with the state about their role in upstarting independence for hygienists,
- augment the role of professional bodies to provide comprehensive support to independent private practice for hygienists.

The study revealed that hygienists believe that they are not adequately prepared after one year of supervised practice. This suggests a need to answer the following issues: a deeper look into whether mid-level dental professionals' training is sufficient, the type, appropriateness and sufficiency of supervision during the prescribed period. My suggestions for improving confidence to work independently are to:

- compulsory supervision to be under mainly oral hygiene lecturers,
- formal curricula and informal continuous professional development courses should inculcate working in independent practice,
- encourage oral hygiene lecturers to be registered to work independently,
- encourage education and training institutions to collaborate in developing postgraduate qualifications.

9.7 Contribution to Knowledge and Recommendations for Future Research

The contribution of this thesis is associated with the literature on the professionalisation of occupations. There is a conception that regulated professions are stronger than unregulated ones and the regulated ones have greater control over their jurisdiction. In this study, all three dental occupations are regulated, and there is a hierarchy within the dental profession. The findings of the research emphasise several additions to knowledge debates about education and work, occupations and occupational boundaries. Five concepts link labour and education, these include division of labour, autonomy, specialised knowledge, judgement, and jurisdiction. These concepts assisted me in understanding the empirical

world, and with this, I could add to theoretical debates in the field of study on professions and occupations.

The empirical contribution of the thesis shows a lack of implementation of legislation in both the work and education of oral hygienists. This study identifies several instances which demonstrate contestations and highlights the areas where boundaries are controlled within the dental profession, and more specifically and unexpectedly constraints are imposed by oral hygienists themselves. What was expected is that even slight boundary changes in daily practice have disturbed power relations within the dental profession, which negatively affect the advancement of the oral hygiene occupation. There is a deep sense of boundary-keeping on the part of dentists where the dentists do not want hygienists to perform certain procedures such as local anaesthesia and preventive resin restorations unless they work under supervision. What was not expected is that hygienists are also reluctant to assume boundary-crossing, and avoid doing these procedures. And despite the regulations for opening private practices, only a few hygienists have taken up the opportunity to work independently.

Education and training—seen in policy as drivers of change—have not been effective in preparing hygienists for their expanded procedures and for working autonomously. Despite the intended curriculum having sufficient knowledge as seen through the analysis of curricula, there are several factors in the preparation for work which hampers professional advancement for hygienists. This comes from dentistry lecturers having most of the control over what is taught to oral hygiene students, while oral hygiene lecturers lack the readiness to take on the teaching of expanded procedures. Another reason is that the oral hygiene lecturers are not modelling what an independent hygienist should be doing in practice. Further, labour market factors are more powerful than education factors in changing the scope of practice, even after the regulatory change. These factors (among others) include how dentists control the types of work hygienists perform and their income. The evidence suggests that education on its own cannot change what occurs in practice.

The evidence from this thesis concurs with many other studies that dominant occupations continue to control the jurisdiction of subordinate ones and this was expected. Most evident is that there is a web of power relations between occupations. The literature predicts that subordinate occupations compete to increase their jurisdiction. However, the study also reveals the inverse: oral hygienists are having difficulty embracing their changing scope and independence. The lack of direction, impetus and commitment by oral hygienists to advance this occupation has been highly notable in this study. My findings attribute this largely to these professionals' perceptions of their lack of readiness and that this is reinforced by power and gender dynamics in the dental profession. What is evident is that dominant occupations such as dentistry which is predominantly male-dominated occupation continue to control the jurisdiction over occupations such as oral hygiene which is mainly female-dominated. A fundamental theoretical contribution that the thesis offers is a nuanced description of how a subordinate occupation impedes their advancement. It reveals the relations between occupations, however, the dynamics in the labour market and education within a subordinate occupation have been foregrounded. The thesis, therefore, provides further insights into how a subordinate occupation responds to legislative changes, and to the control other occupations have over their jurisdiction.

9.7.1 Final Words

Mid-level dental professionals and in particular oral hygienists have been given an excellent opportunity to provide the basic dental care required by many in South Africa. The shift to an expanded scope of practice and greater autonomy would result in a greater number of dental professionals with direct access to patients to solve the high disease burden. However, shifts in scope and autonomy may also cause greater competition between occupations. The motivations for control over the types of work among occupations are multifaceted and, in this study, I was able to discover some of these.

Through examining different perceptions from South African practitioners, lecturers, and professional body members, I was able to discover current views about the oral hygiene occupation and how the dental profession is adapting to their scope and autonomy. Furthermore, by studying the organisation of knowledge across different curricula, I have

begun a dialogue about the knowledge which underpins the occupation in preparation for their role in autonomous practice. The various perceptions and analyses of the curricula are evidence that hierarchies within the dental profession have not shifted enough and that the status quo is preferred.

Finally, this thesis contributes toward understanding the advancement of occupations by providing a final response to the central research question, "*How have the changes to the scope and autonomy of the oral hygiene occupation in South Africa influenced their work practices and education*?". The following can be highlighted: There are numerous boundaries placed on hygienists from outside of their occupation, to control their work and training. While this is so, hygienists also place boundaries on themselves, so within the occupation, there are various ways in which hygienists limit their advancement. This suggests that pressure to narrow the scope and autonomy may not only come from outside of occupations but also from the inside of an occupation.

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APPENDICES

Appendix A: Ethics approval

Wits School of Education



27 St Andrews Road, Parktown, Johannesburg, 2193 Private Bag 3, Wits 2050, South Africa. Tel: +27 11 717-3064 Fax: +27 11 717-3100 E-mail: enquiries@educ.wits.ac.za Website: www.wits.ac.za

24 October 2017

Student Number: 336837

Protocol Number: 2017ECE035D

Dear Glynnis Vergotine

Application for Ethics Clearance: Doctor of Philosophy

Thank you very much for your ethics application. The Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate, has considered your application for ethics clearance for your proposal entitled:

Oral health occupations in transition: Boundary contestation and curricula in South Africa

The committee recently met and I am pleased to inform you that **clearance was granted**.

Please use the above protocol number in all correspondence to the relevant research parties (schools, parents, learners etc.) and include it in your research report or project on the title page.

The Protocol Number above should be submitted to the Graduate Studies in Education Committee upon submission of your final research report.

All the best with your research project.

Yours sincerely,

MMaseko

Wits School of Education

011 717-3416

cc Supervisor -Prof Yael Shalem and Prof Stephanie Allais

Appendix B: Consent forms / letters

Faculty of Humanities: Wits School of Education

REAL Centre, 27 St Andrews Rd, Parktown, 2193 **Tel**: +27 11 7173896 · **Fax**: 0865533480
E-mail: glynnis.vergotine@wits.ac.za

Dear Dentist

22 July 2020

RE: LETTER TO REQUEST PERMISSION TO CONDUCT PhD RESEARCH

My name is Glynnis Vergotine, and I am a PhD candidate at the University of the Witwatersrand and currently work part-time as an associate researcher at the Centre for Researching Education and Labour (REAL) within the same university.

As a requirement of this degree, I am conducting research into whether the changing scope and autonomy to practice in oral health occupations (dentistry, dental therapy and oral hygiene) has translated into curriculum differentiation. My research is entitled "*Oral health occupations in transition: boundary contestation and curricula in South Africa*" and aims to analyse how recent policy developments may have affected inter-professional boundaries in these three occupations. I will endeavour to provide feedback to you as well as participants on the outcomes of the research. As this study focuses on oral health occupations and training thereof, you as a practitioner have been requested as a key informant of the dental profession to investigate issues regarding labour practices and curriculum developments.

While my interest in this research arose out of my past work as a lecturer in the School of Oral Health Sciences at Wits, my role as researcher for this study is in my personal capacity so as to undertake academic research to fulfil the requirements of a PhD degree at the University of Witwatersrand. As a practitioner you are under no obligation to participate in the research and may at any time during the research process refuse to continue in participation.

Should you consent to participate in this research of oral health occupations in transition in South Africa, I would require two sets of information. Firstly, I would like to request for documentation to assist in my analysis of queries, comment or discussion regarding scope of practice and autonomy changes for your profession. These documents could be letters, legal cases, meeting minutes or reports related to the above (this is not mandatory). In the second part of the research, your assistance in being interviewed will be appreciated. I would like to request permission for you to participate in an interview of approximately 30 – 45 minutes which will be audio-taped and transcribed. I will travel to a location convenient for this interview and I will cover all expenses incurred.

Due to the nature of research, I cannot assure complete anonymity. However, I will use pseudonyms such as dental practitioner participant 1/ 2/ 3 and will not mention any participant by their name, title or position. The data collected will be analysed and documented in a research report. The research findings will be used for academic purposes only, including books, journal articles and or conference proceedings. All research data will be kept securely in a locked cabinet and will be completely destroyed 5 years after completion of the project.

Should you require any further information throughout the course of this research, please do not hesitate to contact me on 082 377 9837 or glynnis.vergotine@wits.ac.za. A summary of the research report and findings can be made available to you electronically upon finalisation in June 2020 should you wish to receive same.

A meeting with yourself can be set up to take you through the study and the information required from yourself for the purpose of the study. I look forward to your response at your earliest convenience.

Yours sincerely

Glynnis Vergotine

PhD candidate at the University of Witwatersrand
Ethics Protocol Number: 2017ECE035D

Faculty of Humanities: Wits School of Education

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E-mail: glynnis.vergotine@wits.ac.za

WITS UNIVERSITY

PARTICIPANTS INFORMED CONSENT FORM FOR INDIVIDUAL INTERVIEWS

Please circle either the **Yes / No** to show that **you** the participant understands what it will mean to consent and participate:

I, the participant, _____ (*participant's full name*)

- As the participant has read and I understand the information sheet. **Yes / No**
- My participation is completely voluntary and understand that I may choose not to participate or to withdraw from the study at any time without any punishment or negative consequences. **Yes / No**
- As the participant I will also not be advantaged, disadvantaged or paid for participating. **Yes / No**
- As the participant I do not have to answer any questions I don't feel comfortable answering. **Yes / No**
- A pseudonym will be used to ensure anonymity in all academic writing including books, journal, conferences and debate. **Yes / No**

The participant has been informed before agreeing to participate that their identity will be anonymous. The report will not use your name but may refer to your title and organisation.

By signing below, I the participant give consent to participate in the research project and individual interviews.

Signature: _____ **Date:** _____

Faculty of Humanities: Wits School of Education

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E-mail: glynnis.vergotine@wits.ac.za

WITS UNIVERSITY

PARTICIPANTS INFORMED CONSENT FOR AUDIO RECORDING AND TRANSCRIBING INTERVIEWS

Please circle either the **Yes / No** to show that **you understand** what it will mean to consent and participate:

I, _____ (*participant's full name*)

- My participation in audio-recording this interview is completely voluntary and I may choose not to participate from the study at any time without any punishment or negative consequences. **Yes / No**

- I will also not be advantaged, disadvantaged or paid for participating in audio-recording. **Yes / No**

- A fake name will be used during audio recordings to ensure anonymity in all academic writing including books, journal and conferences. **Yes / No**

- The audio recordings and transcribed responses will be used to make sure the researcher uses exactly what I answered to the interview questions. **Yes / No**

- All audio-taped and transcribed responses will be safely kept in a locked cabinet and completely destroyed between 3 – 5 years after completion of the project. **Yes / No**

By signing below I give consent for interviews to be audio- taped and transcribed

Signature: _____ **Date:** _____

Faculty of Humanities: Wits School of Education
REAL Centre, 27 St Andrews Rd, Parktown, 2193 **Tel**: +27 11 7173896 · **Fax**: 0865533480
E-mail: glynnis.vergotine@wits.ac.za

Head of School / Research chair
University of ……..

06 April 2018

Dear Prof

RE: LETTER TO REQUEST PERMISSION TO CONDUCT RESEARCH AT ….. UNIVERSITY, DENTAL

My name is Glynnis Vergotine, and I am a PhD student at the School of Education at the University of the Witwatersrand and currently work part-time as an associate researcher at the Centre for Researching Education and Labour (REAL) within the same university. As a requirement of this degree, I am conducting research into whether the changing division of labour in three oral health occupations (dentistry, dental therapy and oral hygiene) has translated into curriculum differentiation. My research is entitled "*Oral health occupations in transition: boundary contestation and curricula in South Africa*" and aims to analyse how policy changes have affected interprofessional boundaries and identity formation of these three occupations. I will endeavour to provide feedback to your organisation as well as participants on the outcomes of the research.

As this study focuses on the above three oral health occupations and training thereof, the University of ……..was selected to assist in exploring labour practices and curriculum developments within these occupations.

While the Universities' involvement in this study is of importance, it is completely voluntary, and you may decline to participate at any stage of the research. While my interest in this research arose out of my past work as a lecturer in the School of Oral Health Sciences at Wits, my role as the researcher for this study is in my personal capacity so as to undertake academic research to fulfil the requirements of a PhD degree at the University of Witwatersrand. The University of …….. and its academics are under no obligation to participate in the research and may at any time during the research process refuse to continue their participation.

Should the University of …….. consent to participate in this research of oral health occupations in transition in South Africa, I would require three sets of information. Firstly, I would like to request for documentation to assist in my analysis of professional body queries, comment or discussion regarding scope of practice and autonomy changes for the above three professions. These documents could be letters, legal cases, meeting minutes or reports related to the above.

In the second part of the research, I would like to request permission to interview academics involved in Oral Hygiene and Dentistry training and curriculum design. If these individuals are unavailable, may I request permission that any other academic be interviewed based on the objectives of this research project.

Finally, I would also like to request for the inclusion of curriculum documents and questions about the design thereof.

Once the information has been provided the participants will partake in one interview of approximately 40 – 60 minutes in August - September 2018, which will be audio-taped and

transcribed. I will travel to your institution or a location convenient for these interviews and will cover all expenses incurred.

I will use pseudonyms such as lecturer 1 / 2 and will not mention any participant by their name, title or position.

The data collected will be analysed and documented in a research report. The research findings be used for academic purposes only, including books, journals and or conference proceedings. All research data will be kept securely in a locked cabinet and will be completely destroyed 5 years after completion of the project.

Should you require further information throughout the course of the research, please do not hesitate to contact me on 082 377 9837 or glynnis.vergotine@wits.ac.za. A summary of the research report and findings can be made available to you electronically upon finalisation in December 2019 should you wish to receive same.

A meeting with yourself can be set up to take you through the study and the information required from yourself for the purpose of the study. I look forward to your response at your earliest convenience.

Yours sincerely

Glynnis Vergotine

PhD candidate at the University of Witwatersrand
Ethics Protocol Number: 2017ECE035D.



Appendix C: Interview schedules

INTERVIEW SCHEDULE - UNIVERSITY ACADEMICS / LECTURERS PARTICIPANT

10 - 12 lecturers from universities offering the three qualifications will participate in these interviews. 45 - 60mins

PROFESSIONAL ROLE AND RESPONSIBILITIES

The scopes of hygienists / therapists / dentists have undergone numerous changes over time, through several regulations;

1. As a lecturer are you aware of the latest regulations to practice for the three occupations (hygienists/therapists/ dentists)? *What do you think are the most important changes to the scope of practice of each of these occupations?*
2. How do the roles of therapists and hygienists differ? *Does each occupation serve a specific purpose?*
3. How have the main roles of the OH and DT occupations changed in the last 10-20 years (since inception)?
4. Do you believe that the public is aware of the roles and the scope of OH and DT occupations?
5. Describe reservations you have about the performance of the following procedures allocated to midlevel occupations (LA / diagnosis / restorations / tooth whitening)?

PERCEPTIONS OF WORK AND IDENTITIES

6. How do you feel about expanded scope and IPP for all three occupations?
7. How have the changes in scope and autonomy advanced/compromised the procedures performed by dental occupations?
8. What do you think about IPP for DT and now OH? Have there been any challenges?
9. What do you think about remuneration for procedures performed? Should it VARY for the three occupations? Why?
10. How do lecturers from the three occupations (hygienists /therapists/dentists) recognise each occupations' professional status? How do they interact?
11. How do practitioners deal with referrals?

TRAINING AND PROFESSIONAL KNOWLEDGE

12. To what extent do you consider the curriculum of other occupations are when designing curricula/your teaching? *How much are you borrowing from other curricula?*
13. Does the training of hygienists/therapists/dentists prepare them to perform the full scope of procedures? *Is there some of the scope that is not covered in the curriculum?*
14. Which subjects / courses in curriculum are most important for students' decision making? What does this entail? How does the curriculum / training prepare students for making decisions on specific procedures?
15. Which subjects / courses need to be deepened to allow greater proficiency in common procedures **(LA, assessment and diagnosis, restorations)**? *Explain why you say so… How are the students taught common procedures? Theory vs. practice.*
16. Tell me about how subjects are taught. *Are subjects / courses taught together (at the same time in the same venue) with other degree students (with different course codes and outcomes)? And are they examined the differently or same?*
17. What do you believe are the differences and similarities in training (knowledge / theory / practical) for hygienists / therapists / dentists?

INTERVIEW SCHEDULE – HPCSA PROFESSIONAL BOARD

Professional Board for Dental Assistants, Dental Therapy and Oral Hygiene

3 - 4 executives from the BOARD will participate in this interview. 45 – 60min

PROFESSIONAL ROLE AND RESPONSIBILITIES

The scope of practice for therapists and hygienists has undergone changes over time, through several regulations;

1. How do the roles of therapists and hygienists differ? Does each occupation serve a specific purpose?
2. How have the main roles of the DENT, OH and DT occupations changed in the last 10-20 years (since inception)?
3. Do you think that DENT, DT and OH practitioners know what their scope of practice is? *If not, why do you think so? (Is it the numerous changes? Is it their own professional identity? Is it their training?) How does this impact on what is happening in practice?*
4. It appears that there are contestations over changes in scope of midlevel dental occupations. Tell me about such queries / contestations that you aware of? *Which changes in scope were most queried? Why have these been queried?*
5. Has the Board received any requests that specific procedures should/shouldn't be performed by OH and DT? *Which are these? What is the role of the professional board in mediating these queries?*
6. Has your board discussed any cases where Hygienists or Therapists are doing procedures beyond their current scope? *Give examples. Why do you think this is happening?*
7. What is the difference between prescription and supervision?

PERCEPTIONS OF WORK AND IDENTITIES

8. What do you think is the professional status enjoyed by OH and DT occupations? *(in relation to dentists)*
9. To what extent has gender / race shaped midlevel dental occupations' work and identity? *How has this shaped the development of these occupations?*
10. How aware is the public of the roles of the OH and DT occupations and what their scope includes? *(Why is this so? Is it public consciousness? Number of practitioners? History?)*
11. To what extent is job security a concern for DENT, OH and DTs? *How does this differ in supervised vs. independent practice?*
12. Has independent practice changed the relations amongst the three dental occupations? (*with regards to daily work practices; procedures, referrals) how do they get along?*
13. To what extent do midlevel dental occupations have struggles – opening up of practices / remuneration for procedures / codes / referrals *(Is there competition/collaboration /complementarity?)* what role does the Board have to play in this?
14. Remuneration for the same procedures performed is VARIED for the three occupations? Why has this happened?
15. Do you think the OH and DT occupations have control over a certain market? Or seeks such control? *Is service relations direct / personal / fiduciary (manages assets for benefit of other rather than self)?*
16. What do you see as future developments for the DENT, DT and OH occupations in SA? Are there opportunities for further advancement in the workplace?

TRAINING AND PROFESSIONAL KNOWLEGE

17. Have you noticed differences in interpretations of the scope of practice taught by the different universities? *Do you think this influences the identity and professional status within the OH and DT occupations?*
18. What do you think that there are differences in the training of hygienists/therapists/dentists?

19. How is training preparing DENT, DT, OH for decision-making / judgement-making? Specifically, assessment and diagnosis, LA, restorative…. Are there differences since Diploma was changed to Degree for OH?
20. Do you think that the education and training of OH and DT in SA require changes to improve its value in the workplace?
21. To what extent do DENT, DT and OH practitioners take responsibility to maintain proficiency and integrity?

INTERVIEW SCHEDULE: OH PRACTITIONER

9 - 12 oral health private practitioners are expected to participate in this interview.

Professional role and scope of practice

1. What is the main purpose of your occupation and how do you fulfill this as a practitioner?
2. Do you know your scope of practice? and the scope of the other two occupations?
3. Is there particular scope that you think (OH or DT) should/ should not perform? why you say so?
4. Are you a member of any professional bodies?
5. Describe your level of professional activity within this profession?
6. Are you given professional recognition by other professions?
7. Is there a hierarchy in the dental professions?
8. Do you think that the public is aware of your occupation? Why is this so?
9. Are patients aware of your scope of practice? How do you market your practice for public?

Perceptions of work

10. How long have you been practicing in this occupation?
11. Do you perform all procedures allocated to you in your scope? Why?
12. How long have you worked under supervision? What were / are your conditions while working under supervision? Did you work complementarily? Income? How did feel in terms of the team?
13. Why did you choose IPP? And since when have you practiced independently?
14. How has your decision-making regarding patient care changed from supervision to IPP?
15. What do you think are the main benefits of being in private practice?
16. Do you think that your remuneration represents the work you put into practice? Should payment be the same for procedures performed by the different practitioners?
17. Have you referred patients to occupations outside of your own?
18. Have you noticed any competition from other professions since you started IPP?

Training and knowledge

19. What qualification do you have? Was your training adequate to perform all procedures and IPP? What about expanded functions courses? Are the adequate?
20. What are the differences and similarities in training for each occupation? Theory / practicals?
21. Which subjects in your curriculum prepared you for procedures such as LA, diagnosis, restorations?

Contested scope

22. Are there any contestations about scope performed by OH or DT? Mention a few
23. Why do you think these procedures have been contested?
24. Do you think that OH and DT are competent to do these new procedures?

Appendix D: Curriculum Documents


BOH rule book.pdf

1st year


OSD120 Oral Disease I.pdf


HBO102 Human Bio for Oral health.pdf


HBO101 Human bio for oral health.pdf


CLP100 Clinical Practice I.pdf


ADP120 Clinical Oral Health I.pdf

2nd year


LOS200 Local Anaesth and Oral Su


CLP200 Clin Practice II.pdf


POH121 Pharmacology for O


ODS210 Oral Disease II.pdf


LOS200 Local Anaesth and Oral Su


CLP200 Clin Practice II.pdf

3rd year


ODP310 Oral diseases and Preven


CLP300 Clin Prac 3.pdf


SCP313 Spec Clin Prac for Oral Health.


BOH Curriculum SMU.docx


Curriculum for Bachelor of Oral Hyg


Dentistry rule book.pdf

1st year


uwc dentistry modules download


PHY113 Physics for dentistry.pdf


LSC141 life sciences.pdf


HUB105 Human bio .pdf


CHE118 Chem for dentistry.pdf

2nd year


OBI210 oral Bio.pdf


HUB205 human bio.pdf


CLD200 clinical dentistry II.pdf


BDP220 basis of disease process.pdf

3rd year


MFS300 MaxFac and Oral Surg I.pdf


PMG310 Prin of Med and Gen Surge


PCL305 Dental Pharmacology.pdf


PAT310 Systematic Pathology.pdf

4th year


NS400 Anaesthesiology an


MFS400 Maxfac and Oral Surg II.pdf

5th year


MFS511 MaxFac and Oral Surg III.pdf


CLD512 Clinical Dent V.pdf

Appendix E: Data Annexures

Chapter 6

Table 6.1 Data structure for Awareness of the scope

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	
1.	***I don't think the public is aware of the three professions***... *Unfortunately, not, you know (PBD2)*	*I don't think the public is aware of the three professions*	**I don't think the public is aware** **21 quotes** **Contestations – 0** **No contestations - 21**	**Aggregate dimension** **Awareness of scope**
2.	*if* ***the public is not educated that these three cadres are workers in the oral health profession****. Then they wouldn't know when they attend dental surgery. They obviously will be seeing a dentist because that's what they've learned, and that's what they know. (DTL2)*	*the public is not educated that these three cadres are workers in the oral health profession*		
3.	***a lot of patients aren't aware*** *of it, but I think it's becoming a little bit more apparent as time is going (OHP6)*	*a lot of patients aren't aware*		
4.	*patients* ***aren't very aware of what a dental therapist*** *is (OHP6)*	*aren't very aware of what a dental therapist is*		
5.	*And also with regards to the dental therapist,* ***I doubt if the public even knows what a*** *therapist is... don't think there's enough promotion of our professions as such. (OHL1)*	*I doubt if the public even knows what a therapist is... don't think there's enough promotion of our professions as such*		
6.	*I know that a lot of the public is* ***not aware of the scope of hygienists****, and they still look at a hygienist as someone who should be working in a dental practice, and they look at them and think "No they're just going to clean my teeth" (DL1)*	*The public is not aware of the scope of hygienists*		
7.	***I don't know if the public is aware of what hygienists can do so it's irrelevant to a lay person whether she can do a glass ionomer or*** *not... I don't think out there with the public... that we are known... they don't know what we do and what we can really offer. (OHL1)*	*I don't know if the public is aware of what hygienists can do*		
8.	*I've dabbled with hiring hygienists over the years, and it has never worked for us for some reason. In our markets...* ***the patient want to see the dentist****. They want the dentist to do the cleaning for them (DP1)*	*the patient want to see the dentist*		
9.	*maybe those areas* ***where there's a higher dental IQ, and people realize the need for the hygienists****, and they can differentiate. (DP1)*	*where there's a higher dental IQ, and people realize the need for the hygienists*		
10.	*as I've said patients have questioned the hygienist to say why are you doing it and not Dr (DP2)*	*Patients have questioned the hygienist to say, why are you doing it and not Dr*		
11.	***patients are only aware of … in the dental team you have the dentist****, and that's who I need to go to (OHL4)*	*patients are only aware of in the dental team you have the dentist*		
12.	*I think that there is still a long way to go before people are kind of at that at that level* ***where they realize this is what we go to the hygienists for.*** *(DP1)*	*they realize this is what we go to the hygienists for*		
13.	*in private they might know because the name is written there with the profession, but in public, you walk in, cos they don't even pay (for treatment) so* ***they won't even realise who is doing what****, things will be the same (DTL1)*	*they won't even realise who is doing what*		

14.	a lot **of patients walk into the surgery and then they say doctor to me… and then I say I'm an oral hygienist**… and this is the city, where you expect people to be educated and to know about oral health (PBD2)	patients walk into the surgery and then they say doctor to me… and then I say I'm an oral hygienist		
15.	I think if you now go out to a mall here, and you **ask a few people around 'what is an oral hygienist.... they will say I have got no idea'** (OHL1)	ask a few people around 'what is an oral hygienist.... they will say I have got no idea'		
16.	one of the things is that the public does not know the difference… they go into a DT practice, and they will call the therapist "doctor". And then when you see them (the patient) and you ask them who was the dentist, they would tell you Dr. so-and-so, yet you know that is not a doctor. We also know that the council knows about such things, probably they are doing something about it. I think that those things are what is making the fire to increase more than anything (DL3)	you ask them who was the dentist, they would tell you Dr. so-and-so, yet you know that is not a doctor		
17.	patient... there are many that come in here that say they that they want to filling, and **I say that I'm an oral hygienist and then they look all puzzled**, So, so what does that mean? can't you do the filling? (OHP8)	I say that I'm an oral hygienist and then they look all puzzled, So, so what does that mean? can't you do the filling?		
18.	**They may know the dentist, but the hygienist and the expanded functions, I don't think that's been publicized** well enough (PBD2)	They may know the dentist, but the hygienist and the expanded functions, I don't think that's been publicized		
19.	No, **they think I'm a dentist. 80% of the time**, they think I'm a dentist. (OHP2)	they think I'm a dentist. 80% of the time		
20.	**people just saw hygienists as an assistant to the dentist.** And their role was diminished in light of the fact that they worked with the dentist (DL1)	people just saw hygienists as an assistant to the dentist		
21.	I think we should all start there at that point... Being happy with who we are and promoting us... So, there should safely say in an ad that they are there to tell the public. I also suggested that being there in newspaper articles to help me with an ad is put up by the different organs SADA or HPCSA promoting their profession and telling the public out there, what we are and what we do… (DTL2)	who we are and promoting us... So, there should safely say in an ad that they are there to tell the public. I also suggested that being there in newspaper articles to help me with an ad is put up by the different organs SADA or HPCSA		
22.	as much as we all have different a scope of practice, what I've noticed is that there is also very little knowledge about the clear distinction between each professional within the three disciplines. (OHL4)	what I've noticed is that there is also very little knowledge about the clear distinction between each professional within the three disciplines	**I don't know a lot about their scope – 11 quotes** **Contestation is that professionals are unaware of different**	
23.	**I don't know the full scope of what they're allowed to do** because it hasn't been of interest to me (DP2)	I don't know the full scope of what they're allowed to do		
24.	Maybe you can refresh me. I've got an idea, but I mean **I haven't seen like the list** (DP5)	I haven't seen like the list		
25.	I have not I have no idea what the scope is, I know that they're allowed, **they're allowed to give infiltration injections, but that's all I know**. I don't know more than that (DP3)	they're allowed to give infiltration injections, but that's all I know		
26.	**I don't even know what changes government has brought about** to be honest. Okay, in terms of expanded functions (DP4)	I don't even know what changes government has brought about		
27.	I think that there are **still some dentists who is not totally informed about our scope of practice** and exactly what the training includes. So, I think that also poses a problem, when a OH is employed by such a dentist who is not totally informed about scope of practice, that also could be like a barrier for that OH to practise her full scope (OHL5)	still some dentists who is not totally informed about our scope of practice		

28.	I **don't think they really understand fully what we do**. (OHP5)	don't think they really understand fully what we do	**occupations' scope** **Contestations – 6** **No contestations - 5**	
29.	The one that doesn't support me is absolutely clueless. I offered to inject somebody for him the other day because he was running late and he like, "You can do that!?" And I'm like, "Yeah, we did exactly the same injecting course as the dental students when I studied six years ago." (OHP5)	I offered to inject somebody for him the other day because he was running late and he like, "You can do that!?		
30.	The one is that they are just clueless. **They just don't know that there's been a change in law** and in regulation and stuff. They're not up to date. (OHP5)	They just don't know that there's been a change in law		
31.	I'm more exposed to the OH scope than the dental therapy scope… so I would say **that I don't know a lot about their scope, I'm not concerned about their scope**. It's like the dentists I'm not concerned with what they can and may do. (OHL2)	I don't know a lot about their scope, I'm not concerned about their scope		
32.	**they don't know me, the dentists, or they think I just know basic about dentistry**, then they don't really, they have this perception that I don't know much. (OHP4)	they don't know me, the dentists, or they think I just know basic about dentistry		
33.	the dental **therapists, I don't know what they do** out there and how much they actually do scale and polishing (OHL1)	therapists, I don't know what they do	**one university did not even know that there was a new scope** **– 10 quotes** **Contestation is that lecturers are unaware of different occupations' scope** **Contestations – 4** **No contestations -**	
34.	out there I'm still seeing them working in silos, if we were to break it we have to start with teaching these three programmes are trained together, engaging with each other, but there is still that hierarchy, there are still **some dentists not acknowledging, they still questioning when a patient comes in she would say that she referred the patient to a dentist for a temporary (restoration) and the dentist was querying why would they be seeing that, this is not what they (OH) can do**. **There is still that superior hierarchy amongst them** (OHL3)	some dentists not acknowledging, they still questioning when a patient comes in she would say that she referred the patient to a dentist for a temp (restoration) and the dentist was querying why would they be seeing that, this is not what they (OH) can do		
35.	They were never integrated with us at varsity, so **they aren't able to know exactly what the difference in scope is** (OHP2)	they aren't able to know exactly what the difference in scope is		
36.	**one university did not even know that there was a new scope** of practice sadly…(PBD4)	one university did not even know that there was a new scope		
37.	**I have a very limited understanding I know some of the expanded functions because I teach some of it, to be honest I've never really looked at the document to see what the scope is** and so that I understand what an oral hygienist is able to do. (DL1)	I know some of the expanded functions because I teach some of it, to be honest I I've never really looked at the document to see what the scope is		
38.	one problem that we do have at varsity is that **we're not integrated quite a lot. So, I think that's where that misconception starts** about our scope in dentistry when it comes to dentists, and I think that's why they misuse and abuse us like that. (OHP2)	we're not integrated quite a lot. So, I think that's where that misconception starts		
39.	still some dentists who are not totally informed about our scope of practice (OHL5)	still some dentists who are not totally informed about our scope of practice		
40.	**the scope of practice did go out to the Deans all the times, what they do with it when it comes to them is questionable**. So, everybody has a chance to interrogate it (PBD4)	the scope of practice did go out to the Deans all the times, what they do with it when it comes to them is questionable		
41.	I think the hygienists have been given a lot of things to do, more responsibilities, it is more or less the same (as therapists) maybe it is because the environment is changing, … You know like the advanced handpieces and … are changing that is what I'm talking about, the procedures are still the same, but the equipment is changing (DTL1)	hygienists have been given a lot of things to do, more responsibilities, it is more or less the same (as therapists)		

		maybe it is because the environment is changing, … You know like the advanced handpieces and … are changing		
42.	*for hygienists the scope has grown, we embrace and appreciate it, in terms of DT scope the past one and the current one is with the DHET for review, so I'm not aware of what the current scope of DT is (OHL3)*	*in terms of DT scope the past one and the current one is with the DHET for review, so I'm not aware of what the current scope of DT is*		

26 OH, 4 DT, 12 DENT,

26 + 4 + 12 = 42 total quotes

Table 6.2 Data structure for the perceived roles of dental professionals

	Observations	**1st order analysis 1st order concepts**	**2nd order analysis 2nd order themes**	**Aggregate Dimension Roles of dental professionals**
1.	*to sustain good oral health of a patient* ***to engage in the technical aspects of treatment… both primary, secondary and tertiary****… like implantology… also health promotion. (DL2)*	*to engage in the technical aspects of treatment… both primary, secondary, and tertiary*	**Distinctiveness of professional roles** **(38quotes)** **Contesting that the roles are changing, and that they are distinct and considers self-perception.** **Contestations – 16**	
2.	*Overall* ***dental care and in a certain way, a bit specialized procedure.*** *(DP5)*	*dental care and in a certain way, a bit specialized*		
3.	*My purpose as a dentist is* ***to ensure the oral and general health of my patients****, because the mouth is connected to the rest of the body (DP3)*	*to ensure the oral and general health of my patients*		
4.	*the dental therapist, their primary aim, and most of the patients they treat is* ***to alleviate pain and sepsis*** *whatever way they doing it. (PBD3)*	*to alleviate pain and sepsis*		
5.	*in private practice., what is needed is* ***restorative care and exodontia****, and that can be done by the therapist in private practice. (DTP2)*	*restorative care and exodontia*		
6.	*my main role* ***is alleviating pain. Removing sepsis and infection*** *and confidence boosting dentistry which is smile design cosmetic work. (DP2)*	*alleviating pain. Removing sepsis and infection*		
7.	*DT, very minimal has been added to that scope of practice since its inception. They still don't make dentures, they don't do crown and bridge work, they don't to endodontics… it's still very much* ***treatment of pain and sepsis through extractions and restorations****. (PBD4)*	*treatment of pain and sepsis through extractions and restorations*		
8.	*just the normal dental therapy stuff****, cleaning, fillings extractions. (****DTP2)*	*cleaning, fillings extractions.*		
9.	*I think that* ***OH is still located within that context of prevention and promotion. I do not see it as a move to more curative methods*** *or general dentistry, it hasn't moved. (PBD4)*	*OH is still located within that context of prevention and promotion. I do not see it as a move to more curative methods*		
10.	***I also went into an independent practice because I want to prevent disease****. I want to, I want to teach patients how they can look after their mouths. (OHP4)*	*I also went into an independent practice because I want to prevent disease*		

11.	OH, is very much **focused on prevention, promotion and minimal intervention dentistry.** (PBD4)	focused on prevention, promotion and minimal intervention dentistry.	**No contestations - 22**	
12.	**most of the OH I know who is practicing independently are extremely focused on prevention** and promoting the oral health status of their patients. And I haven't come across one that's only doing what's lucrative for them (OHL5)	most of the OH I know who is practicing independently are extremely focused on prevention		
13.	in a practice the **purpose of an oral hygienist is the prevention side of things** to stabilize people and keep them healthy (OHP5)	purpose of an oral hygienist is the prevention side of things		
14.	we focus primary preventative but other element of treatment; **end role is preventative** (OHL3)	end role is preventative		
15.	cancer screening, **for caries screening, screening for oral lesions.** Things can be picked up early (OHP8)	for caries screening, screening for oral lesions.		
16.	our main function or role is **to put primary prevention first**. (OHL5)	to put primary prevention first		
17.	**our main function is still education**, educating our patients in oral health… I don't think it has changed a lot. And what I mean with education, I want to bring in prevention, because prevention goes hand-in-hand with education (OHL2)	our main function is still education		
18.	I talk to my patients a lot with regard to what happens inside their mouths and their conditions and how to prevent disease… So basically, education is very important to me (OHP6)	talk to my patients a lot with regard to what happens inside their mouths and their conditions and how to prevent disease		
19.	I feel that our scope that we have at the moment is suited to **prevention and education** (PBD2)	prevention and education		
20.	dentists have a bigger role to play, as they are still doing general dentistry, (and here we are talking about general dentists). They can do work like crown and bridge, endodontics, a bit of orthodontics, periodontics, restorative treatment in every sense. **They have always been allowed and still do the full range of procedures within general dentistry (**PBD4)	They have always been allowed and still do the full range of procedures within general dentistry		
21.	**dentist's role is purely for rehabilitation**, I see that if a patient has lost a tooth for implants, for crownwork, for bridgework, for fillings that I can't do, for extractions (OHP4)	dentist's role is purely for rehabilitation		
22.	**dentists got tired of doing routine boring. I say this boring in inverted commas... cleaning scale and polishing and this sort of thing and** they, they, and then they invented the profession of oral hygienists that's how oral hygienists came to be (DP3)	dentists got tired of doing routine boring. I say this boring in inverted commas… cleaning scale and polishing and this sort of thing		
23.	I know that out there, **dentists don't do that, they don't educate their patients on prevention**. (OHP4)	dentists don't do that, they don't educate their patients on prevention		
24.	oral hygienist is much better qualified for that **she can spend time with the patient that it's really a speciality on its own, you know**, to have that patience to... you know, like time and give a patient oral hygiene instructions and.... So yes, you know that's definitely a service that I think if a dentist is going to provide it to you properly. I don't think that... I don't think that that dentist does that, as a lot of other work, because a dentist has a lot of his own work. And if they provide the services, it's usually not adequately done. (DP5)	she can spend time with the patient that it's really a speciality on its own, you know		
25.	with regards to the **OH, that's where they come in… they are trained for maintenance in dentistry** and more preventive care… so that s PHC (DL4)	they are trained for maintenance in dentistry		
26.	OH is a different kettle of fish, **they have a very strong self-perception by the time they are in 3rd year, they know exactly what they want** to do… they are clear about the scope of practice (DL2)	they have a very strong self-perception by the time they are in 3rd year, they know exactly what they want		
27.	As far as hygienists go I think the retention rate has been better than with therapy. **I think it was a profession that was well thought out, the focus being on prevention rather than curative** (PBD1)	I think it was a profession that was well thought out, the focus being on prevention rather than curative		
28.	I think **therapists are more, how do you say, intimidated by us** because we do have a larger scope. (OHP2)	therapists are more, how do you say, intimidated by us		

29.	***therapists are more actively fixing problems like doing basic fillings*** *and that kind of thing. (OHP5)*	*therapists are more actively fixing problems like doing basic fillings*		
30.	*I'm absolutely dead against therapists, it's like a half-baked, like a half-baked cookie. That's* ***either you're in or you're out, you're either a dentist or you're not a dentist... a therapist as far as I'm concerned is neither here nor there****, I absolutely understand the logic behind it, but no I haven't, and I wouldn't (DP3)*	*either you're in or you're out, you're either a dentist or you're not a dentist... a therapist as far as I'm concerned is neither here nor there*		
31.	*DT the scope is quite clear, but there is* ***a lot of contestations between dentists and therapists, but there is less contestation between dentists and OH****… (DL2)*	*a lot of contestations between dentists and therapists, but there is less contestation between dentists and OH*		
32.	*Dentists have now complained, although they may be against therapists and* ***I personally know people that hate therapists with a passion****, but they still like envious of us (DTP1)*	*I personally know people that hate therapists with a passion*		
33.	*With therapy I think* ***they're caught between prevention and curative****. (PBD1)*	*they're caught between prevention and curative*		
34.	*they are more stable let me put it that way. The* ***DT are the ones who are very unstable in terms of self-perception*** *(DTL2)*	*DT are the ones who are very unstable in terms of self-perception*		
35.	*what I think is happening with the three cadres,* ***but I think OH are more stable****, DT are neither here nor there (DL2)*	*but I think OH are more stable*		
36.	*the identity has changed, I think they have realized that they can be in their own profession, and still be active and, and that's what it is, but* ***they are not any lesser a practitioner then suddenly, I think that has changed****. (PBD3)*	*they are not any lesser a practitioner then suddenly, I think that has changed*		
37.	*it's going to take years and years and if not in my lifetime in another lifetime to change, because each and every person is they can tell you honestly that for certain* ***Dental Association doesn't make it any easier to change mindset. Because I think there's a huge prejudice. (PBD3)***	*Dental Association doesn't make it any easier to change mindset. Because I think there's a huge prejudice.*		
38.	*they no longer see themselves as subservient to somebody. They don't see themselves as beneath somebody, but they see themselves as alongside somebody, you know. And there's some as a profession that has a certain scope of profession, and that they can do this. And that somebody else can do, because I think what has happened is that there's a mindset change. There's a mindset change that in every walk of life. Every...in any profession. There are people that can do something and can't do something. And when the previous time the dentist looked down upon necessity, or y'all are just therapist so y'all are just hygienists and we are.... We dominate this because we know more has changed.* (PBD3).	*no longer see themselves as subservient to somebody*		
39.	*I've never worked in a practice where there's any dental therapists, but to me, they would then slot them under the dentist. So,* ***dentist, dental therapist, oral hygienist*** *and then dental assistant (OHP4)*	*dentist, dental therapist, oral hygienist*	**dentist is superior and then comes a therapist and then the hygienists** **(24quotes)** **Do dentists dominate or not?**	
40.	*We're* ***seen as the lower*** *group (OHP4)*	*seen as the lower*		
41.	*From my understanding, a dental* ***therapist is halfway between a hygienist and a dentist****. (DP2)*	*therapist is halfway between a hygienist and a dentist*		
42.	*"when therapy was a younger profession, therapists, saw themselves as or there was this hierarchy of the dentist first, the therapist was the second and it was the hygienist was there it was to see like that, you know, that there was our boss, but it's no longer than perception because people have their own… because they are able to see themselves as a profession on their own" (PBD3)*			
43.	*So, you basically under a dentist, as a mid-level worker, so you are less qualified to do certain procedures, so it creates a lot of problems out there in private practice, and in hospital practice where* ***the dentist is the superior and then comes a therapist and then the hygienists****. (DTL2)*	*the dentist is the superior and then comes a therapist and then the hygienists.*		
44.	*Because* ***we are still seen as oral hygienists... the same as we've been seen 15 years ago so I don't think that is given us more status****...better salary. (OHL1)*	*We are still seen as oral hygienists... the same as we've been seen 15 years ago so I don't think that is given us more status*		

45.	***you always had that thing of your inferior*** *you're not a professional in your own right (OHP8)*	*you always had that thing of your inferior*	**How many say they don't dominate? or they don't like the dominance? Or they want less dominance?** **Contestations – 8** **No contestations - 14**	
46.	*we sort of lighten the load for a dentist, I would say, if a* ***dentist is more inclined to cosmetic dentistry or specialized dentistry, he can focus all his energy on that, where we can take more of the basic dentistry*** *responsibilities. And I think that lightens his load and gives him an opportunity to do what he what he loves to do (DTP3)*	*dentist is more inclined to cosmetic dentistry or specialized dentistry, he can focus all his energy on that, where we can take more of the basic dentistry*		
47.	dentists are happy for us to do our Class I (ART) fillings, our Class V *fillings… they very happy, because this is an additional procedure that they (OH) can do so that the* ***dentist can concentrate on crown and bridge work or more complicated procedures****. (PBD2)*	*dentist can concentrate on crown and bridge work or more complicated procedures*		
48.	*if you will work in a practice the* ***dentist could do all the fancy dentistry*** *like crown and bridge work, endos, etc The therapist can do the restorative care and extractions, the hygienist could do some restorative care, and the primary health care or health promotion. (DTL2)*	*the dentist could do all the fancy dentistry*		
49.	*a* ***therapist scope of practice is definitely much more advanced*** *than hygienist (DP1)*	*therapist scope of practice is definitely much more advanced*		
50.	*the scope of the OH is supposed to be prevention, where with the DT it's basically it is more curative and tertiary care or prevention. So,* ***we are primary prevention, and they are more secondary or tertiary prevention*** *(OHL5)*	*we are primary prevention and they are more secondary or tertiary prevention*		
51.	*it's an under-current an under-tone to how we work with each other and how we relate to each other,* ***and you know more than I do****… you know.(OHL4)*	*and you know more than I do*		
52.	***it's such a non-said thing between the dentists, dental therapists, and oral hygienists, that no-one addresses, no-one talks about it, but everyone is aware of. That there is a hierarchy and who is better than who*** *(OHL4)*	*who is better than who*		
53.	***they always feel they have the upper hand****, and they can always choose when or when not to have the upper hand (OHP2)*	*they always feel they have the upper hand*		
54.	*dentist, do not necessarily refer like splinting and Preventive Resin Restorations and things like that. the* ***dentists still prefer to do that*** *(OHL1)*	*dentists still prefer to do that*		
55.	*what I've heard from ex-students who qualified or from colleagues, is that* ***I've often heard dentists would say "I don't allow my OH to anaesthetise****" (OHL5)*	*I've often heard dentists would say "I don't allow my OH to anaesthetise*		
56.	*qualifications are set out according to 3 years 4 years and 5 years and because of the nature of the scope of practice, all of this automatically creates a pyramid. It automatically creates this where at the top you get the specialist then your dentist then your therapist and then your hygienist. And* ***it starts at the point of Education. It's not something that we get out there, it starts from the education at the Dental School where they get indoctrinated.*** *(DL1)*	*starts at the point of Education. It's not something that we get out there, it starts from the education at the Dental School where they get indoctrinated.*		
57.	*there's a kind of is a kind of not arrogance but it kind of dentists think that they've trained for five and a half or six years or however long it is, I think it's five years now, and that they're,* ***they're more qualified in that other people shouldn't be kind of assume the role as in trying to take away from the kind of doctor role****. So, there's this kind of tiered, like layered hierarchy that dentistry should operate under. (DP4)*	*they're more qualified in that other people shouldn't be kind of assume the role as in trying to take away from the kind of doctor role*		
58.	~~*there is a hierarchy of status,* ***we all believe that the complicated procedures and the training are done by the dentist, the dentist is higher up there*** *(DTL1)*~~	~~*we all believe that the complicated procedures and the training are done by the dentist*~~ *move to 8*		
59.	*dentistry students come out of university... And* ***they were coming out of university with an idea that they were superior to the dental therapists and the hygienists****... (PBD3)*	*They were coming out of university with an idea that they were superior to the dental therapists and the hygienists*		
60.	*I think that the difference was also quite big before because the OH always used to qualify with a diploma, so you didn't even have a degree let alone you were not a doctor…* ***you weren't even regarded as a graduate who qualified with a university degree*** *(OHL4)*	*you weren't even regarded as a graduate who qualified with a university degree*		

61.	*when they come out of university, they come out with the fact that Oh, you're a therapist... you're a this you're a that... you know what I'm saying. But I think when their interaction.... when they work, I think* ***they still feel like they're a little bit superior.*** *(PBD3)*	*they still feel like they're a little bit superior.*		
62.	***entitlement comes from the knowledge base and the title of doctor*** *(DP4)*	*entitlement comes from the knowledge base and the title of doctor.*		
63.	*It's just* ***the role sometimes is a bit grey. When it comes to restorative care with hygiene and therapy****, and also the roles are grey with dentists and therapists when it comes to wisdom extraction and restorative care. (DTL2)*	*the role sometimes is a bit grey. When it comes to restorative care with hygiene and therapy*	**they expand, it eats into our scope** **(40 quotes)** **And** **Contesting whether scope is blurring** **Who is encroaching on whose scope** **Contestations – 8** **No contestations - 32**	
64.	*For me, the* ***lines between a dental therapist and a hygienist have somewhat blurred more recently*** *and as a dentist I see the most significant difference being mainly surgical procedures that a therapist is allowed to do Such as the extractions (DL1)*	*lines between a dental therapist and a hygienist have somewhat blurred more recently*		
65.	*I think the hygienist role is such a critical role. Right. But the* ***scope is being expanded in fields where it is kind of seen as encroaching****. Their scope should be expanded in things that make sense and add value to the, to the oral hygiene fraternity. I'll give you one example. In the US, you get something called myofunctional therapists (DP1)*	*scope is being expanded in fields where it is kind of seen as encroaching*		
66.	***if there's anything else that's included, they're not going to be hygienists anymore, they're going to be therapists*** *so if they're doing the training, and they are. That's basically it if they change sufficiently then why not. I don't have an issue with. I think there's enough patients for everybody there's enough work for everybody so there's no need to be to hold back ones' scope. (DTP3)*	*If there's anything else that's included, they're not going to be hygienists anymore, they're going to be therapists*		
67.	*I agree with their reservations. And I think an oral* ***hygienist must focus on preventive and not move on to restorative because then she really now do what a dental therapist does****. (OHL1)*	*an oral hygienist must focus on preventive and not move on to restorative because then she really now do what a dental therapist does*		
68.	*I saw that then as stepping not over but touching on the scope of the dentists, e.g., your LA and such. And I'm not saying that there's not a place for it, but* ***I'm asking aren't we then losing the focus of the occupation.*** *(OHL5)*	*I saw that then as stepping not over but touching on the scope of the dentists, e.g., your LA and such. And I'm not saying that there's not a place for it, but I'm asking aren't we then losing the focus of the occupation.*		
69.	*widening the scope of practice of hygienists and therapists being allowed to go into private practice, there's become* ***a greater overlap between the three groups now. And that is cause for concern because it's not clear cut*** *as to what belongs to where. (PBD1)*	*greater overlap between the three groups now. And that is cause for concern because it's not clear cut*		
70.	*the role of* ***the therapist is starting to blur between the role of the dentist and the hygienist****. And for me I think that it is more the therapist that is at risk of becoming obsolete If this continues. I think that the hygienist plays an important part as well as the dentist but I think that the therapist may be in trouble. (DL1)*	*of the therapist is starting to blur between the role of the dentist and the hygienist moved from protecting the profession*		
71.	*I've noticed is that* ***there is also very little knowledge about the clear distinction between each professional*** *within the three disciplines (OHL4)*	*there is also very little knowledge about the clear distinction between each professional*		
72.	*how do we really distinguish between ourselves? Between dentists, DT and OH… and* ***do we know how far each profession go*** *within the dental fraternity? (OHL4)*	*do we know how far each profession go*		
73.	*therapists that are out now and* ***the experience that we have in the work that we do, dentists are definitely threatened*** *by that, with the exception of course of the specialized work I mean the basic dentistry if you look at the work that therapists do the restorations and things. (DTP1)*	*the experience that we have in the work that we do, dentists are definitely threatened*		
74.	*any dentist will start pushing more into typically what the specialist used to do****. They're gonna find themselves squeezed in the middle because as the therapy scope of practice, increases and hygienists' scope of practice increases, what's left for the dentist*** *to do besides just crown and bridge work. (DP1)*	*They're gonna find themselves squeezed in the middle because as the therapy scope of practice, increases and*		

		hygienists' scope of practice increases, what's left for the dentist		
75.	hygienists shouldn't be able to do PRR and those type of things because now. If the therapist could do that now they're saying oh but now the hygienist is doing that, it's eating into our scope. So **they want to expand, they expand it eats into our (dentists) scope, so it just becomes a kind of a non-ending** whatever. (DP1)	they want to expand, they expand it eats into our (dentists) scope, so it just becomes a kind of a non-ending		
76.	**The problem is about turf you know dental restorations or dental hygiene**, or the therapist are cutting into the turf and I remember when therapists, the idea of there came up. I mean, dental therapists have been around for 20 plus years now. Right. Yes, and things like that. In dentists were up in arms about dental therapist and they're going to do work the dentist should do and how can they and they're not trained or qualified (DP4)	The problem is about turf you know dental restorations for dental hygiene		
77.	I think they **(hygienists) shouldn't be.... doing restorative (**DTP2)	(hygienists) shouldn't be.... doing restorative		
78.	They should just be doing temporary. That's okay but the permanent fillings, FYI**, they must just leave something for us now they're taking away everything from us** (DTP2)	they must just leave something for us now they're taking away everything from us		
79.	They've had this **discussion for years now about therapists starting the first stage of the root canal treatment just to get pain relief for patients**. And then, obviously, refer to the dentist after that, but, you know, after years of talks I don't think anything's come of it. And I think a lot of it is an objection from dentists from the dental board (DTP3)	discussion for years now about therapists starting the first stage of the root canal treatment just to get pain relief for patients		
80.	they do feel threatened by these professions that **they do feel that we are taking their work away from them, that they do feel we shouldn't exist**. (PBD3)	they do feel that we are taking their work away from them, that they do feel we shouldn't exist		
81.	if I must be honest now, **I don't think that dentists should be doing scaling and polishing**… because they are not doing it the same way as we are (OHL2)	I don't think that dentists should be doing scaling and polishing		
82.	**if you say I'm going to do something on that tooth, dentists will say no**… its not to say that they are ignorant… these things have been introduced in the scope and it was distributed all over for people to comment on… I want to say, but can you do that… if the scope was openly distributed… (OHL3)	if you say I'm going to do something on that tooth, dentists will say no		
83.	they (dentists) are undermining us (OH), you look at the nursing profession… there is auxiliary nurse, enrolled nurse, hardly that you will hear that this kind of my things… that this is my things… of no **this is the tooth and you are working on my space (**OHL3)	this is the tooth and you are working on my space…		
84.	**dentists almost encroach on the OH scope, where they decide I'm not going to let the OH do a fissure sealant for example, I'm going to do it**. That has also happened quite often (OHL5)	dentists almost encroach on the OH scope, where they decide I'm not going to let the OH do a fissure sealant		
85.	they are still doing aesthetic treatment in the form of restorative work, but not veneers, crowns and bridges… **they are not encroaching on anything… they are still where they were many, many years ago**… (PBD4)	they are not encroaching on anything… they are still where they were many, many years ago		
86.	look at the comebacks, it's terrible, it's horrific! There is a lot of more severe cases than this and **a lot of it is denture work and crown and bridgework that DTs are trying to do… and that's pure scope encroachment**. They are not allowed to do it and they should be penalised for it. (PBD4)	a lot of it is denture work and crown and bridgework that DTs are trying to do… and that's pure scope encroachment		
87.	being on the Board and having to deal with the dentist at every turn for these three professions, the dental therapists, the dental assistants and the oral hygienists. I think the problems we faced most was the fact that I think **they thought there would have been an encroachment on their profession** (PBD3)	they thought there would have been an encroachment on their profession		
88.	the biggest problem is the two professions, oral hygiene and dental therapy, were almost seen as dead-end professions. So, **expanding the scope is a natural phenomenon** in that case. (PBD1)	expanding the scope is a natural phenomenon		
89.	there has been anecdotal evidence that **therapists actually refer to themselves as tooth doctors** in certain areas and I don't think that's fair. (PBD1)	therapists actually refer to themselves as tooth doctors		

90.	*dentists. They were the ones that had, they particularly didn't have a problem with the hygienists.* ***They didn't have a problem and I'm going to be so bold as to say that a lot of support was given to the hygienist because the hygienists work primarily in a dentist practice*** *doing a lot of things for them. (PBD3)*	*They didn't have a problem and I'm going to be so bold as to say that a lot of support was given to the hygienist because the hygienists work primarily in a dentist practice*		
91.	*I think that was where the distinction started to come as to whether you're capable of doing something? Or is it that you don't want somebody to be there, you know? And in my opinion, it was* ***they just didn't want anybody to be there because it was encroaching on their turf****. (PBD3)*	*they just didn't want anybody to be there because it was encroaching on their turf*		
92.	*There was a dental group I don't know if it's Big Red Tooth or something, they had on the website* ***"At our practice the dentists takes so much pride and care in your good oral health and we don't ship you off to the hygienist****" they do the scale and polishes themselves. I mean, really.. (OHP8)*	*At our practice the dentists takes so much pride and care in your good oral health and we don't ship you off to the hygienist*		
93.	*think it's very limited so limited scope* ***they can do a soft lining ... fine, and I don't think there's much harm that can be done*** *they can open the bite, which is not a big deal. (DP3)*	*they can do a soft lining ... fine, and I don't think there's much harm that can be done*		
94.	*I think* ***dentists prefer hygienists working with them*** *because they are not threatened. (DTP1)*	*dentists prefer hygienists working with them*		
95.	*lot of the procedures like vacuum formed mouth guards and tooth whitening trays, those all came from the* ***dentists that said our hygienists have been doing this so put it into the scope*** *(PBD4)*	*dentists that said our hygienists have been doing this so put it into the scope*		
96.	*I think* ***we should be able to do a little bit more restos****. They should give us a few more classes to do. More simplified restorations, they're very easy to do. Like, let's say for example, like incisal edge resto or a interproximal restoration. I feel we need to be able to help patients a little bit more than just do temps and class fives. (OHP2)*	*we should be able to do a little bit more restos*		
97.	*a lot of us are thinking that the patient needs to go to the dentist first and then get filtered down to everyone else, and everyone else means the specialists, the OHs and DTs. But I think it must be the other way around specifically for the OHs, I think that* ***your OH should be your first point of call and then you refer out*** *to curative. (OHL4)*	*your OH should be your first point of call and then you refer out*		
98.	*the bleaching thing that was some big thing that going around, you know, and they wanted the hygienists wanted the approval to do it and therapist wanted to do it and stuff so I have not been too clued on that I know* ***there was a little bit of bickering at different levels****. (DTP1)*	*there was a little bit of bickering at different levels*		
99.	*if a therapist is* ***working with a dentist, they might be happy that DT can do the procedure, but if you are working alone it becomes a problem****… (DTL1)*	*working with a dentist, they might be happy that DT can do the procedure, but if you are working alone it becomes a problem*		
100.	*they (therapists) fought for professional recognition, and they are nearly there… They have a real have a struggle. And now,* ***there's a lot of changes, and I think they are getting the deserved respect****."* (DTL2)	*there's a lot of changes, and I think they are getting the deserved respect*		
101.	*the* ***battles that therapists are facing, is that they also want to expand their functions****, in the sense to be allowed to do like in a simple of any as are simple. You know, very slight invasive. (DTP1)*	*battles that therapists are facing, is that they also want to expand their functions*		
102.	*already there is competition that is there, yes, I said earlier on that* ***we know of DT doing things out of their scope, so that also becomes a problem for the dentists*** *(DL3) 1 dentist,*	*we know of DT doing things out of their scope, so that also becomes a problem for the dentists*		

OH – 46, DT – 27, DENT – 29,

102 Total quotes

Table 6.3 Data structure for professional recognition

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	
1.	*why are you doing it and not Dr., and then she's out, I just go in and say,* ***it is within its scope of treatment and she's highly competent*** *(DP2)*	*it is within its scope of treatment and she's highly competent*	**I don't see anyone unless they've seen the hygienist – 34 quotes** **Recognising capability vs. contesting capability** **Contestations – 4** **No contestations - 30**	**Aggregate dimension** **Professional recognition**
2.	*you have an oral hygienist you know* ***if she's able to function her full scope of what she what she's allowed to do. It takes a lot of the pressure off your hands****. (DP5)*	*if she's able to function her full scope of what she what she's allowed to do. It takes a lot of the pressure off your hands*		
3.	*I'm utilizing all of that and I must say that* ***that's wonderful that you can utilize your hygienist****... (DP5)*	*that's wonderful that you can utilize your hygienist*		
4.	*hygienists are fortunate in the sense that* ***they have the support of the dentists****. (PBD3)*	*they have the support of the dentists*		
5.	*in my* ***practice she does a bit of emergency work. My overflow patients that I can't always handle*** *or recementing overlays and inlays but primarily... She will, you know, do the basic preventative care. (DP5)*	*she does a bit of emergency work. My overflow patients that I can't always handle*		
6.	***if I need to do an extraction or something like that she will, you know, do the local anaesthetic for me so long*** *and then I'll just walk you through the surgery and do the surgical procedure, or things like that. (DP5)*	*if I need to do an extraction or something like that she will, you know, do the local anaesthetic for me so long*		
7.	*I use my hygienist in my laboratories...* ***she does quite a bit of lab work for me*** *as well, you know, casting models she's got a lot of experience with that (DP5)*	*she does quite a bit of lab work for me*		
8.	***She actually does a wide variety*** *you know if I get a little kid in she's very good with the small kids takes a lot of patience with them (DP5)*	*she actually does a wide variety*		
9.	*I see her as the cornerstone of the practice. In fact****, I don't see anyone unless they've seen the hygienist. (****DP2)*	*I don't see anyone unless they've seen the hygienist.*		
10.	*more* ***dentists are seeing hygienists as professional people****, that have insight into problems and into solving them (PBD2)*	*dentists are seeing hygienists as professional people*		
11.	*When it comes to patient care we work very well together. There's a good standard of mutual respect from both parties.* ***They respect my opinion quite a lot as well as I respect their opinion****. (OHP2)*	*They respect my opinion quite a lot as well as I respect their opinion*		
12.	***I'm really very happy that hygienists now have a bigger role in operative dentistry****, they can do the basic restorative procedures and also for a lot of those emergency procedures (DL1)*	*I'm really very happy that hygienists now have a bigger role*		
13.	*a fissurerotomy you take a very fine bur... So very, very fine bur in a fast-hand piece. And you basically cut out the fissure, you cut out, you don't just etch and seal... you cut out the fissure, you open it up and then you put sealant in I think that's fair enough. I think that* ***if the oral hygienist has been well trained... I don't see why an oral hygienist can't do it****. ((DP3)*	*that if the oral hygienist has been well trained... I don't see why an oral hygienist can't do it.*		
14.	*the* ***older generation dentists they would say "do as I say" whereas a younger dentist would say "have a look here****… how do you think you would approach this" (PBD2)*	*older generation dentists they would say "do as I say" whereas a younger dentist would say "have a look here…*		
15.	***younger dental dentists, that are very pro hygiene and profession and oral hygiene and therapy****. So, they are both dentist therapists and hygienists that accept each other and work amicably but then there's also problems out there.(DTL2)*	*younger dental dentists, that are very pro hygiene and profession and oral hygiene and therapy*		
16.	*I feel* ***I'm a specialist in prevention. I should be treated like that and recognised*** *for what I can offer (OHL1)*	*I'm a specialist in prevention. I should be treated like that and recognised*		

17.	*it was more about me not thinking that I was good enough…* ***it was about me really doubting my capabilities*** *(OHP3)*	*me not thinking that I was good enough… it was about me really doubting my capabilities*		
18.	*one thing I appreciate about where I work.* ***They respect me to the fullest****. They respect my profession and my role in the team. (OHP2)*	*They respect my profession and my role in the team*		
19.	*they won't overstep my boundaries when it comes to seeing a patient or consulting a patient. They'll give me full freedom to do that.* ***They won't walk in and tell me that I don't know better than them****. (OHP2)*	*They won't walk in and tell me that I don't know better than them*		
20.	*dentist, some actually saw you like as much as a colleague and a co-worker* ***and a professional in your own right*** *(OHP8)*	*a colleague and a co-worker and a professional in your own right*		
21.	*as a DT or a OH that you must prove yourself to the patients that much more. That you do know what you are doing, and* ***you know what you are saying and that what you are doing is just as effective as what the dentist is*** *doing. (OHL4)*	*you know what you are saying and that what you are doing is just as effective as what the dentist is doing*		
22.	*there is a lot more respect that has been gained,* ***respect for what they can do and can contribute to the practice****. whether working independently or under supervision, dentists are starting to see the value that OH brings (PBD1)*	*respect for what they can do and can contribute to the practice*		
23.	***So, your opinion also matters as a Hygienist*** *in terms of patient management and that level of working. (OHL4)*	*your opinion also matters as a Hygienist*		
24.	*it gives us self-worth, e.g., over here in my practice the dentist calls me and asks me… "what do you think, should we start this patient with an oral hygiene programme first?"* ***he is telling me I value your knowledge, so it is improving my self-worth*** *in a practice situation in a team situation. (PBD2)*	*he is telling me I value your knowledge, so it is improving my self-worth*		
25.	*the* ***hygienist should probably be the first port of call****, A lot of the minor procedures that a patient may come to practice for... a hygienist would be able to start that process. Whether it is restorations or initial assessment and diagnosis the hygienist could do ((DL1)*	*the hygienist should probably be the first port of call*		
26.	*that entrepreneurial hygienist would have… which there would* ***probably be a number which succeeds****. (DP 4)*	*probably be a number which succeeds*		
27.	*some would possibly like fall by the wayside and maybe* ***need the support of a dental practice to back them up****. (DP 4)*	*need the support of a dental practice to back them up.*		
28.	*when the legislation was passed, and he (my old boss) said to me...* ***go down and open up your own practice****. (OHP 6)*	*go down and open up your own practice*		
29.	*in some practices even the* ***patients first go to the oral hygienist, they do the examination and then they refer*** *which I totally agree with... as that's how it's supposed to be (OHL1)*	*patients first go to the oral hygienist they do the examination and then they refer*		
30.	***Hygienist is seeing the patients first nowadays, and that trust has developed over a period of time****. I think it took a long time, it evolved quite a bit… now the dentist can be playing golf on a Wednesday and the OH runs the practice… (PBD1)*	*Hygienist is seeing the patients first nowadays, and that trust has developed over a period of time*		
31.	*But I am working under independent practice which means if the two dentists are unable to come to work or they're on leave,* ***I am allowed to run the practice under his practice number without supervision****. (OHP2)*	*I am allowed to run the practice under his practice number without supervision*		
32.	*worldwide all OH are seen in the same light… we tooth scrapers and with IPP taking over now…* ***we actually getting a voice prove that we are an integral part of the team****…(PBD2)*	*we actually getting a voice prove that we are an integral part of the team*		
33.	*to teach a person how to maintain oral hygiene… but I would prefer an OH to do it when an OH is there within the midst of the health centre or whatever. Because I know they are doing it to the T! because I know that* ***as a dentist are showing us, but I'm sure that they are not doing it like they do it for OH*** *(DL3) Moved from distinctiveness*	*I'm sure that they are not doing it like they do it for OH*		
34.	***dentists have developed so much of trust in their Hygienists*** *that they just allow them to continue with the work, they just say "refer to the hygienist" (PBD1)*	***dentists have developed so much of trust in their Hygienists*** *that they just allow them to continue with the work*		

35.	***I do the charting the examination. And I do the treatment planning and I do the treatment coordination**. Back at the same time, she is able to obviously, clinically see an issue and call me. So, if she sees a defect or she feels the probe sticking or she sees an open contact, then obviously it's not a diagnosis, but it's an observation. (DP2)*	*I do the charting the examination. And I do the treatment planning and I do the treatment coordination*	~~**Controlling clinical decision-making**~~ **doesn't make sense for hygienists and therapists to treatment plan** **38 quotes** **Contesting doing complex tasks - 28** **Vs.** **Not contesting doing complex tasks - 10**	
36.	*my role generally, **I'm the first port of call... My role is diagnosis and treatment planning** (DP4)*	*I'm the first port of call... My role is diagnosis and treatment planning*		
37.	*by 2000 the process of care came in and by 2013, it became **dental hygiene diagnosis that was incorporated… specifically you can diagnose and you can do a differential diagnosis for all the things within your scope, the things that you can understand… the rest of it as always if you don't know what it is, just describe the lesion and say I'm referring**" (PBD4)*	*became dental hygiene diagnosis that was incorporated… specifically you can diagnose and you can do a differential diagnosis for all the things within your scope, the things that you can understand… the rest of it as always if you don't know what it is, just describe the lesion and say I'm referring*		
38.	*when independent private practice came into being... I mean that was in 1991 - 1992. They had ... **they were already diagnosing and making treatment plans for patients. You know if they went into private practice and that's what they were doing.** They always had to do you know recording of the patient's history charting diagnosing the oral health status. There was no question that we had to do. PBD3*	*they were already diagnosing and making treatment plans for patients. You know if they went into private practice and that's what they were doing.*		
39.	***If they need additional perio reassessment, I'll do it** and then I'll probably refer back to her for root planing or kind of more invasive stuff, (DP4)*	*If they need additional perio reassessment, I'll do it*		
40.	***when it comes to full treatment planning, I will still take over** on that stage. But certainly, you know primary diagnosis i think that's quite an important part of what she's doing. (DP5)*	*when it comes to full treatment planning, I will still take over*		
41.	*they go back to the dentist and the **dentist completes the comprehensive dental plan, and then refer back to the OH**, that's how it works. (DL4)*	*dentist completes the comprehensive dental plan, and then refer back to the OH*		
42.	*I **have to work the patient up to the end, but they come and do the treatment that's needed** for the patient. (OHP2)*	*have to work the patient up to the end, but they come and do the treatment that's needed*		
43.	*you get other practices where **you get dentists where he will tell the oral hygienist actually what she is supposed to do** (OHL1)*	*you get dentists where he will tell the oral hygienist actually what she is supposed to do*		
44.	*I have never seen an issue with diagnosing. At the end of the day, if you can't see it's a Class IV abrasion lesion, what are you treating then, how you gonna realise you have to treat it if you can't diagnose it… it marries the two*" (PBD4)	*I have never seen an issue with diagnosing. At the end of the day, if you can't see it's a Class IV abrasion lesion, what are you treating then, how you gonna realise you have to treat it if you can't diagnose it…*		
45.	*If it like caries prevention and perio treatment and that kind of thing then it's all up to me. **I can decide the treatment plan and what needs to be done**. Obviously if there's active work that's being done by the dentist then that would tie in with them. But generally, I could still do what I wanted to do in addition to what the dentist wants to do. (OHP5)*	*I can decide the treatment plan and what needs to be done*		
46.	*I'm happy with, with students that are opening practice because I feel that they are trained well, the relevant **training has equipped them to make their own decisions about diagnosis and they know referral patterns** (DTL2)*	*training has equipped them to make their own decisions about diagnosis and they know referral patterns*		

47.	As if we can't think... And **yet we teach our students to do a proper examination, do a diagnosis, work out the treatment plan so they can...** they are able to do it (OHL1)	yet we teach our students to do a proper examination, do a diagnosis, work out the treatment plan so they can...		
48.	it doesn't it actually **doesn't make sense for hygienists and therapists to treatment plan**. If the treatment plan is limited to their to their scope of practice which is now, possibly detrimental to the patient's health. (DP1)	doesn't make sense for hygienists and therapists to treatment plan		
49.	**I have always been doing diagnosis, and treatment plans**. Practice that I started working for from the time I qualified..., it was policy that every new patient sees the hygienist first. So, what it was I do the cleaning, I do the charting and everything, and then calling the doctor and say, Doctor, this that and the other is what I see. And he then does his consult from there... (OHP6)	I have always been doing diagnosis, and treatment plans		
50.	she does some diagnosis, planning, **I don't allow her to do a full comprehensive treatment planning on it that's, that's just way above that what's needed** but she's able to see quite a few new patients and do quite a bit of triage work (DP5)	I don't allow her to do a full comprehensive treatment planning on it that's, that's just way above that what's needed		
51.	it will take society, a long time I think **to just trust a diagnosis coming from a hygienist**. (DP2)	to just trust a diagnosis coming from a hygienist		
52.	it would also **require that the hygienist is capable and that they should have that necessary skill to make that initial diagnosis for referral**. So that is the key, that the hygienist should be prepared well enough and be able to refer appropriately (DL1)	require that the hygienist is capable and that they should have that necessary skill to make that initial diagnosis for referral		
53.	that is where the concern of the dentist come in… they feel that **do the hygienists and therapists recognise all these factors torefer to them. And are patients getting the best treatment** that can be afforded to them. So that I would say would be the concern from the dentist side.(DL1)	do the hygienists and therapists recognise all these factors torefer to them. And are patients getting the best treatment		
54.	But hygienists, I don't think are allowed to do full assessments or check-ups at the stage. So, from that point of view, **they wouldn't be able to, to make that call**. (DTP3)	I don't think are allowed to do full assessments or check-ups at the stage. So, from that point of view, **they wouldn't be able to, to make that call**		
55.	the **limited assessment makes sense so that you can give the patient a peace of mind** to say, you know, as a hygienist I've checked everything out (OHP8)	limited assessment makes sense so that you can give the patient a peace of mind		
56.	It **makes sense to get paid less for consultation because ours is limited, we don't have the expertise that a dentist** has. (OHP8)	makes sense to get paid less for consultation because ours is limited, we don't have the expertise that a dentist has		
57.	**they don't think that we are as capable as they are**. Not with the expanded function (OHP1)	they don't think that we are as capable as they are		
58.	in **some practices even the patients first go to the oral hygienist they do the examination** and then they refer which I totally agree with... as that's how its supposed to be (OHL1)	some practices even the patients first go to the oral hygienist they do the examination		
59.	Sometimes in the treatment planning phase, I'll sit together with the dentist and **we'll decide, you know what's the best way forward for the patient was certain things I cannot decide on ... so we sit together** and we discuss. (DTP3)	we'll decide, you know what's the best way forward for the patient was certain things I cannot decide on ... so we sit together		
60.	the X-rays are sometimes misleading. 50% of the time it's often misleading. I still work on the analogue I don't have digital x rays. However, some of my analogue x rays have turned out better than digital. So, I'm more comfortable**... if it goes deeper within the dentine without you having access to a dentist, you are a bit more weary. I'm a bit more scared** (OHP8)	if it goes deeper within the dentine without you having access to a dentist, you are a bit more weary. I'm a bit more scared		

61.	***I don't take it upon myself to do a treatment plan and discuss it with it the patient***. *So, I would just make a note on the file and encourage the patient to have regular check ups with the dentist. So, that, in our practice I'm not the one taking x-rays. So, the dentist is doing the x-rays, the diagnosis of what needs to be done, and the treatment plan. So, ja. So, that again didn't change for me. (OHP1)*	*I don't take it upon myself to do a treatment plan and discuss it with it the patient*		
62.	*I had taken her patient off fluoride toothpaste and only put her on Xgel... She said* ***"She's not a dentist and she doesn't know! You need fluoride!" And I'm like, "No, you don't need fluoride" You see? So then I had to phone Dr ..... and put her online so that the patient could hear what Dr ..... said***. *So, I said, "You see, there's different opinions." And it upsets me (OHP4)*	*"She's not a dentist and she doesn't know! You need fluoride!" And I'm like, "No, you don't need fluoride" You see? So then I had to phone Dr ..... and put her online so that the patient could hear what Dr ..... said*		
63.	***I'm more thorough, because I'm scared of being caught***. *Because I'm so, I've got this thing at the back of my head that the dentists are waiting to catch you. (OHP4)*	*I'm more thorough, because I'm scared of being caught*		
64.	***I make my patients sign that form saying "Look, I'm not a dentist, you have to go back to a dentist to see."*** *Because I can't always, I don't check everything. (OHP4)*	*I make my patients sign that form saying "Look, I'm not a dentist, you have to go back to a dentist to see."*		
65.	*So,* ***they are aware that I don't diagnose****, but I do see a lot and I refer out. (OHP4)*	*they are aware that I don't diagnose*		
66.	*I think that there one about the x-rays as well, and dental examinations. Because* ***they said that we not actually allowed to make a diagnosis*** *" ons maak mos 'n voorloopige" for me if I was a dentist, if had someone performing for example PRR… if you don't know what you doing, and you go into the pulp, then that patient has to be referred to a dentist there and then. And if there is no dentist available, what are you going to do? (OHL2)*	*they said that we not actually allowed to make a diagnosis " ons maak mos 'n voorloopige"*		
67.	*think one always* ***a lack of knowledge… I think it's not so much from the practical… its more about the background (****OHP3)*	*a lack of knowledge… I think it's not so much from the practical… its more about the background*		
68.	*It's the competence that the dentist will query*" (DTL1)	*competence that the dentist will query*		
69.	***I'm scared to give a block. Yeah, I've done full anatomy in my day, we did anatomy from the head from the head to the toe***. *So, I've done anatomy of the whole body. And I understand the anatomy of the, of the trigeminal nerve and the inferior alveolar nerve and I continue now I worry about giving a block our colleagues maxillofacial surgeons who feel the same as me guys who've given a block and the patient's walked away with a with a numb tongue and a numb lip forever. So, now you're telling me that oral hygiene has had been given that through again. Good luck to them. Good luck to them. (DP3)*	*I'm scared to give a block. Yeah, I've done full anatomy in my day, we did anatomy from the head from the head to the toe*		
70.	*Well,* ***you're just a hygienist, what do you know****?" And I'm tired of it because sometimes I look and I think I'm doing better work on my patients; the patients are happier with me. But because they don't know me, the dentists, or they think I just know basic about dentistry, then they don't really, they have this perception that I don't know much. (OHP4)*	*you're just a hygienist, what do you know*		
71.	*what bothered me, I think, particularly was the fact that* ***they kept saying that we're not capable of doing this*** (PBD3)	*they kept saying that we're not capable of doing this*		
72.	***I still feel a dentist can see more than I see****, so I always relay that to my patients. (OHP4)*	*I still feel a dentist can see more than I see*		

OH - 32, DT - 10, DENT - 29, Total quotes 72

Total = 216

Chapter 7

Table 7.1 Data structure for working conditions

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	
1.	*you will **never get an OH because a single dental practice can't afford** an Oral Hygienist. (DL4)*	*never get an OH because a single dental practice can't afford*	**still working for a dentist in private practice** **20quotes** **Contestation about dentists dominating practice types** **No contestations – 11** **Contestations – 9**	**Aggregate dimension** **Work arrangements**
2.	*I don't think a therapist is going to work in a group practice with a dentist and hygienist, **a hygienist and dentist would work. I think the therapist is, is meant to be a lone ranger** (DP1)*	*a hygienist and dentist would work. I think the therapist is, is meant to be a lone ranger*		
3.	*I have a multidisciplinary practice with **a prosthodontist and other dentists an endodontist and a periodontist. I am a general dentist**. Okay. And I have a hygienist as well. (DP2)*	*with a prosthodontist and other dentists an endodontist and a periodontist. I am a general dentist*		
4.	*I don't think that the dentist should be threatened by the idea of expanded scope for hygienists because if they work in a multidisciplinary team **everyone benefits**. (DL1)*	*in a multidisciplinary team everyone benefits*		
5.	*I have interviewed for jobs offers in my practice… **they prefer working for groups because they get a higher salary** and they deal primarily with preventive dentistry and maintenance of crowns, implants, patients' teeth through diet counselling. It is very rare that you get an OH working with a single dental practitioner. (DL4)*	*they prefer working for groups because they get a higher salary*		
6.	*when you are looking at it business-wise, it would be **better for a dentist to have a health centre where he has all three professionals** (DL3)*	*better for a dentist to have a health centre where he has all three professionals*		
7.	*me and a colleague used to work together for a couple of years. In another dentist. And we function on our own or have both of us functions on our own separate practice numbers and **we shared the cost of the reception, we shared the cost of the rent, we shared the cost of some instruments** or some tools that we shared. So, in a certain way that could possibly work for an oral hygienist as well, you know that will take the risk off the dentist... the oral hygienist still practising independently (DP5)*	*we shared the cost of the reception, we shared the cost of the rent, we shared the cost of some instruments*		
8.	*I employ hygienists, I employ dentists... Yeah, I employ those skills. it's not a group practice like in the sense that there is one practice there's all of these people is like **six different practices with different teams in them. (**DP1)*	*six different practices with different teams in them.*		
9.	*therapists have like **time-sharing, or part-time, a dentist coming to the practice**. So, I can have a dentist come to my practice because this is how this how it worked. So, I will treat all my patients and on one day. If my patient agrees that they would like to have a root canal treatment or a crown down on that afterwards. I will book, all the specialized patients that a dentist can do for a dentist, that works with me at my practice (DTP1)*	*time-sharing, or part-time, a dentist coming to the practice*		

10.	*therapists, having a dentist coming. I mean there are dentists in Durban that do not have practices have **closed the practices, and like, cut down off all the expenses** in terms of lights water telephone, you know, staff and salaries and whatever, just to go like they've got five therapists Monday to Friday (DTP1)*	*closed the practices, and like, cut down off all the expenses*		
11.	*in terms of hygienists, I think to be very honest with you... I think **a lot of them are still working for a dentist in private practice**. (PBD3)*	*a lot of them are still working for a dentist in private practice*		
12.	***I do get a locum to come and do that**. So, we've got that as well where they can have things done under one roof... that does mean her coming in sometimes, she is only there when I schedule the patients. (OHP6)*	*I do get a locum to come and do that*		
13.	*a health centre that has a dentist, OH, and a DT and then you find that it's maybe **a dentist that has a lot of surgeries… then they hire out DT and OH**. (DL3)*	*a dentist that has a lot of surgeries… then they hire out DT and OH*		
14.	*usually in big dental practices, corporations, or **groups, you have maybe one or two OH working for that group of dentists**, (DL4)*	*groups, you have maybe one or two OH working for that group of dentists*		
15.	*I have a solo practice so **it's kind of me and my hygienist** at the moment. And that's how I work... (DP4)*	*it's kind of me and my hygienist*		
16.	*I think there are **many working with dentists**. Many working for dentists and with dentists. (PBD3)*	*many working with dentists*		
17.	*some of them don't just, you know, own one practice, **they own more than one practice and they employ the fellow therapists** to it as well. So, a lot of them they are few of them in. But I think the ratio of those that are going into private practice is more than that that's working for state. (DTP1)*	*they own more than one practice and they employ the fellow therapists*		
18.	*the previous connotation that **they will be in charge of the practice I think was a sad state**. So, maybe that will change with time but unfortunately, I don't think practitioners have the same view. (PBD1)*	*they will be in charge of the practice I think was a sad state.*		
19.	*it only makes sense for them once a mouth has been rehabed and then to follow up and you know, maintain it for every six months, ongoing until there's a problem again. But for me, **unless and until hygienists is not part of a group practice. Doesn't make sense**, it doesn't make sense (DP1)*	*unless and until hygienists is not part of a group practice. Doesn't make sense*		
20.	*if we all open our minds and be a little more accepting of each other. Because there are some practices and some **dentists that I know work beautifully with therapists and hygiene, so they have roles, defined roles** within the practice. (DTL2)*	*dentists that I know work beautifully with therapists and hygiene, so they have roles, defined roles*		
21.	*I know one or two OHs that have a good referral system between her and other specialists and other general practitioners… but **I can only speak of a limited amount of people that I know of where the referral system is good**. (OHL5)*	*I can only speak of a limited amount of people that I know of where the referral system is good*	**Referral is somewhat contentious** **18quotes** **Quotes which show that there are contestations about referrals** **No contestations – 5** **Contestations – 13**	
22.	***referral is somewhat contentious**, So, if the hygienist is going to refer to the dentist and the dentist does not refer back, it's only human nature that the hygienist will not refer to that dentist again. (DL1)*	*referral is somewhat contentious*		
23.	*it's quite a big practice. They have five dentists working there and they also have 3 hygienists that alternate... like each of them does two days in a week or whatever it is. So, they do refer they don't see Keycare patients anymore on Discovery. So, majority of the discovery keycare patients come and see me and then there's also a couple that have been there after I left and wasn't happy... So, they shifted over to my practice, but I to be very honest with you in terms of finances, I think **a lot of dentists would have issues with referring their patients to you**. (OHP6)*	*a lot of dentists would have issues with referring their patients to you*		
24.	*dentists have been in the country for longer that's the professional the community or society knows. That dentists become the first point of call for patients naturally, which obviously puts the **OH and DT in a very precarious situation because now you must rely on the dentist to refer to you** (OHL4)*	*OH and DT in a very precarious situation because now you must rely on the dentist to refer to you*		
25.	***referring from a hygienist to dentist there is no problem...But sometimes dentists don't refer back** to the hygienist, even if they should (DL1)*	*referring from a hygienist to dentist there is no problem... But sometimes dentists don't refer back*		
26.	***We wanna work with them but they don't wanna** work with us. (OHP4)*	*We wanna work with them but they don't wanna*		
27.	***I don't think a dentist would refer to a therapist... Because he can do everything himself**.... but hygienist to therapist. I would, I would say it would be based on relationship.(DTP3)*	*I don't think a dentist would refer to a therapist... Because he can do everything himself*		

28.	***I have not referred a patient to a dentist*** *it's but in that way, when in private practice it was always like a specialist.(DTP1)*	*I have not referred a patient to a dentist*		
29.	*SA has a long way to go,* ***I don't think that the dentists are open to referring patients to OHs, mostly because dentists still have OHs in their payroll****, so why would they refer to me as an independent practitioner? When they have an OH onsite (OHL4)*	*I don't think that the dentists are open to referring patients to OHs, mostly because dentists still have OHs in their payroll*		
30.	*spoke to a doctor, which is about five blocks away and* ***he said that he is not going to refer back to me****. So if I refer, he didn't have a hygienist at that point. And he said, but he's planning to get one and if I'm interested, I can go work by him on an afternoon basis, or a couple of hours a week on different days, but he won't refer to me and he said in so many words, hence I'm very wary about sending my patients to him. (OHP8)*	*he said that he is not going to refer back to me*		
31.	*The problem comes in when people don't understand their limitations, and* ***they don't respect the referral systems that are in place already****… and the scope basically defines your referrals, when and how to refer… (PBD4)*	*they don't respect the referral systems that are in place already*		
32.	*they refer amongst each other… the DT don't do endodontics as far as I know… so, if the caries is quite deep and you get into the pulp, there is a system of internal referral… that is why this* ***inter-complementarity should be encouraged within the training environment (****DL2)*	*inter-complementarity should be encouraged within the training environment*		
33.	*I even tried to have like a hygiene referral practice where we've got like* ***a satellite, they do the cleanings they do the recalls and refer... to work to us****, but it has never worked out for us (DP1)*	*a satellite, they do the cleanings they do the recalls and refer... to work to us*		
34.	*There is perfect harmony, the hygienists do the cleanings and the initial assessments. The therapist can do the check-ups and do the basic dentistry, the fillings and things like that, and then refer to the dentist who can do the specialized work. So, if they can work together, and there's no ego involved, I think* ***the 3 can work very well together****.(DTP3)*	*the 3 can work very well together*		
35.	***I don't wanna refer out*** *because if I write a letter: "Dear Dr, please assess da da da…" The patients say to me they get annoyed. They are so angry with us being in private practice (OHP4)*	*I don't wanna refer out*		
36.	*Never from them, never. Never, never from an orthodontist, never back from Dr Jo..., never from Dr Lo...., nothing.* ***I, no, never had one referral back****. (OHP4)*	*I, no, never had one referral back*		
37.	*I do have patients that* ***I refer to other practices****. (OHP6)*	*I refer to other practices*		
38.	***she doesn't get any referrals from anybody... although she refers to dentists****... in the area where she works (OHL1)*	*she doesn't get any referrals from anybody... although she refers to dentists*		
39.	*it's* ***taking dentistry to the masses*** *(DTL2)*	*taking dentistry to the masses*	**Government cannot afford to have dentists everywhere** **14quotes** **No contestations – 3** **Contestations – 11**	
40.	*what the government wants to do in the sense of NHI… yes, they need to do that tohelp patients. Because we all know that as* ***it is not all areas have dentists, mainly because the government cannot afford to have dentists everywhere. So, they therefore would have DT and OH****. So, it would be better to up the scope, to make sure that PHC is taken care of until that patient is able to go to a professional who can finalise whatever procedure (DL3)*	*not all areas have dentists, mainly because the government cannot afford to have dentists everywhere. So, they therefore would have DT and OH*		
41.	*I don't see what's the reason, for there to have been therapist in independent practice. Right. For the simple reason from what I understand****, government's whole intention of developing the whole dental therapy arm was for them was for the poorer socio-economic areas*** *as such (DP1)*	*government's whole intention of developing the whole dental therapy arm was for them was for the poorer socio-economic areas*		
42.	***therapists should be in those areas that their whole profession was kind of earmarked for*** *which is now the government facilities and all of those type of places... (DP1)*	*therapists should be in those areas that their whole profession was kind of earmarked for*		
43.	*I don't know what their idea was, but this this was the government idea. And* ***it*** *was to****alleviate and help the general public. I think it's a good idea. I think it dental therapist is a good idea but I personally would not be involved with it so I wouldn't.*** *(DP3)*	*to alleviate and help the general public. I think it's a good idea. I think it dental therapist is a good idea but I personally would not be involved with it so I wouldn't*		
44.	*I think, it's about looking at the dental needs of the greater community, the fact that dentists themselves serve a very small part of our population… and having other professionals especially in* ***government clinics can perform some of the basic care of a dentist at***	*government clinics can perform some of the basic care of a dentist at lower salary level… can allow government to expand*		

	lower salary level… can allow government to expand their access to care and as a dangling carrot for OH and DT to provide dental care *(DL1)*	*their access to care and as a dangling carrot for OH and DT to provide dental care*		
45.	*these people coming out that want to go into private practice, but **the intention was for them to work in government clinics** and for them to work in those areas right because your dentist is getting more expensive you need to bring layers under the dentist that's going to make it more cost-effective. Right. (DP1)*	*the intention was for them to work in government clinics*		
46.	*Now you've bring layers under by **creating sub-professions, with lesser skill sets and hence you pay them less** right now (DP1)*	*creating sub-professions, with lesser skill sets and hence you pay them less*		
47.	*I'm saying according to the needs of South Africa, even Africa as a whole... **therapy and hygiene is wanting** (DTL2)*	*therapy and hygiene is wanting*		
48.	*in the **public domain you probably require a therapist more and not a dentist**, if you look at the scope of what is done in those clinics (DL1)*	*public domain you probably require a therapist more and not a dentist*		
49.	*allowing independent practice is one thing but **facilitating it and enabling someone to go into practice is the other** thing"* **(PBD1).**	*facilitating it and enabling someone to go into practice is the other*		
50.	*government created this cadre of work, oral health worker. It was supposed to be for the state health sector but then they ran short of funds and they couldn't accommodate them all. And the way they thought of reasoning, **resolving the problem was to allow them private practice privileges. I don't think the reasoning was right**. (PBD1)*	*resolving the problem was to allow them private practice privileges. I don't think the reasoning was right*		
51.	***is there really a place for dental therapy?** because originally, they were trained to work in the public services for a specific reason.... (OHL1)*	*is there really a place for dental therapy?*		
52.	*government is trying to make a policy where they would **reduce the number of dentists and increase the number of DT and OH qualifying from institutions**. So, that they make sure that we have more PHC professionals… so that on its own has made the dental councils and associations to fight it, because it would mean that dentistry would be phased out slowly (DL3)*	*reduce the number of dentists and increase the number of DT and OH qualifying from institutions*		
53.	*motivating for independent private practice was, **can I open my practice and be my own boss** that was what it was... (PBD3)*	*I open my practice and be my own boss*	**I open my practice and be my own boss** **35quotes** **No contestations – 23** **Contestations – 12**	
54.	*I personally don't have an issue with independent practice. because that allows us to do what you basically want to do. And **you can decide how you're going to run your practice** and things like that, because working for the dentist as I've already said they tell you what to do because they feel that they are superior to you. (OHL1)*	*you can decide how you're going to run your practice*		
55.	*when an OH is in her own practice she can practise from the focus point of prevention. **She can do whatever is required from her…. there is not that pressure of "I need to see so many patients, and I'm only allowed to do this** and this and this…" (OHL5)*	*there is not that pressure of "I need to see so many patients, and I'm only allowed to do this*		
56.	***time flexibility, like if you had your own business** or whatever especially as a mom of a young child. That's a big one for me. (OHP5)*	*time flexibility, like if you had your own business*		
57.	*the initial attraction to independent practice is that you obviously set your own rules, you do it your own way* (OHL4)	*you obviously set your own rules, you do it your own way*		
58.	*I was playing and toying with the idea of opening my own practice and being not own boss is the wrong way of saying but more **control of your career of yourself and not have somebody tell you this is what you'll earn.** This is what you'll do. This is the hours you'll work, you have more autonomy. (OHP8)*	*control of your career of yourself and not have somebody tell you this is what you'll earn.*		
59.	***not having a boss like you can just decide what you want to do for the patient** and negotiate it with them and not have to take anything else into consideration. (OHP5)*	*not having a boss like you can just decide what you want to do for the patient*		
60.	***you can diagnose and you can do a differential diagnosis** for all the things within your scope (PBD4)*	*you can diagnose and you can do a differential diagnosis*		
61.	*to work out a treatment plan, to **decide this is what I want for my patient**…OHI, S+P (PBD2)*	*decide this is what I want for my patient*		
62.	*in my own practice **I can follow up my patient after two weeks without any charging**... because I want to know if the patient is benefitting from what I've done with him… and I will see him two weeks after that, if he is not 100%... whereas in a supervised practice, you have got to keep on moving and patients do not always have money to come back (PBD2)*	*I can follow up my patient after two weeks without any charging*		

63.	you need to think make sure that you are within a certain legal realm, and you practice within that. And if you did have a problem ultimately**, it's your responsibility. Which obviously will force whoever is going into IPP to know what they are doing** a lot more than someone who is still leaning on another professional. (OHL4)	it's your responsibility. Which obviously will force whoever is going into IPP to know what they are doing		
64.	in IPP when **I decide that the patient has gingivitis… I have a range of products that would fit with my specific patient**… whereas in supervised practice we had to use whatever he (the dentist) decided… so I think there is definitely a shift, because I can now match a product to a patient with a specific problem… (PBD2)	I decide that the patient has gingivitis… I have a range of products that would fit with my specific patient		
65.	I'm happy that I'm in IPP… cos **with age comes the ability to make decisions**… (PBD2)	with age comes the ability to make decisions		
66.	There are **no concerns as such about IPP for hygienists** because you know the thing is if you look at the whole spectrum of dental care if you if you employ the whole concept of division of labour (DP1)	no concerns as such about IPP for hygienists		
67.	I still feel that a **hygienist needs to work within a multidisciplinary type of group practice and not be on their own** (DP1)	hygienist needs to work within a multidisciplinary type of group practice and not be on their own		
68.	you know you can get an oral hygienist **to be an independent practice but still function within a dental practice**. (DP6)	to be an independent practice but still function within a dental practice		
69.	students that come out from our institution, and by like much, **the year after they complete a degree. A lot of them are already employed to do the in-service and the moment they do the one year. By God, I don't know how they find the premises and they all are in private practice** (DTP1)	I don't know how they find the premises and they all are in private practice,		
70.	I must say **not many hygienists have taken on the option of independent practice** for whatever reason (PBD1)	not many hygienists have taken on the option of independent practice		
71.	if you question what OH are doing after their undergraduate degree, they work in orthodontic practices or they become reps. But **none of them are very keen on going into their own IPP** and I don't know what the reason for that is. (DL4)	none of them are very keen on going into their own IPP		
72.	therapists.... The people that have opened up the people that are out there are coping, from what I can see they are making do with what they have... And **the large number of them in private practice that are hugely successful**. (PBD3)	the large number of them in private practice that are hugely successful		
73.	**they no longer see themselves as subservient** to somebody. They don't see themselves as beneath somebody ((PBD3)	they no longer see themselves as subservient		
74.	there's a clear distinction between the between the hygienist, and what she does... but I think that the **space for the therapist in independent practice is a bit of a tricky one**. (DP1)	space for the therapist in independent practice is a bit of a tricky one		
75.	IPP is implemented. If it goes down the route of fee for service as is currently with dentists, there is no reason to think that the outcome would be any different than what we're achieving with dentists because that favours a curative model. And **if hygienists now move and shift their focus from prevention to curative because it pays better or so, I think that will be a problem**. (PBD1)	focus from prevention to curative because it pays better or so, I think that will be a problem		
76.	I was so **scared and so nervous, and I said to him you know doc this is so big,** if this doesn't work, it's gonna be a problem. (OHP6)	scared and so nervous, and I said to him you know doc this is so big		
77.	I'm **not really interested in opening up an oral hygiene practice on my own without a dentist**. Just from the perspective I don't think people really want to go to me on one side of the town and then drive to their dentist on the other side of town. Because where I am now a lot of people do both one after the other. (OHP5)	not really interested in opening up an oral hygiene practice on my own without a dentist		
78.	mainly **not having the responsibility of the practice**, and the patients and the expenses (OHP3)	not having the responsibility of the practice		
79.	So, it didn't change for me. I would still just do what I would do. If I see something in the mouth, I will make the note on the file and I will ask the dentist to assess that. And get his recommendation of what he would like to do. Most of the time we obviously agree, you know, on what the treatment would be. But I don't take it upon myself to do a treatment plan and discuss it with it the patient. I would just make a note on the file and encourage the patient to have regular check-ups with the dentist. So, in our practice, I'm not the one taking x-rays. So, the dentist is doing the x-rays, the diagnosis of what needs to be done, and the treatment plan. So, that again didn't change for me (OHP1)	it didn't change for me. I would still just do what I would do. If I see something in the mouth, I will make the note on the file and I will ask the dentist to assess that. And get his recommendation of what he would like to do		

80.	*when you when you have a dentist on board, you're obviously your expenses are high in terms of material costs and that kind of stuff. So,* ***my initial thought of getting her in here in terms of bringing in more finance for the practice... didn't really pan out*** *that way basically... so for now it's just offering the service to the patient under the same roof... (OHP6)*	*my initial thought of getting her in here in terms of bringing in more finance for the practice... didn't really pan out*		
81.	*So, it is a* ***very primary care practice*** *so the patients who walk in here and see me and things are used to paying a lower amount for their care (OHP8)*	*very primary care practice*		
82.	*I like the fact* ***that independent practice opens other avenues****. Like, I could work in old age homes or for instance that I could work on the premises without a dentist being there. So, to empower myself and have more options (OHP5)*	*independent practice opens other avenues*		
83.	*I created the idea in their minds that I could* ***bring the mobile into corporate*** *because it would be more convenient for a patient to come downstairs in their room of choice (OHP4)*	*bring the mobile into corporate*		
84.	*if I went into independent practice what I would like to do is do something out of the box like go to schools and do check-ups there or go to old age homes and do check-ups there or have some kind of on the* ***road mobile business that doesn't involve your traditional scale and polish****. (OHP5)*	*road mobile business that doesn't involve your traditional scale and polish*		
85.	*OHs in IPP, and* ***they focus on bleaching/ tooth whitening*** *(OHL5)*	*they focus on bleaching/ tooth whitening*		
86.	*one that is* ***focusing on going to old-aged homes*** *doing preventive procedures (OHL5)*	*focusing on going to old-aged homes*		
87.	*one* ***OH that's making mouth guards*** *she is seeing it from a preventive point of view because she is preventing sports injuries of teeth and fractures… (OHL5)*	*OH that's making mouth guards*		
88.	*I have always had very competent hygienists. They* ***all asked my opinion on things they all seem to have been more comfortable having me on the, on the premises*** *(DP2)*	*all asked my opinion on things they all seem to have been more comfortable having me on the, on the premises*	**Supervised practice is for the practitioner to gain enough experience** **(taken from 7.2)** **22quotes** **Contestation about whether supervision is necessary for IPP** **No contestations – 10** **Contestations – 12**	
89.	*when I qualified, it was more assistant work you were seen more as an assistant with these privileges to treat patients and from there* ***you had very little engagement in the clinical decisions or in decision-making for each patient in terms of management*** *(OHL4)*	*you had very little engagement in the clinical decisions or in decision-making for each patient in terms of management*		
90.	*She's a marvellous competent clinician****. She obviously does her own differential diagnosis doesn't tell the patient but gives me her opinion****, she takes her x rays. If she feels it that's necessary. She gives local under my instruction. (DP2)*	*She obviously does her own differential diagnosis doesn't tell the patient but gives me her opinion*		
91.	*And she'll do kind of advanced periodic cleanings. But* ***generally, under my supervision****. (DP4)*	*generally, under my supervision*		
92.	***after doing that course you should be supervised for a while before being brought in independent practice*** *and going out and doing fissure sealants yourself, because the first few I did I asked the dentist.. (OHP8)*	*after doing that course you should be supervised for a while before being brought in independent practice*		
93.	*my mindset from my training was we follow the prescription of the dentist you do not... you do not work autonomously... If I can put it that way.* ***You don't make decisions that autonomously****, the Scale and Polish the decision of the dentist, everything is the decision of the dentists. (OHP8)*	*You don't make decisions that autonomously*		
94.	*a lot of OH would carry themselves that way in the workplace "so* ***I'm just going to do this because this is what I'm allowed to do" and I'm not going to challenge myself and ask questions, or engage and participate and learn****, it was limited to this is what you are trained to do and I'm going to do that only. (OHL4)*	*I'm just going to do this because this is what I'm allowed to do and I'm not going to challenge myself and ask questions, or engage and participate and learn*		
95.	*find you also get* ***a lot of hygienists still like ... Doctor, Doctor... you know that subordination thing****, and to me that is totally wrong.. (OHL1)*	*a lot of hygienists still like ... Doctor, Doctor... you know that subordination thing*		
96.	*supervised practice is for the practitioner to gain enough experience, because when you go on your own you are all alone, and you need to make rational decisions, so if you develop your expertise and your skills in that year* ***it helps you for your own growth and it helps you to establish yourself in terms of your competence*** *to be able to work independently (PBD4)*	*it helps you for your own growth and it helps you to establish yourself in terms of your competence*		
97.	***this is a form of internship to support the OH****… like the Commserve year for dentists. (PBD4)*	*this is a form of internship to support the OH*		

98.	she will make a note and call me. I'll also get a report from her what the bleeding index is what the plaque index is what the oral hygiene state is, I'll get a general report after every patient a verbal report and she makes notes (DP2)	I'll get a general report after every patient a verbal report		
99.	depending on which practice you work for… you may not actually have the privilege of taking x-rays every day. And you would find that OH were more than happy not to take x-rays. But after 10yrs that skill of radiography and radiology and interpretation of radiographic images eventually fades because you are not engaged within that process. So, as much **as its within your scope you are not engaging it every day… because let me just do my cleanings or my scaling and I'm fine with that**. (OHL4)	as its within your scope you are not engaging it every day… because let me just do my cleanings or my scaling and I'm fine with that		
100.	when we were trained, or when this course, was first designed, it was designed for this particular professional, oral health provider to to actually be working in a public facility, whatever public facility may have been, whether it was military, or whether it was the government hospitals, or the clinics or whatever. But it was not designed to work in private practice, in any form of private practice, whether it was with a dentist, or independent practice, it was only designed to work in the public sector. So they had a problem at that point in time, with us going into independent private practice (PBD3)	they had a problem at that point in time, with us going into independent private practice		
101.	it's important that as clinicians and as professionals that you become autonomous and that they fully entitled to run practices on their own. If they've got the experience, **I don't know I wouldn't suggest that hygienists coming straight out of university, opening up a practice** (DP2)	I don't know I wouldn't suggest that hygienists coming straight out of university, opening up a practice (also in work experience)		
102.	under supervision, I used to say this is what I want to do… but then **I would have run it by the dentist**, because sometimes the dentist just says "just do a cleaning" never mind the motivation or the technique, or education… (PBD2)	I would have run it by the dentist		
103.	My hygienist the one that I've got now has got a lot of experience, and the one I've had previously, you know, she just finished at university and she actually was the best in class. And **she was very hesitant you know; I think she was still a little bit unexperienced. She was still hesitant even though she had expanded functions she was still hesitant to do local anaesthetics. You know she was afraid of the complications what might happen if the patient feels anxious of the local anaesthetic** or, you know, whereas **my new oral hygienist is very confident in what she does you know she's not afraid to give the patient, local anaesthetic, or to take impressions and she's been in the business for quite a long time**. (DP6)	my new oral hygienist is very confident in what she does you know she's not afraid to give the patient, local anaesthetic, or to take impressions and she's been in the business for quite a long time		
104.	also sometimes your qualification doesn't prepare you for life out there. **So, if you're too young and inexperienced and you haven't worked in private practice and you just work for a year and you open up practice, then the struggles are quite huge**, and that's where students come back and tell us that they have problems. (DTL2)	if you're too young and inexperienced and you haven't worked in private practice and you just work for a year and you open up practice, then the struggles are quite huge		
105.	the transitions can be maybe a little scary because in that if Is qualified already what kind of course did they go on? **Did they get enough experience in that course to be able to do that particular expanded function** for IPP? (DL1)	Did they get enough experience in that course to be able to do that particular expanded function		
106.	I don't believe that the **diploma students don't have to stand back for the students that's got a degree. First of all, the ones with the diplomas are the ones that have all the experience** because we've been working already for however long. (OHP1)	diploma students don't have to stand back for the students that's got a degree. First of all, the ones with the diplomas are the ones that have all the experience		
107.	I'm coming **because I'm confident because I'm coming from international experience and I'm an older hygienist** and I've also got a stronger nature. So, I feel they must know their worth. (OHP4)	because I'm confident, because I'm coming from international experience and I'm an older hygienist		
108.	before I had completed my expanded functions… I could do tooth whitening… and a hygienist that came straight out of university actually burnt her first patients gums… so, **it doesn't necessarily mean that because you have done the scope at university that you can perform the act** (tooth whitening) properly (PBD2)	it doesn't necessarily mean that because you have done the scope at university that you can perform the act		
109.	most of the time **the OH actually find that they are not confident enough**… and they will stay a second year in practice supervised … you also know where your capabilities are and your abilities to function independently will range (PBD2)	OH actually find that they are not confident enough		

20 + 18 + 14 + 35 + 22 = 109 Total quotes

40 dentists / 14 therapists / 55 hygienists

Table 7.2 Data structure for Performing work procedures.

	Observations	**1st order analysis** **1st order concepts**	**2nd order analysis** **2nd order themes**	**Aggregate Dimension** **Performing work procedures**
1	*only a handful of practitioners really accept the hygiene profession. I still sometimes* ***feel that we are looked down upon, you are just a Hygienist****, you are just like someone assisting me (OHL2)*	*feel that we are looked down upon, you are just a hygienist*	~~**Respect in the workplace among professions – 19 quotes**~~ **+** **There was this exploitation of hygienists** **=** **41quotes** **Contested lack of respect when working as an employee**	
2	*might be the* ***view of a lot of dentists, that you're getting inferior care or inferior treatment****, you know, if a hygienist does it (OHP8)*	*view of a lot of dentists, that you're getting inferior care or inferior treatment*		
3	*as a DT or* ***an OH that you must prove yourself to the patients that much more****. That you do know what you are doing, and you know what you are saying and that what you are doing is just as effective as what the dentist is doing. (OHL4)*	*an OH that you must prove yourself to the patients that much more*		
4	*oral hygienists might feel that... I can do more things, so I've got a better status, but* ***I don't think that dentists believe it (OHL1)***	*I don't think that dentists believe it*		
5	***I don't think hygienists are being recognized*** *as well as independent practice independent practice as a, as a business/practitioners in their own right, you know, as a separate field of study in their own right (OHP8)*	*I don't think hygienists are being recognized*		
6	*it's just that* ***they call us cleaning ladies****/gentlemen… (OHL3)*	*they call us cleaning ladies*		
7	*Nothing, a cleaning lady, a lady to come in, and do, and listen to them, and* ***just clean and they will make decisions****. (OHP4)*	*just clean and they will make decisions*		
8	*you also hear of girls that say that they do not have that exposure, and they are kept… "****you the OH, you need to do the scale and polishes for the rest of your life****".(OHL4)*	*you the OH, you need to do the scale and polishes for the rest of your life*		
9	*So, they send out these huge quotes to do massive rehabilitations and its great work that they do. But it's almost like the one that doesn't support me was saying. It's like, you go in and buy a car and they say to you, "Right, this car's going to cost you R300 000. It's a great car, it's amazing. But* ***for R1000 extra you can get it washed." And he feels it's like that when you refer the patient to the oral hygienist after they've had big work done****. (OHP5)*	*for R1000 extra you can get it washed." And he feels it's like that when you refer the patient to the oral hygienist after they've had big work done*		
1	*And males in my experience they don't get jobs... For some reason* ***dentists don't want males. They don't see this as a male profession.*** *(OHL1)*	*dentists don't want males. They don't see this as a male profession.*		
1	*when it was a diploma… somebody said to me****… 'I thought that all OH had to be shapely and blonde and pretty and young'****… because it is a practice image! (PBD2)*	*'I thought that all OH had to be shapely and blonde and pretty and young'*		
1	*I feel* ***most dentists have that impression that we are there to do the dirty work****. (OHP2)*	*most dentists have that impression that we are there to do the dirty work*		
1	***older dentists do not want to employ a male OH****, because of that image… (PBD2)*	*older dentists do not want to employ a male OH*		
1	*I had a member say to me… what can I do, I turned 60yrs old and* ***the dentist said to me that he is sorry he doesn't want an old woman working for in his practice… because it doesn't fit his practice image****… (PBD2)*	*the dentist said to me that he doesn't want an old woman working for in his*		

		practice… because it doesn't fit his practice image	**No contestations – 6** **Contestations – 35**	
1	*they're using me as a practice manager because I do manage quite a lot of things. So, if we do have very unruly patients, **I'm the one that normally sorts issues out**. If there's a, like, a stock problem I'm going to be the one to sort it out. When it comes to unhappy patients, I'm normally the one that sorts it out. But when it comes to accounts and treatment planning and issues like that, they're always there" (OHP2).*	I'm the one that normally sorts issues out		
1	*I sometimes did feel though **that the dental team didn't see you as much as a professional**, equal as well as just one of the assistants sometimes. (OHP8)*	the dental team didn't see you as much as a professional,		
1	*I think it's fair for the amount of work I do because I'm not very busy. I **mean I do other odds and ends. I sometimes even do the banking** (OHP5)*	I do other odds and ends. I sometimes even do the banking		
1	*in general, dentists want to **use all hygienists as assistants** (OHL1)*	use all hygienists as assistants		
1	*It's quite different relationships between the dentists. The one really sees my potential and supports me when I need things. Like if I ask for things, he'll make sure that I get them and that kind of thing. And, he has a lot of faith in my ability to do procedures and stuff. The other one, there's two practice owners, that's the one. The other **practice owner has no regard for oral hygiene whatsoever.** It's like he doesn't take me seriously at all. He doesn't refer to oral hygienists at all, if patients have got bleeding gums, he'll go fetch some mouthwash out the cupboard and tell them, "Use this." And then the third dentist is, she's a very nice and amicable and stuff but she does a lot of the cleanings herself. (OHP5)*	practice owner has no regard for oral hygiene whatsoever, It's like he doesn't take me seriously at all. He doesn't refer to oral hygienists at all,		
2	*"I don't think it will ever change." And I said to him "Well, look, I mean, we've got to try and speak to the powers that be that will help change that." But **you can never get to those powers that be, because, well, you're just a hygienist. The dentist's rule**. (OHP4)*	you can never get to those powers that be, because, well, you're just a hygienist. The dentist's rule		
2	*she was employed and she did not really get the benefit of that, if you understand what I'm saying... so**, the dentist was actually making a lot of money off her** (DP6)*	the dentist was actually making a lot of money off her		
2	*I was never allowed to be sick**, I would have to work being sick because it was all driven about profit**. (OHP4)*	I would have to work being sick because it was all driven about profit		
2	*most of the dentists today are, they do get a bit lazy. And **they're more likely to just feed off your profit than actually come in and do the hard work**. So, I feel that they might not have a problem with the scope we have, but they may want to increase it at their convenience. (OHP2)*	they're more likely to just feed off your profit than actually come in and do the hard work		
2	*over twenty years of dentistry where I have never seen something like this, and **now it's all just money driven**, I feel extremely uncomfortable." (OHP4)*	now it's all just money driven		
2	*private practice couldn't have come at a better time because **I couldn't change their values and I couldn't because he wanted to make money as well and he didn't really care** (OHP4)*	I couldn't change their values and I couldn't because he wanted to make money as well and he didn't really care		
2	*it's your own time. I mean, I can work from home, I can see my daughter, I can go fetch my daughter. Whereas **before I had to work under a dentist, under his rules**. (OHP4)*	before I had to work under a dentist, under his rules		
2	*obviously financial as well. There's a big gap, I have to work if I think about the way that I'm locuming now... I go to **work three times as long as it is for that work** now that is almost the same as money (OHP6)*	work three times as long as it is for that work		
2	*the purpose that my bosses have for me is to have somebody hanging around at all times for walk-ins. To have somebody to do extra stuff like filing and to have somebody to assist when the assistants are off sick. They cancel my patients and then they make me assist. You know, somebody goes on leave, the minute I don't have a patient I'm expected to do reception. So **they use me for everything that they can because I'm on a salary and I'm there. So, I'm a bit of a stop-gap**, I think. (OHP5)*	they use me for everything that they can because I'm on a salary and I'm there, So, I'm a bit of a stop-gap		
2	*if you're in private practice (under supervision) you really have to **stand up against the dentist and demand that you are paid for what you are doing and for your worth (**OHL1)*	stand up against the dentist and demand that you are paid for what you are doing and for your worth		

3	*working for the dentist as I've already said **they tell you what to do because they feel that they are superior to you.** So, I think I've got no problem with that, but stick to prevention... that is my main thing. (OHL1)*	*they tell you what to do because they feel that they are superior to you.*		
3	*I'm **using my oral hygienist quite a lot for stuff that she's not you know charging any clinical codes** for, you know, like pouring models (DP6)*	*using my oral hygienist quite a lot for stuff that she's not you know charging any clinical codes*		
3	***what I didn't like about it was that you're tied down to that person**. And you've got to stay there for the duration of the day, whether you're busy or not. So, you're obligated to, to stay at the surgery, no matter what the situation is (DTP3)*	*what I didn't like about it was that you're tied down to that person*		
3	*when you first qualify and you don't have an option of where to work, **you've got to take what comes and you're desperate for that experience**. I think a lot of therapists are taken advantage at that stage (DTP3)*	*you've got to take what comes and you're desperate for that experience*		
3	*It's a step forward for hygienist they have always been subjected to working for somebody. **And it doesn't always work out in their favour** (DTP3)*	*And it doesn't always work out in their favour*		
3	*therapists that work for dentists are asked to do certain things. They are taught the procedures by the dentist they work for... And **they are expected to do it just because they're working there**. (DTP3)*	*they are expected to do it just because they're working there*		
3	*They **feel obligated to do it**. You know, I mean everybody wants to enhance the skills but at what cost. It shouldn't be at any cost (DTP3)*	*feel obligated to do it*		
3	*when you force someone that you can only do this within the confines of this. And you become good at it, but you feel you're not being adequately compensated for that or so, **there must be this feeling of being victimized or being discriminated against**, and therefore the need.(PBD1)*	*there must be this feeling of being victimized or being discriminated against*		
3	*the fact OH's that are working for someone… they have to generate an income, are not getting that satisfaction because they are looking at quantity and not quality (PBD2)*	*not getting that satisfaction because they are looking at quantity and not quality*		
3	*They have to **see 16 patients a day to generate sufficient income for the practice**… OH are being exploited.(PBD2)*	*see 16 patients a day to generate sufficient income for the practice*		
4	*the main complaint that we get from OH and the other is the **time limit(** (PBD2)*	*time limit*		
4	*dentist in supervision was charging for (everything) …and **he would not let any freebies slip by, so I had to spin money**… whereas in my own practice, nobody cares a hoot if I'm seeing a patient three times before their initial charge, (PBD2)*	*he would not let any freebies slip by, so I had to spin money*		
42.	***Mostly scale and polish**. In school holidays lot's of fissure sealants. (OHP5)*	*Mostly scale and polish*	**The main procedures that I do is just your general oral hygiene** **58quotes** **How many are contesting that hygienists do scope? And who are they?** **No contestations – 23 Contestations –**	
43.	*There were major changes with regards the scope. But **I don't think out there... that there were many changes**. (OHL1)*	*I don't think out there... that there were many changes*		
44.	***oral hygiene and do the scaling and polishing**, and then will also do a bit of periodontal treatment you know that the smaller type of less advanced cases, which she can manage with root planings (DP6)*	*oral hygiene and do the scaling and polishing*		
45.	***OH, so she sits and does all the preventive dentistry**, removes the plaque, calculus, gets the patients' dental IQ up to notch, diet counselling, (DL4)*	*OH, so she sits and does all the preventive dentistry*		
46.	*mostly I'm doing **S&Ps, giving education, doing instructions, applying fluoride, doing temporary restorations, giving local, taking x-rays**. (OHP2)*	*S&Ps, giving education, doing instructions, applying fluoride, doing temporary restorations, giving local, taking x-rays*		
47.	***mainly cleanings and bleaching**. So those are the two, the two things that are quite common. (DTP3)*	*mainly cleanings and bleaching*		
48.	*She does everything I've mentioned, **except this Class-I she's never done it**. (DP2)*	*except this Class-I she's never done it*		
49.	*I employ an oral hygienist... **She doesn't really do all those expanded functions she generally does, she's kind of pretty hygiene based**... hygiene perio, that kind of stuff. (DP4)*	*She doesn't really do all those expanded functions she generally does, she's kind of pretty hygiene based*		
50.	***She doesn't do any restorations** or she does tooth whitening that kind of work. So, she does she'll do the aesthetic stuff and she'll do the hygiene stuff (DP4)*	*She doesn't do any restorations*		

51.	she did do the advanced or the extended function course or whatever so she could do some local anaesthetics and all of that, but **she does quite a bit of bleaching** (DP6)	she does quite a bit of bleaching	**35**	
52.	**She doesn't really block you know inferior alveolar blocks and things like that**. But any infiltration local anaesthetic helps a lot. And she does quite a bit of it. (DP6)	She doesn't really block you know inferior alveolar blocks and things like that		
53.	there wasn't a demand for removable prosthodontic teaching, so they weren't interested. So, from the information I get from **the private sector is that they don't do a lot of removable prosthodontics**. (DL4)	the private sector is that they don't do a lot of removable prosthodontics		
54.	it **alleviated a lot of stress from the dentist**, if they could do the pit and fissure sealant they could inject because they needed to do a scaling and the dentist didn't have to come and inject (PBD3)	alleviated a lot of stress from the dentist		
55.	we do a lot of cleanings; I do a full assessment. So, the **full check-up, usually it's done with the cleaning on the same day and then we devise a treatment plan. And then start from there with fillings. If teeth need to be removed**, remove those teeth. And then from there, refer to the dentist. (DTP3)	full check-up, usually it's done with the cleaning on the same day and then we devise a treatment plan. And then start from there with fillings. If teeth need to be removed		
56.	it's taking me so long to do a buccal restoration, that he can do it in such a short period of time. And because **I'm not doing like for instance, all the time I'm not as good as he is with it. You know? So, my stress levels are so much higher, I'm taking twice as long, the money that I charge I can't charge the same** as the dentist. So, it's just not worth spending that amount of time and have that stress about it. (OHP1)	I'm not doing like for instance, all the time I'm not as good as he is with it. You know? So, my stress levels are so much higher, I'm taking twice as long, the money that I charge I can't charge the same		
57.	never in all the years of dental assisting prior to doing my diploma we had, you know, hygienists in the practice that would do re-linings and, you know, ART techniques and whatever. So, **I just sort of knew I wasn't going to use that**. (OHP1)	I just sort of knew I wasn't going to use that		
58.	**I do a lot of preventative work**. But 80% of the day I'm doing cleanings. (OHP2)	I do a lot of preventative work		
59.	**I mainly do S&P and I do LA**, but I was never shown how to do the mandibular block, so I only perform, infiltration and anterior teeth (OHP3)	Scale & Polish and I do Local Anaesthesia		
60.	here are still dentists who employ **their OH to just do S&P, fluoride, F/S,** and I think that's the conventional traditional. (OHL5)	their OH to just do Scale & Polish , fluoride, Fissure Sealants		
61.	**I don't do a lot of tissue conditionings** here or, you know, those specialised things that we learned in our scope. (OHP2)	I don't do a lot of tissue conditionings		
62.	the **hygienist also probably feel that the dentists do not give certain procedures the kind of respect that it deserves** for example, something as simple as a scale and polish seen as routine procedure by dentists and performed in just a few minutes, but that may not be done at the same level that a hygienist would do for the same price or less. So yes, I definitely feel that there are contested scope and I think that unless proper guidelines come out from higher associations there will never be any change. (DL1)	hygienist also probably feel that the dentists do not give certain procedures the kind of respect that it deserves		
63.	**I used to do a lot of temporary re-cementation of crowns. But I'm not doing that at the moment because we've got that new dentist**, the younger female one so she generally has openings in her day and then she does it. (OHP5)	I used to do a lot of temporary re-cementation of crowns. But I'm not doing that at the moment because we've got that new dentist		
64.	I am in a pretty high socio-economic area... So aesthetics, I do a lot of teeth whitening teeth but **the main procedures that I do is just your general oral hygiene** scale and polish fluoride treatment Yeah, don't do too much of Class 5s here as well so yeah, that's it so my main thing is scale polish, OHE, OHI (OHP6)	the main procedures that I do is just your general oral hygiene		
65.	the **fillings itself, the dentist that I was affiliated with they tended to do it themselves**, basically. So, I didn't have to really, really do much when I was under supervision with them except for maybe the odd case with the practices really, really busy (OHP6)	fillings itself, the dentist that I was affiliated with they tended to do it themselves		
66.	I have only done a handful (of PRRs...) So, a lot of them I have done was, I'm sure and the x-ray is sure... but that was also when I started out, **before I've had a few of the claims being rejected. Just contemplating is it worth it**. (OHP8)	before I've had a few of the claims being rejected. Just contemplating is it worth it		

67.	I do a fair bit of tooth whitening, I would say about 10% of my income, maybe eight, maybe **8% of my income is from tooth whitening, it's profitable** (OHP8)	8% of my income is from tooth whitening, it's profitable		
68.	It's good to be able to do **fissure restorations if it was more profitable, I will do them often**. (OHP8)	fissure restorations if it was more profitable, I will do them often		
69.	**I don't want to do glass ionomers and all those things** but that's just me... and getting back to the original thing how many oral hygienists are really doing this whole thing out there? the full scope. (OHL1)	I don't want to do glass ionomers and all those things		
70.	if I have a patient that just has the one sticky fissure... and I know it's not deep, and I know, I'll do it because I'm still quiet and don't have other patients who, even though I won't get much money for it. I can tell you **if I'm busy, I'm probably gonna just refer those to dentists** (OHP8)	if I'm busy, I'm probably gonna just refer those to dentists		
71.	some hygienists... they openly **say that they for instance scared to do local anaesthetics** (OHL1)	say that they for instance scared to do local anaesthetics		
72.	if the OH works for a year in practice and she opens up a practice she can be responsible for it… if that denture falls and it cracks or a tooth break during the tissue conditioning process, then the operator is liable for that denture. And I don't think they would want to spend R2000- 3000 on a repair of a denture because I think the laboratory charges in the region cash about R1300 and medical aid benefits it is very expensive. And patients are very difficult too and in my opinion, **I don't think they want to take that responsibility**. (DL4)	I don't think they want to take that responsibility		
73.	these people went and did a weeklong course in it and they're qualified to do it now, but I know a lot of them don't. They can but **they don't or they're too scared to, they don't feel confident** in it. (OHP5)	they don't or they're too scared to, they don't feel confident		
74.	I have yet again not done one tissue conditioner. I've never had the need to... it just happens just too few and far between. For us to do it. **You buy the material that will expire in your drawer. It's just not worth it**. (OHP8)	You buy the material that will expire in your drawer. It's just not worth it		
75.	In, two decades, **I haven't done a single tissue conditioner and not even one. So, even if one had to walk into my surgery tomorrow. I wouldn't attempt it** because it was two decades ago (OHP8)	I haven't done a single tissue conditioner and not even one. So, even if one had to walk into my surgery tomorrow. I wouldn't attempt it		
76.	I think that with some of the **procedures that they have allowed us to do, I wouldn't say that they are scoped on being preventive**, because you are already going to have Caries or a lesion if you going to do ART or PRR… (OHL2)	procedures that they have allowed us to do, I wouldn't say that they are scoped on being preventive		
77.	A patient that needs surgery and periodontal treatment as well, I don't know if I want to go jump in and do root planing and go nuts. I've leveraged myself here as a primary health care professional... not curative... So, I **don't think that a private practice here I'll be using LA much** (OHP8)	don't think that a private practice here I'll be using LA much		
78.	another procedure is also ART, LA - I **think if you not doing it every day… it could be a something that could hold you back or a little on the dangerous side**. (OHL2)	think if you not doing it every day… it could be a something that could hold you back or a little on the dangerous side		
79.	the ones that work independently also **focus mainly on scalings and polishes** and things like bleaching's, a lot of them do bleaching's. (OHL1)	Focus mainly on scalings and polishes		
80.	OH were also feeling like… **why do I need the expanded functions to perform a whitening if I can do it already**… I just feel that the HPCSA listed it and we need to conform… (PBD2)	why do I need the expanded functions to perform a whitening if I can do it already		
81.	I think if you work completely independently without a dentist at the premises then yes. Then you might do it more, **but because there's a dentist. I mean, why would I sit and do that if he can** do it? (OHP1)	but because there's a dentist. I mean, why would I sit and do that if he can		
82.	in the past **three years, I've used LA three times with patients** (PBD2)	three years, I've used LA three times with patients		
83.	it's **interesting to hear that oral hygiene is now allowed to give blocks** but anyway it is what it is. (DP3)	interesting to hear that oral hygiene is now allowed to give blocks		
84.	**they're not allowed to do anything invasive... like fast hand pieces**, I think they can use the slow handpiece, and they do sedative dressings, and like, basic class fives. (DTP1)	they're not allowed to do anything invasive... like fast hand pieces		

85.	we said **where does it say that you cannot use the drill**, where is that regulation? (PBD4)	where does it say that you cannot use the drill		
86.	I think they (hygienists) **shouldn't be.... doing restorative** (DTP2)	shouldn't be.... doing restorative		
87.	I just like never ever came across a hygienist, for instance, doing a **relining of dentures. You know, I don't think the dentist would send the patient for the hygienist to do that**. But I can't see if it happens to be that the dentist is going to do that, or that she sees the dentures is, you know, is loose and she wants to do it really. You know, she can do it, like, I would never do it but that's it. It's just the way that our practice work. So, I don't think, no, there's something that she shouldn't be doing (OHP1)	relining of dentures. You know, I don't think the dentist would send the patient for the hygienist to do that		
88.	I think it's just habit, they just used to do that. And maybe in a short, in a small way, **maybe not trusting us that we can do it as well as they do**. (OHP1)	maybe not trusting us that we can do it as well as they do		
89.	**dentists question whether I can do a filling** or not, and I'm allowed to do a class five filling (OHP4)	dentists question whether I can do a filling		
90.	they don't understand what a preventive resin restoration is or an atraumatic restorative restoration. They don't understand that, so **they thinking we're now just doing work illegally** but we're not, it's in our scope of practice. (OHP4)	they thinking we're now just doing work illegally		
91.	PRR I think that is one of the procedures in our scope that we were not even supposed to be able to do. For me personally **I would not even try that in a practice**, I don't even have the right equipment (OHL2)	I would not even try that in a practice		
92.	that is one of the procedures that we should not be doing and **we have had students that after they've had the demonstration, say "they will never even do it in practice"** (OHL2)	we have had students that after they've had the demonstration, say "they will never even do it in practice"		
93.	I think that you are taking a big risk… **if I'm allowed to give LA, I might just as well extract a baby tooth** now… (OHL2)	if I'm allowed to give LA, I might just as well extract a baby tooth		
94.	for us **as OH I don't think we should be doing PRR. That is for me one of the biggest concerns** about being trained and doing PR (OHL2)	as OH I don't think we should be doing PRR. That is for me one of the biggest concerns		
95.	2016 we had that meeting… and we clarified it **and a lot of them were contesting e.g. PRR, is it Type II? Do we use the drill**?(PBD4)	and a lot of them were contesting e.g. PRR, is it Type II? Do we use the drill		
96.	the **aesthetics, and even up to now it is not clear**, 100% sure, if it correct thing or not, (DTL1)	aesthetics, and even up to now it is not clear		
97.	OH were also feeling like… **why do I need the expanded functions to perform a whitening if I can do it already**… I just feel that the HPCSA listed it and we need to conform… (PBD2)	why do I need the expanded functions to perform a whitening if I can do it already		
98.	sometimes with extractions, of 8s or **wisdom teeth... some people really dentists believe that therapists shouldn't be attempting these**. (DTL2)	wisdom teeth... some people really dentists believe that therapists shouldn't be attempting these.		
99.	If you look at the 2000 scope, they do the treatment of sensitive dentine, is there a need to use the drill? No… so again **the idea was a hygienist cannot use the drill**… (PBD4)	the idea was a hygienist cannot use the drill		

41 + 58= Total 99

18 dentists / 16 therapists /65 hygienists

Table 7.3 Data structure for competing for work

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	Aggregate Dimension: Competing for work
1.	*How dentists view IPP for hygienists ... Poorly... I think generally in South Africa dentists are very territorial and quite old fashioned,* ***they would see it as a threat, and they would see it as, as a kind of challenge to their autonomy*** *in the profession. (DP4)*	*they would see it as a threat, and they would see it as, as a kind of challenge to their autonomy*	**They are seeing a red sign which says competition** **55 quotes**	
2.	*at the moment* ***dentists compete with hygienists because there isn't enough demand****.... isn't enough demand (DP1)*	*dentists compete with hygienists because there isn't enough demand*		
3.	*there's no room to employ them because* ***if we do they will compete with the dentist*** *in our system so it doesn't it doesn't make sense (DP1)*	*if we do they will compete with the dentist*		
4.	*unless they don't realize what their worth is per hour,* ***they'll always be thinking that the hygienist is competing with them and the therapist is competing*** *with them. (DP1)*	*they'll always be thinking that the hygienist is competing with them and the therapist is competing*		

5.	***dentists are always going to feel that hygienists are eating to their pie and therapists are*** *eating into their pie. There is no disconnect if the therapist is working in those structures where they were meant to work, and the same with hygienists and the same with dentists... (DP1)*	*dentists are always going to feel that hygienists are eating to their pie and therapists are*	**Contesting dominance by other occupations** **No contestations – 45** **Contestations – 10**	
6.	***we're going to be fighting for cleanings and PRRs and all of that****., because that's all we know, right, our natural mechanism is survival so what survival cut the cost right do it cheaper, but get the feet in get when you, when you destroy professions (DP1)*	*we're going to be fighting for cleanings and PRRs and all of that*		
7.	*I think is that* ***there is a limited market out there so there are only so many patients****. (DP4)*	*there is a limited market out there so there are only so many patients*		
8.	*the therapist, was* ***created to work in hospital care and not private practice*** *and now that this has changed over the years. It's created a bit of problems. (DTL2)*	*created to work in hospital care and not private practice*		
9.	*I think that there is a unique role when you have a dentist and a hygienist working together, I think that the combination works very well and can lead to a very efficient practice.* ***I still struggle with the dental therapist being part of that team because adding the dental therapist can make it a little bit too much****. (DL1)*	*I still struggle with the dental therapist being part of that team because adding the dental therapist can make it a little bit too much. from protecting profession*		
10.	*practices have to make it clear that this is an oral hygienist practice or a dental therapist practice or a dentist practice.* ***Once those lines are disrespected you are opening yourself up to chaos****. (DL1)*	*Once those lines are disrespected you are opening yourself up to chaos*		
11.	*with the medical aids becoming more difficult in how they fund certain procedures,* ***Dentists have started opening themselves up to doing the simple procedures. And I think that that is where there is going to be a lot of*** *tension between dentist and therapists... not so much between hygienists and dentists… (DL1)*	*Dentists have started opening themselves up to doing the simple procedures. And I think that that is where there is going to be a lot of tension*		
12.	*in a sense of those patients who have been wrongly treated eventually they end up going to dentists. But that has been made sure that it doesn't come out as it's happening because* ***most of the DT that are doing it are doing under dentists, so those dentists that are in charge are able to pick up on it and it doesn't get out****. So, the competition won't fade out… it will always be there. (DL3)*	*most of the DT that are doing it are doing under dentists, so those dentists that are in charge are able to pick up on it and it doesn't get out*		
13.	*"Why are you going to her? I've got a hygienist. Why are you, why's she there?" And then he said "Well, she sees a lot of the patients it's convenient for me." "No, but I've got a hygienist,* ***why are you allowing her to work on your mouth? You belong to me." "You belong to my practice."*** *So, they see it as a threat. (OHP4)*	*why are you allowing her to work on your mouth? You belong to me." "You belong to my practice.*		
14.	*jealousy or something like that… but we will never be able to do all the procedures that they are… but I think that when our scope is broadened…* ***every time it is revised and we get new procedures, I think people start feeling threatened****… because we are expanding and we can do nearly the same as you (OHL2)*	*every time it is revised and we get new procedures, I think people start feeling threatened*		
15.	*There's* ***great scope for therapists. More so than hygienists****, because therapists can do hygiene, (DP2)*	*great scope for therapists. More so than hygienists*		
16.	*I think number 1 is financial, number 2 is the authority… because* ***you always going to have someone who is going to be the boss and oversee everyone in his practice****… (PBD2)*	*you always going to have someone who is going to be the boss and oversee everyone in his practice*		
17.	*the oral hygienists setting up independently and the dental therapists. Definitely,* ***it would definitely be viewed as, as competition****. (DP3)*	*it would definitely be viewed as, as competition*		
18.	*Initially, dentists were very upset because as I said, economics play an important role. So,* ***the more people you have out there working in the field, the less money you're going to make****. (DTL2)*	*the more people you have out there working in the field, the less money you're going to make*		
19.	*your loyal patients keep on coming back then it's good, you know that you don't have to worry about getting patients or not getting patients because you learn patients always come back****, but the new ones will go to hygiene*** *(DTP2)*	*but the new ones will go to hygiene*		
20.	*I always tell my students, your practice is what you make of it* ***if you choose to have a low-end practice, then that is the type of clientele that you will attract to your practice and then someone like a hygienist would be a very big threat*** *to you. (DL1)*	*If you choose to have a low-end practice, then that is the type of*		

		clientele that you will attract to your practice and then someone like a hygienist would be a very big threat		
21.	In a time where patients are relying more on the medical aids, they don't want to pay private rates and think in these cases those **dentists would be very against the expanded functions for Hygienists and therapists**. (DL1)	dentists would be very against the expanded functions for Hygienists and therapists		
22.	Private practitioner it comes down to money, that **they would feel that their business is being stolen from them**. (DL1)	they would feel that their business is being stolen from them		
23.	Procedures that they can actually do **someone else is now doing, and that they will now not necessarily get that patient base**. (DL1)	someone else is now doing, and that they will now not necessarily get that patient base		
24.	I've realised most of what the DT is doing is restorations. It's their bread and butter… and XLA… so **if you then add restorations for OH there would be a clash between DT and OH, they will start fighting for patients**. (DL3)	if you then add restorations for OH there would be a clash between DT and OH, they will start fighting for patients		
25.	if I open another place that has maybe no dental practices or it has a few. Yeah, that has queues so that I don't experience the high competition, because **if there's high competition, there are less chances of making money**. (DTP2)	if there's high competition, there are less chances of making money		
26.	now **we're tramping on their toes because that's partially their patients**, their clients that we are taking away from them because we can now do it. (OHP2)	we're tramping on their toes because that's partially their patients		
27.	**they are seeing a red sign which says "competition, my money is going"**, I don't know what it is… but it was quite a shock to me to hear that they were treated with such disrespect… (OHP3)	they are seeing a red sign which says "competition, my money is going"		
28.	It's more convenient for the patients but they don't see it as that, **they just see us as a threat taking money out of their businesses**. (OHP4)	they just see us as a threat taking money out of their businesses		
29.	there's a little bit of a **conflict of interest going on there because we feel that being two hygienists there that the cleaning should be referred to us**. We've got such a small scope of practice compared to the dentists. (OHP5)	conflict of interest going on there because we feel that being two hygienists there that the cleaning should be referred to us		
30.	I still do locum.... because **the doctor there refuses to let me go**. (OHP6)	the doctor there refuses to let me go		
31.	So **dentists want to still do a scaling**, charge the patient, whatever, and it takes them 10 minutes. (OHL1)	dentists want to still do a scaling		
32.	a very plain and simple scenario, that **there are these bread-and-butter issues, we are now encroaching into their private sector, and that it's going to impact on their work** on their load of patients (PBD3)	there are these bread-and-butter issues, we are now encroaching into their private sector, and that it's going to impact on their work		
33.	some of them **openly say that we taking away their work**, again referring to the economical situation because they don't have work to do... restorative work so they want to do their own. (OHL1)	openly say that we taking away their work		
34.	dentists think that **we are taking away their bread and butter... or they are scared that we are going to** do it... And I can't see how because they still have to do restorations and extractions and crowns and all those things (OHL1)	we are taking away their bread and butter... or they are scared that we are going to		
35.	here's **mixed feelings with dentists, because some of them say it's fine... they can do it, and others as I also said already, that they think we taking away their work and we going to be a threat to them** (OHL1)	mixed feelings with dentists, because some of them say it's fine... they can do it, and others as I also said already, that they think we taking away their work and we going to be a threat to them		
36.	like LA… for years that's just been the DT and dentists that were able to do that. And I think that maybe if we are given stuff like this, procedures to perform that **they might think that we are going to work them out of their patients**, (OHL2)	they might think that we are going to work them out of their patients		

37.	***they would still do it themselves, because why would they give you the opportunity to get exposed to that patient**, when the patient is already sitting on their chair. So SA still has a long way to go on that front (OHL4)*	*they would still do it themselves, because why would they give you the opportunity to get exposed to that patient*		
38.	*no medical aid pays for whitening, so everybody can get that R4500. So**, it's almost as if you are taking money out of a dentist mouth** basically by being able to do bleaching as well as a OH. (OHL4)*	*it's almost as if you are taking money out of a dentist mouth*		
39.	*dental therapists particularly, because the type of work that we can do encompasses a large proportion of the general dentistry that they do in private sector. Because that's those are the bread-and-butter issues. **Those are the things that keeps you afloat**. Those are the things that people in the general public need (PBD3)*	*Those are the things that keeps you afloat*		
40.	*in areas where the skill of the dentist is much more valued in the sense that **he'll do his typical dentistry and then what the hygienists are doing is the follow ups** (DP 1)*	*he'll do his typical dentistry and then what the hygienists are doing is the follow ups*		
41.	***her skills rely on other skills** for that patient and not many patients, we patients just need it (DP1)*	*her skills rely on other skills*		
42.	*therapists that are out now and **the experience that we have in the work that we do, dentists are definitely threatened** by that, with the exception of course of the specialized work I mean the basic dentistry if you look at the work that therapists do the restorations and things. (DTP1)*	*the experience that we have in the work that we do, dentists are definitely threatened*		
43.	*the bleaching thing that was some big thing that going around, you know, and they wanted the hygienists wanted the approval to do it and therapist wanted to do it and stuff so I have not been too clued on that I know **there was a little bit of bickering at different levels**. (DTP1)*	*there was a little bit of bickering at different levels*		
44.	*I think **therapists are more, how do you say, intimidated by us** because we do have a larger scope. (OHP2)*	*therapists are more, how do you say, intimidated by us*		
45.	***they always feel they have the upper hand,** and they can always choose when or when not to have the upper hand. (OHP2)*	*they always feel they have the upper hand*		
46.	*They're a doctor, **they're a dentist and you're not** (OHP4)*	*they're a dentist and you're not*		
47.	*I think generally speaking it is accepted that there is a hierarchy, and **the dentist gets the final say** because of their qualification(OHP5)*	*the dentist gets the final say*		
48.	*Hygienists complain about how the dentists treat them, but they have to work so they tolerate it... and some are too scared to move because they feel comfortable, so they take whatever comes their way, and **they just do whatever the dentist tells them to do** (OHL1)*	*they just do whatever the dentist tells them to do*		
49.	*a lot of **dentists still want to be practice managers and employers** that are present a hygienist some of them still have this perception that therapists should not be in practice hygienists should not be in private practice (DTL2)*	*dentists still want to be practice managers and employers*		
50.	*the scope of practice is such that the dentist can choose... **it becomes about their preference** (DL1)*	*it becomes about their preference*		
51.	*As a younger profession, therapists, saw themselves as or there was this hierarchy of the dentist first the therapist was the and it was, or the hygienist was there it was to see like that, you know, **that there was our boss, but it's no longer than perception, because people have their own practices, because they are able to see themselves as a profession** on their own. (PBD3)*	*that there was our boss, but it's no longer than perception, because people have their own practices, because they are able to see themselves as a profession*		
52.	*there is a hierarchy… so the **dentists are the bosses and see themselves as that**… and obviously manage the practice accordingly (OHP3)*	*dentists are the bosses and see themselves as that*		
53.	*it's going to take years and years and if not in my lifetime in another lifetime to change, because each and every person is they can tell you honestly that for certain **Dental Association doesn't make it any easier to change mindset**. Because the, I think there's a huge prejudice in my opinion. (PBD3)*	*Dental Association doesn't make it any easier to change mindset*		

54.	*if a therapist is working with a **dentist they might be happy that DT can do the procedure, but if you are working alone it becomes a problem**… (DTL1)*	*dentist they might be happy that DT can do the procedure, but if you are working alone it becomes a problem*		
55.	*"I don't think it will ever change." And I said to him "Well, look, I mean, we've got to try and speak to the powers that be that will help change that." But **you can never get to those powers that be, because, well, you're just a hygienist. The dentist's rule** that, I feel the dentist's control that. (OHP4)*	*you can never get to those powers that be, because, well, you're just a hygienist. The dentist's rule*		
56.	*if you wanted was to go into private practice wants to open up in urban areas. Right. But the whole need is in the rural areas, where the whole dental therapy profession was meant to service in the first place. Now, if you give them an option to go into private practice. It doesn't take a rocket scientist to come to a conclusion that **they're going to move to the urban areas to do that. And then compete with the dentist and that's why dentists are going to be all in a huff and a puff about it.** So, there is a mismatch between policy and what's happening in the marketplace that's the problem here (DP1)*	*they're going to move to the urban areas to do that. And then compete with the dentist and that's why dentists are going to be all in a huff and a puff about it.*	**They all flocking to work in urban areas** **46 quotes** **Dentists are contesting that therapists and hygienists to move to urban areas** **No contestations – 15** **Contestations – 31**	
57.	***if you all condensed in urban areas and you're all competing**... it's a problem (DP1)*	*if you all condensed in urban areas and you're all competing*		
58.	***there's a huge scope for therapists in the, in the rural areas**, you know, where there is sepsis and infection and uncontrolled poor oral hygiene (DP2)*	*there's a huge scope for therapists in the, in the rural areas*		
59.	*there is definitely a scope in the rural areas. **I can't see there being a huge scope in built up effluent areas** but are definitely think in the rural areas where it is such a disastrous basic health care system. (DP2)*	*I can't see there being a huge scope in built up effluent areas*		
60.	*in a broader light of the country, i say what about people who, what about people who not living in the cities, what about people who are living in in smaller areas in the country, those people. And **if someone wants to do this and they want to set up in the city, and going to competition with a dentist well**, good luck again. Good luck to them but I don't know quite how that would pan out but it would be interesting to see. (DP3)*	*if someone wants to do this and they want to set up in the city, and going to competition with a dentist well*		
61.	*The problem is, most of the **therapists and hygienists want to work in areas where there's many practices already.** There is work out there, but they need to move to areas where they need it. (DTL2)*	*therapists and hygienists want to work in areas where there's many practices already.*		
62.	*in one street, there are 10 practitioners and if you go up. **If you go there, you're in competition with 10 people** there, I believe they should open practice where they are needed. Not in a highly booked suburb (DTL2)*	*If you go there, you're in competition with 10 people*		
63.	*The problem is where **everyone is choosing to practice, they all flocking to work in urban areas**… the government keeps training all these students not realising that they are not going where you want them to go… and so your problems in the rural areas is not going away, because the people that you are training are not going back. (DL1)*	*everyone is choosing to practice, they all flocking to work in urban areas*		
64.	*I think that the same way **they have tried to limit the number of dentists in an area they will probably have to do that for OH and DT too**. This will help to limit the number of these practitioners in a certain radius. (DL1)*	*they have tried to limit the number of dentists in an area they will probably have to do that for OH and DT too*		
65.	***most of them are (working) in the urban areas, they don't stay in the rural areas**… so yes it has shifted (DL2)*	*most of them are (working) in the urban areas, they don't stay in the rural areas*		
66.	*There was a dental group I don't know if it's Big Red Tooth or something, they had on their **website "At our practice the dentists takes so much pride and care in your good oral health and we don't ship you off to the hygienist"** they do the scale and polishes themselves. I mean, really.. (OHP8)*	*website "At our practice the dentists takes so much pride and care in your good oral health and we don't ship you off to the hygienist"*		
67.	*To do the different levels of work. And then you get practices where the clientele doesn't go for high-end procedures, and they would **do more simple procedures and it is these practices that would be very against hygienists or therapists in the area** or even in their practices (DL1)*	*do more simple procedures and it is these practices that would be very against hygienists or therapists in the area*		
68.	*there has been anecdotal evidence that **therapists actually refer to themselves as tooth doctors** in certain areas and I don't think that's fair. (PBD1)*	*therapists actually refer to themselves as tooth doctors*		

69.	they do feel threatened by the these professions that **they do feel that we are taking their work away from them, that they do feel we shouldn't exist**. (PBD3)	they do feel that we are taking their work away from them, that they do feel we shouldn't exist		
70.	I'm staying in a small town. But more than five. **It's tight. It's a small place with a lot of practice where there's high competition**. (DTP2)	It's tight. It's a small place with a lot of practice where there's high competition		
71.	You got to get the entire value chain together dentists, therapists, specialists and say guys, what value, so certain people are down the chain certain, certain people up the chain, what value can we add to each other. **not just say okay dentists do this, let us do this also at a cheaper price. Yeah, that's the most foolish strategy ever** it is bound to fail... right, it's failing already... (DP1)	not just say okay dentists do this, let us do this also at a cheaper price. Yeah, that's the most foolish strategy ever		
72.	third-party funders like the medical aids and things. I mean they pay for what they can afford. So now that most of the industry has become... do the work that you're going to get paid for, but **the work you're gonna get paid for isn't necessarily the best for the patient**. How do we start changing that (DP1)	the work you're gonna get paid for isn't necessarily the best for the patient		
73.	I also think that in this time of economic activity that **patients would not be opting for the higher-end procedures** (DL1)	patients would not be opting for the higher-end procedures		
74.	they feel that do the hygienists and therapists recognise all these factors torefer to them. And **are patients getting the best treatment that can be afforded to them**. So that I would say would be the concern from the dentist side. (DL1)	are patients getting the best treatment that can be afforded to them		
75.	people **go to a cheaper doctor** (DTP2)	go to a cheaper doctor		
76.	that can't afford the dentist fees, but they need an extraction. And then I say well, there's a lovely guy, I give the number, and off **they go and then they can have their extraction at a fraction of the price** because it's gotta be conducive for what I see. Some people don't have R800 for an extraction, they haven't got R200, but at least I can refer out. The poorer people need dental therapists, and the dental therapists have trained, they need patients too. (OHP4)	they go and then they can have their extraction at a fraction of the price		
77.	**not everybody has the funds for to go to the dentist** because the cleaning and check-up by me, is going to be a lot less than going to see a dentist (OHP8)	not everybody has the funds for to go to the dentist		
78.	**you can see me far more often than a dentist for the same service**, and still have money left for other things in your savings and your medical savings, (OHP8)	you can see me far more often than a dentist for the same service		
79.	**patients have a better chance in getting dental care and it's not as costly** as visiting a dentist for the same service. (OHP8)	patients have a better chance in getting dental care and it's not as costly		
80.	looking at the money aspect, OHs gets paid far less, so the patient gets charged far less than the dentist would for the same procedure. So, **from a patients' point of view if they knew that they going to pay R100 less for a cleaning with a hygienist they would rather just go to a OH i**nitially and get the referral from there. (OHL4)	from a patients' point of view if they knew that they going to pay R100 less for a cleaning with a hygienist they would rather just go to a OH		
81.	a patient coming to a dentist. And there's a questionable carious lesion. And if he or she just did some prevention, applied some fluoride, put on something to try and stop the process there, they'd get very little for that. But if they'd opened that lesion a little bit and put in a filling they'd get so much more. And if they put in a composite filling they'd get even so much more. So, **the motive for the composite filling in that patient is actually driven by finances and availability of the patient to pay for it rather what is best for that patien**t. (PBD1)	the motive for the composite filling in that patient is actually driven by finances and availability of the patient to pay for it rather what is best for that patient		
82.	a hygienist somewhere in Sandton who **is taking patients and doing clinical dentistry on them and posing as a dentist**. Hmm, and it's come to my notice a few times and I really think something seriously should be done about this (DP2)	is taking patients and doing clinical dentistry on them and posing as a dentist		
83.	dentists upset about is with **therapists and hygienists called himself oral practitioners**. It's true. They are practitioners, oral practitioners, but **they upset that the public is being misled**. (DTL2)	therapists and hygienists called himself oral practitioners		
84.	Most of the time **I also tend to do a lot of dentures**. I did impressions for the dentures. I do try infiltrations as well as adjust dentures where necessary. If the dentist is unavailable, I will do the adjustment. (OHP2)	I also tend to do a lot of dentures		
85.	**She eases dentures, she adjusts biteplates**. Hmm. She does the biteplates the impressions that fitting. She does IPR for my active aligners. (DP2)	She eases dentures, she adjusts biteplates		

86.	*I'm sure that **the DT are being employed by dentists, to do the procedures that they are not supposed to do** and using the codes that they are not supposed to use… (DTL1)*	*the DT are being employed by dentists, to do the procedures that they are not supposed to do*		
87.	*I've **never heard of a hygienist overstepping their scope … But I have multiple times heard of therapists** overstepping their scope. Where therapists are actually performing the work of dentists. (DL1)*	*never heard of a hygienist overstepping their scope … But I have multiple times heard of therapists*		
88.	*from a HPCSA perspective **there is no justification for treating outside of your scope**. You would have no case if anything went wrong (DL1)*	*there is no justification for treating outside of your scope*		
89.	*they therefore do other **things that they are not supposed to do to keep afloat**. (DL3)*	*things that they are not supposed to do to keep afloat*		
90.	*a health centre that has a dentist, OH, and a DT and then you find that it's maybe a dentist that has a lot of surgeries… then they hire out DT and OH. Then you find that the dentist doesn't have enough time to be in all these surgeries at the same time for particular patients. Then **they would teach them (DT and OH) to do these other parts which they would be able to do so that work can be pushed**, and patients can be seen but they have been seen by the DT for a procedure. I know those that are doing dentures and those that are doing crowns, there are such things that happening (DL3)*	*they would teach them (DT and OH) to do these other parts which they would be able to do so that work can be pushed*		
91.	*from the councils' side (HPCSA), **they know that they are not allowed to do that… but we know that most of them are doing it**.. (DL3)*	*they know that they are not allowed to do that… but we know that most of them are doing it*		
92.	*I think a lot of them, fear that we will go beyond the scope and complete the treatment, without having referred the patient out. I think that's, that's **the fear of a lot of dentists, is therapists work out of the scope**. (DTP3)*	*the fear of a lot of dentists, is therapists work out of the scope*		
93.	*I even give local for patients who come for bridges, etc. **I just give the local, they do the treatment**. (OHP2)*	*I just give the local, they do the treatment*		
94.	*a couple of therapists that **don't know where to stop, basically... and that for me is sad... I believe if we all have to eat and we if we all follow our guidelines, there won't a need** for this competition or this competitive nature. (OHP6)*	*don't know where to stop, basically... and that for me is sad... I believe if we all have to eat and we if we all follow our guidelines, there won't a need*		
95.	*what I've experienced with the **DT is that they almost always do not keep to their scope of function… and want to almost step into the scope of dentists**. That's what I've heard and maybe I've not experienced it first-hand (OHL5)*	*DT is that they almost always do not keep to their scope of function… and want to almost step into the scope of dentists*		
96.	*which do I have to refer because its beyond my scope … I can just do this much for my patient, now I need to refer… and **that is where the shortfall is with DT and OH, they don't know when to stop**, they don't know when to refer… (PBD4)*	*that is where the shortfall is with DT and OH, they don't know when to stop*		
97.	*the cases that I know about the **dentist actually said to them… I'll train you quickly to do this**… and they are working outside of their scope with lasers, (PBD2)*	*the dentist actually said to them… I'll train you quickly to do this*		
98.	***people they take chances and expect you to do the impossible**, which, obviously you need to know what your scope of practice is... and you need to draw the line there...(OHP6)*	*people they take chances and expect you to do the impossible*		
99.	*I've had dentists horrified that we maybe shouldn't be doing the procedure. Like saying to them "You know there's an expanded functions course? They want us to go back and one of things they want us to do is whitening." And the dentists are like, "Why!? You guys have been doing whitening for years and years. You **follow the instructions it's not rocket science. Like, why would you not be able to do whitening?" I've had dentists say that**, but I've never had a dentist say, "No, you shouldn't."(OHP5)*	*follow the instructions it's not rocket science. Like, why would you not be able to do whitening?" I've had dentists say that*		
100.	*there is also even situations where the OH would be told "okay, **I need to do XLAs of x number of patients,** you to start to do the LA on them (OHL5)*	*OH would be told okay, I need to do XLAs of x number of patients,*		
101.	*even extractions, a dentist forced his OH and they don't realise its keeping your boss happy but you are working out of your scope… and they (OH) have ended up at the HPCSA (PBD2)*	*a dentist forced his OH and they don't realise its keeping your boss happy but you are working out of your scope*		

102.	the space for the hygienist in independent practice **to set up an independent dental hygiene practice is very expensive** (DP1)	to set up an independent dental hygiene practice is very expensive	**Standalone hygienists… how many are doing well…** **26quotes** **Contesting that hygienists are able to do well in independent practice** **No contestations – 6** **Contestations – 20**	
103.	Good luck to them. Ah, don't say that sarcastically I mean a genuinely good luck to them, private practice is difficult. Yeah, private practice is very difficult. So, **if a dental therapist or Hygienist wants to go into private practice and can make it in private practice all the all honour to them** (DP3)	if a dental therapist or Hygienist wants to go into private practice and can make it in private practice all the all honour to them		
104.	it's probably five or eight years now that dental hygienists can be an independent practice, but I can count on my fingers the amount of hygienists that are in independent practice right**. It's not financially feasible** (DP1)	It's not financially feasible		
105.	Good luck to them. We know **that from a setup point of view doesn't make it financially viable** (DP1)	that from a setup point of view doesn't make it financially viable		
106.	If the hygienist works in a common practice for dentist and it's easy to move patients between the two... whereas a standing alone dentist and a **standalone dental hygienist, I don't know how many are doing well**. (DP1)	standalone dental hygienist, I don't know how many are doing well		
107.	**What would hygienists be making if she or he has to go into private practice.** you're going to be seeing patients that are coming for your yearly cleaning and polishing or your perio patients and things, obviously, for patient needs dentures they're not going to go to a hygienists has to have like you know impressions done and then go to a dentist. So, with this scope. Maybe that's what deters them from going into private practice (DTP1)	What would hygienists be making if she or he has to go into private practice.		
108.	I've employed three hygienists over the years and all three were **not doing significant numbers to make it worthwhile for them**, or for us (DP1)	not doing significant numbers to make it worthwhile for them		
109.	It just **doesn't make financial sense for me I know; I know what it costs to set up practices**. It can't cost them any less. Right. And I know what needs to happen on an hourly basis to be able to justify the investment. (DP1)	doesn't make financial sense for me I know; I know what it costs to set up practices		
110.	don't have other options other options are just going to compete unnecessarily. And if the idea is to do that to drop to drop prices and that's not gonna happen because everything in dentistry is dollar denominated or euro denominated, or county nominated. So, our costs are going up exponentially. There's no ways you can drop costs, in fact we need to ask for more money because with the rand dropping the way it does that at various times, **it doesn't make financial sense** (DP1)	it doesn't make financial sense		
111.	to set up a practice, **it cost a lot of money to set up a practice**, you have to buy own or rent rooms. You then have to own or rent equipment that's just the beginning. Now you've got to start getting to get patients in and you've got to start running that business. Now do you ever receptionist just chairside assistant is someone helping you. (DP3)	it cost a lot of money to set up a practice		
112.	that ties up with the amount of hygienists in private practice they aren't many. **They aren't many... I mean, at last count, they maybe I think about 60 or 70 registered, but those that actually are. I think it was less than 10** if I'm not mistaken**.** Maybe the numbers are different now but the last time I, I was made aware of the numbers it wasn't something significant, which makes sense because the investment is too high. Yeah, the risk is too high (DP1)	They aren't many... I mean, at last count, they maybe I think about 60 or 70 registered, but those that actually are. I think it was less than 10		
113.	the dentist that I was working for before I opened up practice was actually very upset with me actually... **he said to me, you know, it's not gonna work out. And I said no, I don't know it's not gonna work. I was actually really nervous at the time and I thought it was a harsh thing to say**, but I think he said that out of anger. He didn't want me to leave... (OHP6)	he said to me, you know, it's not gonna work out. And I said no, I don't know it's not gonna work. I was actually really nervous at the time and I thought it was a harsh thing to say		
114.	**it takes time for them to build a practice**, you know, to get a proper clientele. And you probably need somebody that's quite established, you know, because if I just see the financial side of it. It's difficult you know for a dentist even, You know I'm 20 years in the business now to get financing for stuff I can't imagine, even a new dentist, at least he's got a lot of collateral, you know, to get, you know, get an office, and to get a chair, you know if you go and add up those things I think it's quite expensive (DP6)	it takes time for them to build a practice		
115.	so, I think she would have a good opportunity to open her own practice. But **you need financial backing in some way** (DP6)	you need financial backing in some way		
116.	I think I still wanna go there (Independent practice) I'm not sure of **it's just to much to my stress and too much competition**. (DTP2)	it's just to much to my stress and too much competition		

117.	*for therapists, if you're **just working on your own. I think it will be a bit difficult** for them (DTP2)*	*just working on your own. I think it will be a bit difficult*		
118.	*as an oral hygienist, to be able to run your own practice. **I'm not convinced that you are able to cover all your costs and still make a good living** like you would if you worked for a good commission. So, unless the situation is very favourable where you pay minimal rent, for instance. Where you still work in a dental practice and just contribute to expenses. I think it will be okay. But to take your patient base and say, "I'm opening an office in an office park or a shopping centre and I have to pay salaries and water, electricity and rent and all sorts." I don't think you'll be able to do it. (OHP1)*	*I'm not convinced that you are able to cover all your costs and still make a good living*		
119.	*I've only been in practice since August last year so my numbers are climbing by about five patients a month, every month for the past year now. So, **I started out with four or five a month... then ten a month... then 15 a month... I'm now seeing about 25 a month**. (OHP8)*	*I started out with four or five a month... then ten a month... then 15 a month... I'm now seeing about 25 a month*		
120.	*not one article, not one study, **not one thing about how difficult it is for hygienists** that now have been granted independent practice.* (OHP8)	*not one thing about how difficult it is for hygienists that now have been granted independent practice*		
121.	*I think a big part of me was not believing in myself, and that because **of my age that I would not get the backing of a financial institution to assist me with setting up an IPP**… (OHP3)*	*of my age that I would not get the backing of a financial institution to assist me with setting up an IPP*		
122.	*Your **overheads are the same, practically. So that I feel there I've gotta shop around** because of the prices (OHP4)*	*overheads are the same, practically. So that I feel there I've gotta shop around*		
123.	*in conjunction **with overhead costs of having an oral hygiene practice on your own**. Like having a receptionist and all the costs of running a place.(OHP5)*	*with overhead costs of having an oral hygiene practice on your own*		
124.	*working for somebody else...What I liked about that is that **you didn't have any pressure of running a business**. And having to meet your end targets, basically. (DTP3)*	*you didn't have any pressure of running a business*		
125.	*if I don't make money this month, or am I going to cover the rent, how am I going to cover the telephone how I'm going to cover the utilities. **My husband and his partner are so kind to let me live here rent-free.** (OHP8)*	*My husband and his partner are so kind to let me live here rent-free.*		
126.	*we had a good relationship and a good, you know, a good business relationship feeding off each other. So, **it was basically just, you know, for financial gain**. (OHP1)*	*it was basically just, you know, for financial gain*		
127.	*I was in a relationship with the dentist that I'm working currently for. So, therefore it was okay for me to take over my practice and take control of that and run that independently because of the nature of our relationship. So, he was sort of kind enough to say, "Well, you know what? If you're going **to look after yourself and you're going to create your own income, it's basically less responsibility on me**. (OHP1)*	*look after yourself and you're going to create your own income, it's basically less responsibility on me*		

55 + 46 + 26 = 127

Total 127 = 48 Hygienists / 61 dentists / 18 therapists

Table 7.4 Data structure for Remuneration for work

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	
1.	*It doesn't make sense the skill is the same. We take an X-ray, and we get 100 bucks for an X-ray. If a specialist takes the same X-ray, they get paid, 150 bucks why? it cost me the same to buy my equipment... So, if my cost, if my input costs are the same. Why, why, why, why can they charge more and we can't... Right. So, I'm sure that the hygienists are going to feel the same way. The therapists are going to feel it cost us the same to buy composite... Why can a dentist charge more... I don't know, I don't know if I'm going to say. It's not fair. They must be charged this, and* ***they must be able to charge the same as us the same as that's not fair, we must be able to charge the same as specialists.*** *(DP1)*	*they must be able to charge the same as us the same as that's not fair, we must be able to charge the same as specialists.*	**Lesser skill you have, the less you can charge** **31quotes** **Contesting differences in remuneration** **No contestations – 10** **Contestations – 21**	**Aggregate Dimension Remuneration for work**
2.	*if I say it's fair because of the level of skill in a specialist will say yeah, it's fair, but I don't think it's fair that I get paid less for an x-ray and specialist do right my costs are the same... nothing, nothing on an X-ray they can diagnose that I can't right. We all know how to diagnose, right so why. So, so, I honestly don't know how this whole fee structure came about. My guess is that* ***the lesser skill you have, the less you can charge and that's the way they keep costs under control. The more you upskill yourself, the more you're entitled to charge for procedures.*** *(DP1)*	*the lesser skill you have, the less you can charge and that's the way they keep costs under control. The more you upskill yourself, the more you're entitled to charge for procedures.*		
3.	*a therapist charges 20% less because that's their fees... from a patient point of view* ***it's better to go to a therapist because they're saving 20%. Right. So that's also a problem for us, because now it's kind of becoming a price war type of a thing****. But I'm not an intentional price for our side but that's how the fee structures are structured. (DP1)*	*it's better to go to a therapist because they're saving 20%. Right. So that's also a problem for us, because now it's kind of becoming a price war type of a thing*		
4.	*just take scale and polish right appropriate procedure. my hygienist charges the same fee that I charge. Okay, she. And if she does root planing or if she does sedation or she does local anaesthetic, the fees that she charged have same fees that I charge. And so, that's fine.* ***She specializes in that procedure, and she says good as anybody and then procedure and there's no reason why she should charge less*** *that's what I think. (DP4)*	*She specializes in that procedure, and she says good as anybody and then procedure and there's no reason why she should charge less*		
5.	*if a* ***hygienist in a medical aid practice does a procedure... are they entitled to less renumeration****. Yes. They can't charge as much as a dentist for the same procedure.... (DP4)*	*hygienist in a medical aid practice does a procedure... are they entitled to less renumeration*		
6.	***it wouldn't be fair to pay them less. if they are on their own*** *if so if what you're actually telling me is if they have their own practice number, they will be remunerated less for the same code. (DP6)*	*it wouldn't be fair to pay them less. if they are on their own*		
7.	*I think* ***payment should be the same LA, for a hygienist*** *(DTL1)*	*payment should be the same LA, for a hygienist*		

8.	they equally qualified. **I certainly don't believe that a dentist should get paid more for a class one composite than a dental therapists**, because they using the same material. The same infection control applies. why should it differ. (DTL2)	I certainly don't believe that a dentist should get paid more for a class one composite than a dental therapists		
9.	**there is a huge financial influence, in why they don't want hygienists to do certain procedures. Because hygienists would do it for less**, and not necessarily giving substandard treatment. (DL1)	there is a huge financial influence, in why they don't want hygienists to do certain procedures. Because hygienists would do it for less		
10.	it's wrong, it should be the other way around. **OH, should be paid more because it's their core work**, they know it better than us. (DL3)	OH, should be paid more because it's their core work		
11.	with the scope change, they would need to know more than the previous ones, so when it comes to the tariffs… **I think they were probably thinking that a dentist knows more than (an OH and DT), and that is why they equate it that way…** but right now I don't see any reason why (DL3)	they were probably thinking that a dentist knows more than (an OH and DT), and that is why they equate it that way		
12.	apparently **some medical aids would pay a different rate. Reimburse the hygienists differently than the dentists. So, although it is exactly the same code** that gets charged, if the dentist would submit the account, if you charged under the dentist's name the patient gets reimbursed more (OHP1)	some medical aids would pay a different rate. Reimburse the hygienists differently than the dentists. So, although it is exactly the same code		
13.	I've also seen that **some medical aids pay more for a dentist that's cleaning than a hygienist** (OHP4)	some medical aids pay more for a dentist that's cleaning than a hygienist		
14.	I feel that **they're only looking after the dentists. Fair enough, but, I feel OHASA must go and sit at the same table with SADA and say "We need to make equality here."** Because the hygienists in private practice are not gonna stop. It's just gonna be more and more girls that are gonna go into private practice (OHP4)	they're only looking after the dentists. Fair enough, but, I feel OHASA must go and sit at the same table with SADA and say "We need to make equality here."		
15.	Whether I'm working here or **whether I'm working at a dental practice, I'm doing the exact same thing. And it's been carried out by me. So why is the rate different?** Based on a practice number, you know, the claim is sent through on the dentist practice number... (OHP6)	whether I'm working at a dental practice, I'm doing the exact same thing. And it's been carried out by me. So why is the rate different?		
16.	they've all gone blue fighting for this and putting all the facts there. But the medical aids refused to budge in terms of, I mean, like I said, you, if a dentist is standing next to a patient and I'm there and we both are using the xylotox exactly the same to inject the same technique for the patient. Achieve anaesthesia. But when that account is submitted, I suppose, maybe because we are therapists and hygienist do a three-year degree. I may stand to be corrected. But I still can't understand you know personally my opinion, **I still can't understand how come that I am giving the same you know block as a dentist, and we're not getting paid and we, and obviously we've been taught the very almost the very same thing**. (DTP1)	I still can't understand how come that I am giving the same you know block as a dentist, and we're not getting paid and we, and obviously we've been taught the very almost the very same thing		
17.	I know that **therapists' fees were a bit lower than dentists fees for the same procedure. And I think it's completely unfair**. We use the same materials; we have the same training in terms of that particular procedure. And the fee should be the same. (DTP3)	therapists' fees were a bit lower than dentists fees for the same procedure. And I think it's completely unfair		
18.	if a dentist sees a patient and does a consultation, a cleaning and maybe a filling for what purpose would probably have to see two patients to make up that same amount of money and that sort of puts us at a disadvantage, you know we don't have, you're not going to be able to have that time, enough time to ensure that our work is done properly. Not that we compromise on work, but it's just too compromising situation. If **we try and make the same amount as the dentist would with the same patient for the same procedures, we have to work twice as hard**. (DTP3)	we try and make the same amount as the dentist would with the same patient for the same procedures, we have to work twice as hard		
19.	the amount of work that's being done is the same. And **it's only possibly going to force them to use cheaper materials, and maybe see more patients**. In this way, maybe not. Because a decrease in the quality of the work eventually... (DP6)	it's only possibly going to force them to use cheaper materials, and maybe see more patients		

20.	The medical aid **rates for me is far lower than for a dentist. So, you have your benefits won't be expired as quickly**. (OHP8)	rates for me is far lower than for a dentist. So, you have your benefits won't be expire		
21.	as far as the actual quality of the scale and polish goes, I don't think that us is inferior. In fact, in some cases, **our hand is more trained in it, because we aren't doing it more regularly and this is our core thing**. So, we're getting paid R80 or R200 less for 8159 doesn't make sense, (OHP8)	our hand is more trained in it, because we aren't doing it more regularly and this is our core thing		
22.	**They pay us a small portion of what they pay dentists under their practice numbers**. So, for example if you do a consultation, normally it ranges, a plus minus approximately, dentists get paid like R230 for a consultation which is a 8101. And oral hygienists is getting like R150 R160 from the medical aid for that code. (OHP2)	They pay us a small portion of what they pay dentists under their practice numbers		
23.	I can't see how a dentist does a scaling... in 10minutes and is been paid R400 and when an oral hygienist spends 45minutes and she's being paid say R300. So, because there is a discrepancy... And that's totally wrong. So, I think that, like the **preventive procedures that an oral hygienist is trained to do, actually the fees should be more... or at least the same as the dentist**. (OHL1)	preventive procedures that an oral hygienist is trained to do, actually the fees should be more... or at least the same as the dentist		
24.	the **dentist gets paid more versus everybody else who is also working on the teeth**. (OHL4)	dentist gets paid more versus everybody else who is also working on the teeth		
25.	the **training and how competent a clinician is, then what should be happening is that a OH should get paid more for their procedures and the dentist should get paid more for the procedures they focus on** if there is a distinction, or everybody gets paid the same. So, if dentists are getting paid R200 for a scaling, then the OH must be paid R200 for a scaling if anything. But if there are going be distinctions then the expert in the procedure gets paid more. (OHL4)	training and how competent a clinician is, then what should be happening is that a OH should get paid more for their procedures and the dentist should get paid more for the procedures they focus on		
26.	in our medical aid boards **the dentists are on those boards generally and so their loyalties will go or what they know will obviously apply to everyone else** which is a problem. Which filters down to just remuneration never mind the procedure (OHL4)	dentists are on those boards generally and so their loyalties will go or what they know will obviously apply to everyone else		
27.	that's historical, right. And it's sad. Because I think it's the value of the service rather than who did that service. **If it's a good and it's well done, whether it's done by a hygienist or dentist the remuneration for it should be the same**. (PBD1)	If it's a good and it's well done, whether it's done by a hygienist or dentist the remuneration for it should be the same		
28.	dental therapists are there for the government, to alleviate pressure on the government **to supply dental services at an at a lower rate to the general population**. (DP3)	to supply dental services at an at a lower rate to the general population		
29.	What's gone into that is the years of training and the infrastructure and the setting up of the practice cost and the overhead cost. And there was this thing about a relative value, a unit is to this is amount to so much for a dentist and so much for a hygienist/therapist. And I think **it's based on weak principles so I don't, I think remuneration should be based on the quality of the work and it doesn't matter who does it**. (PBD1)	it's based on weak principles so I don't, I think remuneration should be based on the quality of the work and it doesn't matter who does it		
30.	they felt that, **because the dentist studied for five years. And the therapist studied for three years and hygienist was doing a two-year diploma** (PBD3)	because the dentist studied for five years. And the therapist studied for three years and hygienist was doing a two-year diploma		
31.	the tariffs are different and, obviously, I don't support that and I feel that it is wrong and, and **it is unfair because if you look at the time, the effort, the products that you use the equipment that you use it's all the same... And it's definitely I would say unjust** because these tariffs need to be equalised. (PBD3)	it is unfair because if you look at the time, the effort, the products that you use the equipment that you use it's all the same... And it's definitely I would say unjust		
32.	**medical aids are not paying us** they short paying us (DTP1)	medical aids are not paying us		

33.	*gone are the days when you had like a medical aid like Bonitas would say like, you can if fillings are unlimited, meaning if you have 32 teeth or type surfaces, you can restore every surface on every tooth. But **now it's like a benefit and unlimited benefit with a limitation**. (DTP1)*	*now it's like a benefit and unlimited benefit with a limitation*	**Medical aids quite often don't pay** **22quotes** **Contesting not getting paid for services rendered** **No contestations – 0** **Contestations – 22**	
34.	*the concerns, especially **with hygienists, is that the medical aids, don't pay**. You know there's been an issue with... I think it was initially when they first started off, maybe medical aids were not aware of the new rules and things like that but a lot of them complained of medical aids not recognizing the practice numbers and not paying the codes and things like that. (DTP3)*	*with hygienists, is that the medical aids, don't pay*		
35.	*the biggest problem in private practice when it comes to independent practice, what I've realised, is that **not a lot of the medical aids are affiliated to our oral hygiene codes**. (OHP2)*	*not a lot of the medical aids are affiliated to our oral hygiene codes*		
36.	*we have lot's of issues with the medical aids when it comes to oral hygiene codes. **Half of them they don't cover. They don't cover 8151 which is oral hygiene instructions. They don't cover for fluoride**. (OHP2)*	*Half of them they don't cover. They don't cover 8151 which is oral hygiene instructions. They don't cover for fluoride*		
37.	*to go through the codes, like 8154, **not all medical aids pay for an oral hygienist screening, consult**, ja. And local anaesthetic, I mean, we should be able to charge for local anaesthetic. I mean, I've gotta do anaesthetic sometimes with patients. (OHP4)*	*not all medical aids pay for an oral hygienist screening, consult*		
38.	*I can see their Bankmed traditional and comprehensive but the basic plan they don't let a hygienist, **they don't pay a hygienist, but they'll pay a dentist.** So, to me, there's inequality and that I feel must be corrected. (OHP4)*	*they don't pay a hygienist, but they'll pay a dentist.*		
39.	*I think we should be able to charge for an 8122 which is a cytological smear. We don't get, we can't charge for that, it's out of our scope. I don't know if it's not out of our scope, but they won't, the medical aids won't pay it. (OHP4)*	*we should be able to charge for an 8122 which is a cytological smear. We don't get, we can't charge for that, it's out of our scope*		
40.	*initially there was a lot of hiccups with regards to coding and our tariff rates and things like that... as opposed to the dentist's rates. A lot of **the medical aids were initially saying that they haven't received the ICD10 of codes from SADA or HPCSA, which wasn't always true**. (OHP6)*	*the medical aids were initially saying that they haven't received the ICD10 of codes from SADA or HPCSA, which wasn't always true*		
41.	*a lot of the certain **schemes that don't acknowledge hygienists** by the way (OHP6)*	*schemes that don't acknowledge hygienists*		
42.	*I am less inclined to do fissure restorations yeah I've done it before... but for me, the **medical aids quite often don't pay... so for me it's the risk versus what you get paid... just give it to the dentist**. It just doesn't make sense to take on that risk or that time, or the materials, to do it. (OHP8)*	*medical aids quite often don't pay... so for me it's the risk versus what you get paid... just give it to the dentist*		
43.	*even the oral hygiene instructions, the dentist can charge more… or worse that the hygienist when they code this in the medical aid… **the medical aid rejects these things… that doesn't make us happy**… (OHL3)*	*the medical aid rejects these things… that doesn't make us happy*		
44.	*OH are opening their own practices but they are struggling to get paid for the things that they do… like I said **as an OH you want to educate, you want to prevent disease, but medical aids won't pay you for OHE, so is it worth doing**? But then how does that translate into who you are as professional and what you've been trained to do? (OHL4)*	*as an OH you want to educate, you want to prevent disease, but medical aids won't pay you for OHE, so is it worth doing*		
45.	*in terms of cost, **our rates are lower. So, anybody on the savings, medical aid is going to run**, we begin to pay a lower rate. (OHP6)*	*our rates are lower. So, anybody on the savings, medical aid is going to run*		
46.	***medical aids are very prescriptive and very limited in how they pay** medical or dental professionals. You not going to get paid for a fluoride application, (OHL4)*	*medical aids are very prescriptive and very limited in how they pay*		
47.	*but **not all patients are having to see dentists, so how much are you saving on patients having regular access? and at a lower rate**, because you only have to pay me far less for a Scale and Polish than a dentist. (OHP8)*	*not all patients are having to see dentists, so how much are you saving on patients having regular access? and at a lower rate*		

48.	doesn't make sound financial sense to the medical aids. Why is Bankmed and Gems and Discovery and others all saying we loosing out... we contracting hygienists... You know what I'm saying. The argument that it makes sound financial sense to them doesn't hold water. So **they have no actual reason they're not coming with a valid reason... other than you going to have to refer to the dentist**... (OHP8)	they have no actual reason they're not coming with a valid reason... other than you going to have to refer to the dentist		
49.	they just say, "**Because you're a hygienist, we're not paying this, we're not paying that." And they really undermine hygienists and it's illegal**. I mean if you're legally practising and everything's in place, they can't, if that person's medical aid covers that procedure, they have to pay it. But they're the big guys and it's very difficult to take them on and change that, apparently that's a big struggle. (OHP5)	Because you're a hygienist, we're not paying this, we're not paying that." And they really undermine hygienists and it's illegal		
50.	a load of **medical aids doesn't want to contract oral hygienists and they can't give me a reason why**, none of them wants to put it in writing, what their reasoning is (OHP8)	medical aids doesn't want to contract oral hygienists and they can't give me a reason why		
51.	it is flawed, **but I can't take them on... I'm a little guy...** my husband says you just focused on the medical aids that do accept it like Bestmed and Discovery, anything else and build your practice, because it will take it will take too much resources, time and money to take on the Board of Healthcare Funders, you ask them, they are they not interested in helping... and then some of them like say well they medical insurances they don't fall under the rules and medical aid rules. (OHP8)	but I can't take them on... I'm a little guy...		
52.	I **would have been twice as busy I would have been the way I needed to be because half the patients... slightly more than half... I have to say sorry I can't help you** I don't accept or Ingwe doesn't want to contract me, Healthforme doesn't, Impact doesn't, Carecost doesn't, and Westmart doesn't, Dennis doesn't cover the scale and polish. (OHP8)	would have been twice as busy I would have been the way I needed to be because half the patients... slightly more than half... I have to say sorry I can't help you		
53.	MMI holdings is one of them, I used to be contracted in with them and **last year all of a sudden, they decided that they're not going to service hygienists anymore and that their clients need to see dentists only.** So yeah ... The reason they say they feel that the patient or the client can get, well, sort of a whole package from a dentist, where the hygienists can't offer for them that. (OHP6)	last year all of a sudden, they decided that they're not going to service hygienists anymore and that their clients need to see dentists only		
54.	**tooth whitening, they can do it. So that's a huge money-spinner and a huge income producer** for hygienists and I think it would be great. I mean it would do me a disservice, but I mean, for the profession that would be great. (DP2)	tooth whitening, they can do it. So that's a huge money-spinner and a huge income producer	**Working for a dentist and making him money it's okay** **31quotes** **Contesting the control of income** **No contestations – 11** **Contestations – 20**	
55.	I think, **hygienists would be viewed as competition** I think that... listen we are going through a very tough time now (DP3)	hygienists would be viewed as competition		
56.	**it's a kind of financial fear**, and it's a kind of entire sense of entitlement as well. (DP4)	it's a kind of financial fear		
57.	I don't deal with medical aids at all. In fact, my staff have got clear instructions it's a medical aid phones, they pick up the phone. Say Hi this is Dr. M.....'s practice and speaking Hi, this is so and so from discovery medical aid. Put the phone down. I'm not interested. I want nothing to do with it. The term scale of benefits doesn't exist to me**, I don't care about scale of benefits. It's got nothing to do with me. I charge what I charge and my rates are high**. (DP3)	I don't care about scale of benefits. It's got nothing to do with me. I charge what I charge and my rates are high		
58.	It's purely about "**how much can I make out of this patient**?" and quick fixes and fill and off you go and root canals (OHP4)	how much can I make out of this patient		
59.	dentists **when I qualified rated, I think in the top 10 earners of the country. Today the dentist rate somewhere in 78** places, something like that (DP3)	when I qualified rated, I think in the top 10 earners of the country. Today the dentist rate somewhere in 78		
60.	you know, **she doesn't have to worry about overheads. My oral hygienist gets a fixed salary every month, and then I pay her commission**, based on if she runs over a turnover off of a certain amount. (DP6)	she doesn't have to worry about overheads. My oral hygienist gets a fixed salary every month, and then I pay her commission		
61.	I know lots of dentists... I think this there's quite a few of them that are very financially driven if they practice. And **if something is maybe not going to make them money, then maybe no** (DP6)	if something is maybe not going to make them money, then maybe no		

62.	as you are **working for a dentist and making him money it's okay. But when you are making money as a therapist or hygienists for yourself, it becomes a problem** so it just boils down to economics (DTL2)	working for a dentist and making him money it's okay. But when you are making money as a therapist or hygienists for yourself, it becomes a problem		
63.	**you make more money, and we see it in private** practice (DTL2)	you make more money, and we see it in private		
64.	economy is a problem, **the economy taking away money from a certain sector, like dentists** (DTL2)	the economy taking away money from a certain sector, like dentists		
65.	unfortunately the system in South Africa is **fee for service. So, that tends to take people into a largely curative way because that's what pays the bill**. And I think that is counterproductive. (PBD1)	fee for service. So, that tends to take people into a largely curative way because that's what pays the bill		
66.	well, it's his practice. So, the appointments and everything come through him. **We send patients to each other depending on what the patient's need. And he pays me a salary at the end of the month**. (DTP3)	We send patients to each other depending on what the patient's need. And he pays me a salary at the end of the month		
67.	I work on a commission basis. So, yeah**, I get a percentage of all the patients I see**. (DTP3)	I get a percentage of all the patients I see		
68.	we have this working relationship where I'm working independently. **Earning my own, responsible for my own turnover versus him paying me commission. And they were, they said, you know, "You're crazy" Because how can you do that? "It's not viable for you."** So, if anything may be more a negative connotation to the fact that here's a hygienist that is, you know, taking a full turnover, or her full turnover rather than working on commission. (OHP1)	Earning my own, responsible for my own turnover versus him paying me commission. And they were, they said, you know, "You're crazy" Because how can you do that? "It's not viable for you."		
69.	we're very, very, very fortunate that we charge for private fees. So, I'm happy with that. I must be honest. I wouldn't love to work in a medical aid type of practice. What we call **medical aid rates. I believe that is at least half, if not, well, ja, about half less than what we charge.** (OHP1)	medical aid rates. I believe that is at least half, if not, well, ja, about half less than what we charge.		
70.	I'm completely underpaid. The dentists here, **they're a bit scared to give me a commission base. Because they know if they have to give me a commission base, I see 80% of their patients so, I'll probably be walking out with quite a lot of money**. (OHP2)	they're a bit scared to give me a commission base. Because they know if they have to give me a commission base, I see 80% of their patients so, I'll probably be walking out with quite a lot of money		
71.	the **basic is completely putrid actually, compared to the type of work that I do** (OHP2)	basic is completely putrid actually, compared to the type of work that I do		
72.	if you ask me about my present bosses… would be happy with IPP, I don't think so… they haven't said this to me… but knowing that **they would want to be profitable from a financial point of view** (OHP3)	they would want to be profitable from a financial point of view		
73.	I can't really compare with other hygienists who work under commission… my children who work in the financial world will often say to me that **"you really underpaid" I don't really see it that way… I think that my salary is fair** (OHP3)	"you really underpaid" I don't really see it that way… I think that my salary is fair		
74.	things are getting tighter and **people don't have extra cash to pay upfront and then claim back from the medical aid**. So, it was easier for me to offer that, that I can submit to the medical aid and people just grabbed it because it worked and it suited them, and it suited me, because at least I was earning something than nothing, than trying to keep a practice running on cash, pay me and you claim back (OHP4)	people don't have extra cash to pay upfront and then claim back from the medical aid		
75.	if you **offer the service of submitting, they're there**, because they pay so much in medical aid. (OHP4)	offer the service of submitting, they're there		
76.	**I'm earning what I'm worth. I don't have to share** the money. (OHP4)	I'm earning what I'm worth. I don't have to share		

77.	*I've come from a salary earn to a beginning of "Owe you 20% commission depending on how much you bring in, then you can get a little bit extra." So,* ***I've gone from earning R12 000 up to earning R30 000 and now earning up to R100 000.*** *It's like, I mean, that's how you would earn more money, getting your own practice. (OHP4)*	*I've gone from earning R12 000 up to earning R30 000 and now earning up to R100 000.*		
78.	*So, they (dentists) would obviously get a cut of whichever cleanings they did. But I wouldn't, I just get my salary at the end of the month. So, I think they feel, "Well,* ***it's not going to influence her salary so we may as well do it ourselves and get the money****." (OHP5)*	*it's not going to influence her salary so we may as well do it ourselves and get the money*		
79.	*they're a business* ***and if they can somehow find a way not to pay that's money they save.*** *So, it's illegal what they're doing. I think partly out of ignorance and partly out of trying to be skelm and save money. (OHP5)*	*if they can somehow find a way not to pay that's money they save.*		
80.	*Dr .... wants me because he doesn't want these patients to come over to me, obviously. So, the* ***patients who choose to see me at his practice, I see on those two days. I don't think he'd be happy if these patients are coming to me in my own practice****, you know, and then I don't know I feel about that as well. I don't know if he feels as though I'm taking his patients away from him... or what it is so to keep the peace I agreed to do two days at he's place. (OHP6)*	*patients who choose to see me at his practice, I see on those two days. I don't think he'd be happy if these patients are coming to me in my own practice*		
81.	*Due to do the economic situation, perhaps, because* ***we even find the dentist prefer to do their own scaling's****, they don't even refer scalings to the hygienist. (OHL1)*	*we even find the dentist prefer to do their own scaling's*		
82.	*I cannot understand why, and* ***who gave SADA the right to be the gate-keepers of the coding****. (PBD4)*	*who gave SADA the right to be the gate-keepers of the coding*		
83.	*it's just not a local anaesthetic is absolutely every tariff like 8101, even as far as 8109 which is infection control, we would buy the same gloves with the same gloves same mask. But yet,* ***a therapist gets paid much less than that of the dentist.*** *So, South African dental Therapy Association has been liaising with HPCSA with the medical aid Board of Health funders, all the Medical Council medical aid of the Medical Council. Still we haven't got anything concrete or anything to tell us listen, go ahead. (DTP1)*	*a therapist gets paid much less than that of the dentist*		
84.	*if you have a hygienist at your practices, who has* ***10 patients that she can see throughout the day... that doesn't take up your time****, (OHP6)*	*10 patients that she can see throughout the day... that doesn't take up your time*	**Hygienist is the cash cow of the practice** **11quotes** **Contesting being passive income** **No contestations – 3** **Contestations – 8**	
85.	*Perhaps* ***they see it as a money-making thing, you know they can make easy money*** *(OHL1)*	*they see it as a money-making thing, you know they can make easy money*		
86.	***dentists make a lot of money of scale and polishes....*** *cos the material costs are so low... it doesn't, it really doesn't cost them anything to do chair the scale and polish except their time and expertise, basically. (OHP6)*	*dentists make a lot of money of scale and polishes....*		
87.	*My hygienist came from a practice like that... were you know, it was difficult and were you know,* ***she almost felt like she was taken advantage of, you know, in a certain sense since, you know, creating quite a lot, large number of income, but not benefiting*** *in a personal way so if you were registered her own practice, you know, she would have made lots more money (DP6)*	*she almost felt like she was taken advantage of, you know, in a certain sense since, you know, creating quite a lot, large number of income, but not benefiting*		
88.	***if they were to lose out on that, I think that in itself is the issue****...the reason why they wouldn't want us to open up independently. (OHP6)*	*if they were to lose out on that, I think that in itself is the issue*		
89.	***dentists are welcoming the extra scope and allowing it, some of the reasons is money*** *some of the reasons are patients that are in those practices, if there was a good team, I would think that the dentist would come in to say confidently in the OH doing the work (OHL3)*	*dentists are welcoming the extra scope and allowing it, some of the reasons is money*		
90.	*it's about money, it's financial… I had one of the… DPAs (Dental Professional association) President sit back like this saying "****my OH is the cash cow of the practice… she makes enough money to pay my therapist, my hygienist, my assistant and my receptionist****… and I still have spare change… it is financial… (PBD2)*	*my OH is the cash cow of the practice… she makes enough money to pay my therapist, my hygienist, my assistant and my receptionist*		
91.	*I'm still very young and I feel I don't have complete experience. I don't know everything as yet, and* ***I feel I still have a lot to learn. So, I'd rather not fight about a salary and keep the peace*** *in the practice while I'm learning the most that I can. (OHP2)*	*I feel I still have a lot to learn. So, I'd rather not fight about a salary and keep the peace*		
92.	***if the dentist is not happy with what the OH want to earn (is asking for)… then he says… if you don't like it (the salary) leave****… this doesn't foster a good relationship. (PBD2)*	*if the dentist is not happy with what the OH want to earn (is asking for)… then he*		

		says… if you don't like it (the salary) leave		
93.	*they are fully aware of the salary issues* ***and they do know that I feel very unappreciated. But they try to keep me happy other ways****. You get what I mean? Like giving me off when I need to get off or giving me time during the day to do whatever I need to do (OHP2)*	*they do know that I feel very unappreciated. But they try to keep me happy other ways*		
94.	*we are a passive income for the dentists, you know he has a surgery… she is making money, I only pay her 30% of her turnover… like really… and your labour… (PBD2)*	*we are a passive income for the dentists*		

31 + 22 + 31 + 11 = 94 total quotes

53 Hygienists / 25 dentists / 16 therapists

Chapter 8

Table 8.1 Relations in dental schools

	Observations	**1st order analysis** **1st order concepts**	**2nd order analysis** **2nd order themes**	
1.	*"****therapists are trained on their own****" (DTL1)*	*therapists are trained on their own*	**8.1.1** **They were never integrated with us** **23quotes** **Contestations – 19**	
2.	***They were never integrated with us at varsity****, so they aren't able to know exactly what the difference in scope is. (OHP2)*	*They were never integrated with us at varsity*		
3.	*the bridging of interprofessional training… yes absolutely… that's how they see themselves, so the challenge is that the* ***dental school has to develop the concept of team working into interprofessional education****. and of course, that is a weakness in this school…(DL2)*	*dental school has to develop the concept of team working into interprofessional education*		
4.	*I'm not sure if there is a lot of complementarity out there, because of this interprofessional education concept… I mean I've been here since 2017 and I've been trying to build the momentum of innovation in that regard, because even the very nature of dentistry in the* ***dental school is compartmentalise****d… dept. of X, dept. of Y, dept. of Z…(DL2)*	*the dental school is compartmentalised*		
5.	*I also think that* ***dentists and oral hygienists training should be integrated early on*** *(OHP3)*	*dentists and oral hygienists training should be integrated early on*		

6.	*we must be able to, dentists must able to understand the oral hygienists better, and the oral hygienists must understand the dentists better at a university level.(OHP4)*	*dentists must able to understand the oral hygienists better, and the oral hygienists must understand the dentists better at a university*	**No contestations - 4**	
7.	*one problem that **we do have at varsity is that we're not integrated quite a lot**. So, I think that's where that misconception starts about our scope in the industry when it comes to dentists and I think that's why they misuse and abuse us like that. Because they're not really aware of what we are able to do. (OHP2)*	*we do have at varsity is that we're not integrated quite a lot*		
8.	*I've said in my engagement with other colleagues, that it starts in academia, **these three programmes DT / OH and DENT, we see each other as different entities, we are teaching them in silo**s, yet we expect them out there to be in a team. Definitely out there I'm still seeing them working in silos, if we were to break it we have to start with teaching these three programmes are trained together, engaging with each other, but there is still that hierarchy, there are still some dentists not acknowledging, they still questioning when a patient comes in she would say that she referred the patient to a dentist for a temp (restoration) and the dentist was querying why would they seeing that this is not what they (OH) can do. There is still that superior hierarchy amongst them. (OHL3)*	*these three programmes DT / OH and DENT, we see each other as different entities, we are teaching them in silos, yet we expect them out there to be in a team*		
9.	*it's still there, it's very much there… I hear comments from dentists, dentistry students…**we can do much more than the hygienists can do… they don't realise that you have specific roles to play, so until we have more integration** (HPCSA1)*	*we can do much more than the hygienists can do… they don't realise that you have specific roles to play, so until we have more integration*		
10.	*of **our very first lectures with dentistry students when they enter here, we put the scopes of practice up… these are who your team members** are, this is what they can do and this is how you can work together" (HPCSA1)*	*our very first lectures with dentistry students when they enter here, we put the scopes of practice up… these are who your team members are*		
11.	***if we had a little bit more of exposure and a little bit of integration with the dentists**, I think the industry might change a little bit. And our profession might be a little bit more respected in the industry (OHP2)*	*if we had a little bit more of exposure and a little bit of integration with the dentists, I think the industry might change a little bit*		
12.	***dentistry and OH, they are completely worlds apart**… no-one is trying to steal each other's turf. You supposed to work in supportive roles, and if you can integrate teaching like that, it will go into practice like that…. (HPCSA!)*	*dentistry and OH, they are completely worlds apart… no-one is trying to steal each other's turf. You supposed*		

		to work in supportive roles, and if you can integrate teaching		
13.	*we have had research coming out of the faculty that talks about the **lack of integration and things like that**… we know the kinds of challenges. (HPCSA1)*	*lack of integration and things like that… we know the kinds of challenges*		
14.	*they have got a lot of integration at UNIV2, because most of the 1st year is a combined class**… I'm unaware of other institutions and the level of integration of OH, DT and DENT…** at our faculty we try to integrate but I wouldn't say that we do our best at it…(HPCSA1)*	*I'm unaware of other institutions and the level of integration of OH, DT and DENT… at our faculty we try to integrate but I wouldn't say that we do our best*		
15.	*in the curriculum we are trying to introduce what is called interprofessional training / education. and one is sensitising the lecturers that we should **simulate a working environment that will encourage complementarity and referring to working as a team**." Because we have that opportunity in this dental school… (DL2)*	*simulate a working environment that will encourage complementarity and referring to working as a team*		
16.	*you still see **at the end of the year the subservience of OH… you see it coming out in the socialisation of DT and OH students,** (HPCSA1)*	*at the end of the year the subservience of OH… you see it coming out in the socialisation of DT and OH students*		
17.	*As far as the training goes, unfortunately I think this is individual driven. And these are teams. **We expect them to operate as teams after training. But our training is still happening in silos in most instances** that I'm aware of (PBD1)*	*We expect them to operate as teams after training. But our training is still happening in silos in most instances*		
18.	***constraints for interdisciplinary training... Is it egos? Is it territorial? Afraid that someone may dominate** the area or so? (PBD1)*	*constraints for interdisciplinary training... Is it egos? Is it territorial? Afraid that someone may dominate*		
19.	*At our own institution the **oral hygiene program is almost totally independent of the dental program.** And I don't think that's healthy, especially if you expect the two people to work together afterwards, you know? (PBD1)*	*the oral hygiene program is almost totally independent of the dental program. And I don't think that's healthy, especially if you expect the two people to work together afterwards*		

20.	*Whenever there's this feeling of dominance that, even if it's a perception that one would dominate the other. There's a tendency to then almost drive into a larger type of thing and just* ***concentrate on the silo and say, "We'll do it all ourselves." Or, "We'll buy in help, but we'll control that help." Rather than saying, "Let's do it an open way." and say, "How can we best educate both?"*** *in our case both professions. But in a way that there's respect for each other and there's an interrelatedness. (PBD1)*	*concentrate on the silo and say, "We'll do it all ourselves." Or, "We'll buy in help, but we'll control that help." Rather than saying, "Let's do it an open way." and say, "How can we best educate both?"*		
21.	*Students also get what they call specific problem patients, SPS pts and CPC pts. Specific problem scenario is where they treat the patients' main complaint as an emergency procedure, the patient is not in pain but they want a specific thing sorted out. From that pool of patients when they go to get their teeth cleaned, the OH do the PRR, I that case the patient liaises with the OH and they do the preventive dentistry and once they are completed they come back to the dental student. So* ***, there is a chain of command, and it encourages communication between dentists and OH.*** *So that part of the training here is excellent because already they are communicating with the dentists and retaining records and comparing and discussing (DL4)*	*there is a chain of command, and it encourages communication between dentists and OH.*		
22.	*they train the hygiene students separately and they* ***train the dental students separately****(PBD1)*	*students separately*		
23.	*When the****y were training these were separate entities and they still are in many cases separate. I don't think they see the end product,*** *or they see the final practitioner. (PBD1)*	*they were training these were separate entities and they still are in many cases separate. I don't think they see the end product*		
24.	***Dental Therapists would always argue that we don't treat them the same as the dental students****, and when you ask them why… they say "no, the tutors don't spend enough time with us", then when you check the tutors, they say "no, we spend enough time" but there are certain procedures that the BDS students do… which need me as a tutor to spend more chairside time. Sometimes they make a mess of it and then I take over. There is a perception, on the side of the students, a built-in implicit hierarchy that no you don't care for us. And I keep saying to the lecturers this has to be managed, it just mustn't be left like that." (DL2).*	*Dental Therapists would always argue that we don't treat them the same as the dental students,*	**8.1.2 Prioritising students** **15 Quotes** **Contestations – 14** **No contestations - 1**	
25.	*There is* ***a perception, on the side of the students, a build in implicit hierarchy that no you don't care for us****. And I keep saying to the lecturers this has to be managed, it just mustn't be left like that. So, we have a student/staff forum where we discuss with the class captains, and module coordinators, all issues/concerns related to curriculum in the different programs. But when you sit in those meetings you see that indeed there is a hierarchy amongst the students… especially the DT students (DL2)*	*There is a perception, on the side of the students, a build in implicit hierarchy that no you don't care for us.*		
26.	*the DT students don't want to be in the same class as dentistry students… yes that also is there… because we hear students saying it "I* ***don't know why you guys are learning this because you are not going to do this and that when you go out****" and the other reason why was that they wanted to be taught by a DT (DL3).*	*I don't know why you guys are learning this because you are not*		

		going to do this and that when you go out		
27.	***students could complain about the fact that the dentistry students got preference over the therapy and hygiene students*** *for patients in terms of clinicals. I know for a fact that that came up as a huge problem. And that was raised in the universities. (PBD3)*	students could complain about the fact that the dentistry students got preference over the therapy and hygiene students		
28.	*They've been* ***saying for years and years they must train more oral hygienists. But yet, in our institution, two or three years ago, they decided no they're going to take in 20 more denta****l students. (OHL1)*	saying for years and years they must train more oral hygienists. But yet, in our institution, two or three years ago, they decided no they're going to take in 20 more dental students		
29.	*Whether you are doing postgrads or undergrads, DT or OH or DENT, they should have equal attention. And when it comes to legislation* ***don't short-change one programme over the other, you need to treat them equally****. (HPCSA1)*	don't short-change one programme over the other, you need to treat them equally		
30.	***I even know of one institution didn't even have OH applicants, one year they did not even take in anybody… those are some of the concerns, are they going to be shutting down OH****? What is the situation? What did you do to revive it? How did you advertise? It's one of your programmes, you are running that programme, what do you do to market it, what do you do to attract people to come in? there are a lot of things required… it's not just to be left to one or two people, it is a faculty thought process that should go into this… it's a faculty programme at the end of the day. (HPCSA1)*	even know of one institution didn't even have OH applicants, one year they did not even take in anybody… those are some of the concerns, are they going to be shutting down OH?		
31.	*I heard from our new hygienist who qualified two years ago…that the* ***dental students were treating the OH students with such contempt and such disregard and disrespect (****OHP3)*	dental students were treating the OH students with such contempt and such disregard and disrespect		
32.	*during the accreditation visits and things like that, and the interaction with the students, the* ***dental therapy and oral hygiene students and how they were being looked at upon by the dental students... Was that they were... They felt belittled****... And lecturers we're not doing anything. (PBD3)*	the dental therapy and oral hygiene students and how they were being looked at upon by the dental students... Was that they were... They felt belittled		
33.	*what the universities were doing in terms of how they were training or whatever, you know, but I think that they were very different. Each one of them had a very different training methodology, and they were trained by different people, you know, like I said, the therapists, we only trained the two institutions of choice, which was the one which was UNIV2 and Medunsa and they,*	there were some of the academics that actually had a bias towards these		

	you know, there was a bit of a bias in training, when it came to therapists and hygienists, I think, because ***there were some of the academics that actually had a bias towards these two professions, they thought them to be inferior. (****PBD3)*	*two professions, they thought them to be inferior.*		
34.	*they were not,* ***they were not very kind to them. They*** *may even if I may put it like that (PBD3)*	*they were not very kind to them*		
35.	*I think all three parties from the dental student, oral hygiene student and the lecturer. You are just here because you have to be here. As* ***part of your training and we just tolerate you...*** *it sounds harsh... (OHL1)*	*part of your training and we just tolerate you...*		
36.	*let me tell you from the academic side what I have realised,* ***there is a competition between BDT and BOH students, why I say so is because they don't want to be in the same class, where they do operative dentistry… you have to know almost everything so that you know your scope****… the you also have to know when you have to refer that patient to somebody else… because this patient needs treatment more than you can give. So now they want to be taught a certain topic or whatever… they want it to be just for them and not in a group (DL3).*	*there is a competition between BDT and BOH students, why I say so is because they don't want to be in the same class, where they do operative dentistry… you have to know almost everything so that you know your scope*		
37.	*I'm not saying it's an* ***entire barrier but there is competition.*** *So, for instance if our students have to re-cement a crown, it's not just us, it's the dental students chasing that same quota. And it's the same for RAD (radiography), but we have our dedicated sessions and we try and see that our students do get the benefit there, and sometimes you just must be more creative to see where they can get enough exposure. (OHL5)*	*entire barrier but there is competition.*		
38.	*no, but* ***there are common lectures between BDS and BDT just to be efficient****, e.g. if there is a broad lecture on amalgams or composites they are done together, but the main thing that the lecturers sometimes miss, is that you should look at the overall ELO's in terms of competencies and the module outcomes … like in operative dentistry… a unit such as dental materials, to what extent should a DT know these areas so that you draft your curriculum and timetable according to that. So that is how this school operates (DL2)*	*there are common lectures between BDS and BDT just to be efficient*		
39.	*eventually you find that the DT wanting to leave to go to study to become a dentist to do the same thing… or the OH wanting to become a DT or dentist (DL3)*	*DT wanting to leave to go to study to become a dentist*	**8.1.3 Advancement within the dental profession** **23 Quotes**	
40.	*this push of wanting to be a dentist… its implicit… (DL2)*	*push of wanting to be a dentist*		
41.	*students they don't know what's happening out there, they come and register but when they start working they say why did I do Oral Hygiene where I get R5, why didn't I do BDS? Then they finally come back to do BDS (DTL1)*	*why didn't I do BDS? Then they finally come back to do BDS*		
42.	*you look at the first-year students almost 12 out of 30 is now male (33%), the problem is a lot of them also dropout over time (HPCSA1)*	*12 out of 30 is now male (33%), the problem is a lot of them also dropout over time*		

43.	*Many of my students when we have our first lecture I ask them "what is your purpose?" and* ***at least 1 or 2 will say it's to get into dentistry,*** *that's beyond us… the rest of them don't have a purpose, they see it as a means to an end, it's just a job and they need to earn money that's it. (DL4)*	*least 1 or 2 will say it's to get into dentistry,*	**Contestations – 21**	
44.	*we still can take in 25 students, we select 25, but not all 25 arrive here, in our present first-year class we only have 17... What happened to the other 8 we don't know... And then another thing that we find is that* ***two or three of our students finishing BOH move on to studying dentistry****... So you lose them in any case. (OHL1)*	*two or three of our students finishing BOH move on to studying dentistry*	**No contestations - 2**	
45.	*two out of the five from the beginning would say,* ***I didn't get selected for dentistry... I will go and do dentistry after oral hygiene.. (OHL1)***	*I didn't get selected for dentistry... I will go and do dentistry after oral hygiene*		
46.	*the policy of the university is that we give* ***first preference to the new matriculants, and if you are a DT you are low down (for selection)*** *and we don't go beyond intake of 40 students, we are capped by the HPCSA. So we take the high flyers from matric, then those with BSc, the DT and sometimes OH... but mostly DT are pushing to get in hence this cadre contestation, (DL2)*	*first preference to the new matriculants, and if you are a DT you are low down (for selection*		
47.	*So, at our institution, previously that only took one oral hygiene student to do dentistry. So even if they were two or three indicating that they want to do dentistry,* ***they will have a selection process and they will only take one, so they keep one place for oral hygiene students****... (OHL1)*	*they will have a selection process and they will only take one, so they keep one place for oral hygiene students*		
48.	*from last year's 3rd years,* ***one is now studying dentistry, one medicine, and another one veterinary science****, just to give you an idea of how many (OHL1)*	*one is now studying dentistry, one medicine, and another one veterinary science*		
49.	*In some cases, I have seen that they realize that I have got the ability... I think I've got the ability to do more to be more. So in the first year they'll be quite comfortable just to do oral hygiene, but as I progressed,* ***they no I think I am destined for higher things. (OHL1)***	*they no I think I am destined for higher things.*		
50.	*training from my personal experience****, most if not all our OH students come in wanting to be dentists.*** *and so, the dental fraternity or what is marketed as the dental profession is the dentist. So, if you are sitting at home and you are doing gr.11, and you at that point where you are choosing careers, dentists seem like that's the way to go. You not sitting at home thinking that I want to be an OH because that's not something that you've been exposed to. (OHL4)*	*most if not all our OH students come in wanting to be dentists.*		
51.	***Our faculty gave 4 or 5 qualified OH a place, some of them qualified two or three years ago and then they came back.*** *but, every year there is an OH that is in the DENT group, this year was phenomenal, there were 4-5 students and it's by choice because they feel that they can do more. (HPCSA1)*	*Our faculty gave 4 or 5 qualified OH a place, some of them qualified two or three years ago and then they came back*		

52.	*a lot of OH are **qualifying as hygienists because they can't get into the dental programme… or they using it (OH qualification) as a bridging course** (PBD2)*	*qualifying as hygienists because they can't get into the dental programme… or they using it (OH qualification) as a bridging course*		
53.	*it was quite sad to see because we have raised these issues with the, with **the lecturers and they were encouraging therapy students and hygiene students to change to dentistry** and that was where we had a problem (PBD3)*	*lecturers and they were encouraging therapy students and hygiene students to change to dentistry*		
54.	*no-one is going to know that your intention is to do dentistry, a lot of them thought the OH is a good choice and **they started liking it they want to do more and then they decide to go into dentistry** (HPCSA1)*	*they started liking it they want to do more and then they decide to go into dentistry*		
55.	*the whole story of them going into a master's program and a Ph. D program because they have a three-year degree. A lot of them struggle, and they've got to go and do diplomas and before they accepted into a masters and a PhD program so that's **where there's a bit of frustration at the moment, because they can't get straight into a master's program with the three year degree program.** (DTL2)*	*there's a bit of frustration at the moment, because they can't get straight into a master's program with the three year degree program.*		
56.	***not sure about what to put in a curriculum... honours, for instance**, the difference in the curriculum for instance between honours and a masters, because they because it's a three-year degree, they will first have to go the route of honours and then Master's... it cant be like go into masters directly... And then, the will to do it... yah we'll do it... but nothing (OHL1)*	*not sure about what to put in a curriculum... honours, for instance*		
57.	*a four-year degree... no, never not at this university... Because **we are battling just to get a postgraduate thing in place**. (OHL1)*	*we are battling just to get a postgraduate thing in place*		
58.	*there isn't enough of a good evidence base for dental therapy. I personally believe that the two can be merged… whatever you would call them… an oral therapist… with a common scope of practice, **and if you are creative, you can run a curriculum that allows for one could go and practise, then come back to finish either BchD or BDS**… but there are a lot of people that are anti that kind of thinking." (DL2)*	*if you are creative, you can run a curriculum that allows for one could go and practise, then come back to finish either BchD or BDS*		
59.	*more and more what we are seeing at this dental school, because we train all three… is that **these cadres particularly the DT (especially those who are above average) they tend to apply to do dentistry, but the two programmes don't really talk to each other.** So, after the three years of DT, the student applies for BDS and will get one or two credits of modules but start from first year. (DL2)*	*these cadres particularly the DT (especially those who are above average) they tend to apply to do dentistry, but the two programmes don't really talk to each other*		

60.	*as I said* ***they get a degree and they go out into practice for a limited time and then they end up doing something else…*** *(DL4)*	*they get a degree and they go out into practice for a limited time and then they end up doing something else*		
61.	*must also say* ***from the first group qualified in 2013 so it's five years now and we've never even had an inquiry even****. This is being offered now can I come and do an honors... (OHL1)*	*from the first group qualified in 2013 so it's five years now and we've never even had an inquiry even*		

4 dentists, OH- 7, DT – 3 = 14 and DT-8, OH- , DENT-23

23 / 15 / 23 = 61

Table 8.2. Manipulating the scope during training

	Observations	**1st order analysis** **1st order concepts**	**2nd order analysis** **2nd order themes**	
1.	*they are* ***trained by dentists, because we don't have therapy lecturers*** *(DTL1)*	*we don't have therapy lecturers*	**8.2.1** **We're not taught it** **21 Quotes** **Contestations about who teaches and what is taught – 19** **No contestations - 2**	
2.	*10 years ago, we had dentist training therapists, it has now changed, where* ***we have dental therapists training dental therapists, and we have hygienists training hygienists****. So, on our establishment, we have more dental therapists, part-time and full-time training dental therapists(DTL2)*	*we have dental therapists training dental therapists, and we have hygienists training hygienists*		
3.	*we do not have DT as a dept. so meaning there is no one who is a DT who is running with the DT curriculum so that it can be run properly. From long ago it has been run by dentists and right now I know it's under community dentistry. But there is a push for this so that DT and OH can have their own leg to stand on.* ***DT and OH students feel that this is the reason why they feel that they are not taken care of as a profession on its own. It's like they are a tentacle of dentistry*** *(DL3)*	*DT and OH students feel that this is the reason why they feel that they are not taken care of as a profession on its own. It's like they are a tentacle of dentistry*		
4.	*HPCSA coming last year July and they are coming again in July… and* ***they are insisting that there should be a standalone dept****. training DT and OH, with a head for the purposes of role-modelling… for the unwritten curriculum… which makes a lot of sense. (DL2)*	*they are insisting that there should be a standalone dept*		
5.	*We're* ***suppressed by the dentists****, and we're not taught it at the university level" (OHP4).*	*suppressed by the dentists*		
6.	***I'm not aware that they were giving LA*** *because it was still under review for scope of practice (DL4)*	*I'm not aware that they were giving LA*		
7.	*I did once or twice have vibes from guest lecturers that, like* ***we had one specialist who when he would lecture us it was very clear that he didn't think much of oral hygienists and he was pretty bummed that he had to lecture us****. (OHP5)*	*we had one specialist who when he would lecture us it was very clear that he didn't think much of oral*		

		hygienists and he was pretty bummed that he had to lecture us		
8.	from the responses that I've seen or feedback that we've had it like "oh **we didn't realise that OH must do this as well, so now I've been instructed to teach!" so it does come across as if it's a bit of a chore for them to do it, and they will do it also in a very minimalistic way… because "the OH only needs to know that much**". So, they don't explore the options of how bad the problem can get… "I did teach it and that's enough" (OHL4).	we didn't realise that OH must do this as well, so now I've been instructed to teach!" so it does come across as if it's a bit of a chore for them to do it, and they will do it also in a very minimalistic way… because "the OH only needs to know that much		
9.	starting here **in our School of Dentistry. There's a lot of reservations about some of the procedures and some of the things is openly say that I don't think that oral hygienist should be allowed to be beyond that even reluctant to do the training** if we asked him" (OHL1).	There's a lot of reservations about some of the procedures and some of the things is openly say that I don't think that oral hygienist should be allowed to be beyond that even reluctant to do the training		
10.	Local anaesthesia I didn't know that... **my understanding was that this only came into effect from 2013** (DL1)	my understanding was that this only came into effect from 2013		
11.	all the glass ionomers, the splinting, the PRR, all that it's all been taught from that department... And there's also a lot of reluctancy and negativity."(OHL1)	taught from that department... And there's also a lot of reluctancy and negativity		
12.	my institution where I work on a daily basis. **This also this negativity towards oral hygienists** and in all the years I've been here I don't know why still... why can't we each have our own place and do what we trained for and work together. (OHL1)	also this negativity towards oral hygienists		
13.	the other issue is mouth guards, as I've said that as an institution, we have a foci, we know that when they leave they are going back to those areas, issues of mouth guards we realise that departments are not teaching so those are some of the things that we have experienced … **depts. don't teach mouth guards because we don't use it in practice, and we have to tell them this is the scope** and it has to be taught…(OHL3)	depts. don't teach mouth guards because we don't use it in practice, and we have to tell them this is the scope		
14.	**don't think dentists' trust OH in general to carry out the procedure.** Because it is very expensive to do it properly and they have to adjust the denture to a certain extent and I think that dentists are afraid that damage may occur in the process and they will be responsible for replacing the denture, so it becomes a risk factor and an expense factor. Because OH don't have as much experience as dentists do… but	don't think dentists' trust OH in general to carry out the procedure		

	the irony of the situation at this institution is that from the information I have, is that dentists don't qualify doing the procedure. Or not all of them, majority of the students don't do the procedure… (DL4)			
15.	*I think **we spend so much time training oral hygiene students on all these extra things. And then not necessarily going to do it**... so it it really worth our while spending all that time (OHL1)*	*we spend so much time training oral hygiene students on all these extra things. And then not necessarily going to do it*		
16.	***all they still see is scaling and polishing**, typical from those days… (HPCSA1)*	*all they still see is scaling and polishing*		
17.	*lecturers that **teach LA to the dental students are the same people who teach the OH students, the practical and the theory**. (OHL5)*	*teach LA to the dental students are the same people who teach the OH students, the practical and the theory*		
18.	*I **actually use the same lecture slides for the dentistry students and the oral hygiene students, the difference comes in how I present the slides to the students**. I believe that they both need the same knowledge it's just that the dentistry student will use the knowledge differently and the oral hygiene student will use the knowledge differently. So, from a dental student point of view they will need to know everything because they need to be able to do everything, from an oral hygiene perspective those students still need to know everything but they are not necessarily going to be doing everything. So, if they understand the content and they understand the process and the future treatment it allows them to perform their function so much better. It is not always about what you are going to be doing yourself... as an oral hygienist or a dental therapist you will need to understand future processes and to guide your treatment options required" (DL1)*	*actually use the same lecture slides for the dentistry students and the oral hygiene students, the difference comes in how I present the slides to the students*		
19.	***you have to keep reminding students that they have been trained to do other things**, you have got a 3rd year student who can clearly see that the patient has a lesion from a denture, and all they say is that they going to refer. And would say "but what can you do in the meantime for your patient while that referral is still taking place? oh yes we can do that as well" so as students you have to keep reminding them ….(HPCSA1)*	*you have to keep reminding students that they have been trained to do other things*		
20.	*I'm bias toward **SADA…because they have always been against DT and against us here for training** DT… they have said that they (DT) are not sufficiently trained to do X, then we say "where is the evidence?" (DL2)*	*they have always been against DT and against us here for training*		
21.	*it's simply because they don't have the acumen then… to be able to look beyond the scaling and the polishing, and the plaque and the calculus, they need to look beyond those things. And **if you work for a practice that is only supporting your role in cleaning and polishing you are going to end up really in the dumps then because you basically are not getting a chance to explore your scope of practic**e (HPCSA1)*	*if you work for a practice that is only supporting your role in cleaning and polishing you are going to end up really in the dumps then because you*		

		basically are not getting a chance to explore your scope of practic		
22.	*the curriculum itself need dedicated staff to teach certain things. And maybe it would be better if you had upskilled hygienists is teaching the hygiene students, because they would know the scope they would have the experience and the expertise to relay the knowledge that needs to be relayed. Because if it is within the scope of a hygienist then why do you need a dentist to teach it? The hygienist should be teaching it (DL1)*	*if you had upskilled hygienists is teaching the hygiene students, because they would know the scope they would have the experience and the expertise to relay the knowledge that needs to be relayed. Because if it is within the scope of a hygienist then why do you need a dentist to teach it?*	**8.2.2 Dentists do not trust oral hygiene lecturers knowledge** **21 quotes** **Contestations – 12** **No contestations - 9**	
23.	*we've got queries from the people here in our institution, who has got to do the training, because we rely heavily on odontology for instance to do a lot of the more restorative procedures because we can't do all the work (OHL1)*	*we rely heavily on odontology for instance to do a lot of the more restorative procedures*		
24.	*for LA we have to make sure that even the lecturers in OH have registration for IPP within the school… and most of them when they trained themselves were not doing LA (DL2)*	*we have to make sure that even the lecturers in OH have registration for IPP within the school*		
25.	*we don't have the experience, I mean how many splintings have I done in my life so you can't really expect me to, to be an expert on that. So, we go to the experts, and we ask them to please do the training. So they don't really believe that an oral hygiene should do that" (OHL1).*	*we don't have the experience, I mean how many splintings have I done in my life so you can't really expect me to, to be an expert on that. So, we go to the experts*		
26.	*Oral medicine would be taught to OH by dentists and specialists, because that's what they are exposed to daily in clinical practice. And it comes from a more experienced point of view to the OH (OHL4)*	*Oral medicine would be taught to OH by dentists and specialists*		
27.	yes, *they get taught tissue conditioning in the 2nd year, these students will have the theoretical knowledge of tissue conditioners, advantages and disadvantages, then we do active and passive teaching.* ***Passive knowledge is we give the lecture, while in active teaching we take that knowledge and put it into practice****, so they learn the steps of applying a tissue conditioner and then they have to do an assessment on it as well. (DL4)*	*Passive knowledge is we give the lecture, while in active teaching we take that knowledge and put it into practice*		
28.	*you have a temporisation of a tooth,* ***all of them would be taught to do it the same way… because there is no lesser way of doing it****. So, you wouldn't say this is an OH now you have to belittle the procedure… they must know how to do it the correct way, because there is no difference in teaching them (DL3)*	*all of them would be taught to do it the same way… because there is no lesser way of doing it*		

29.	*when you are teaching you are not just imparting what's in the textbook, but you are imparting on understanding and on clinical management and decision-making around that topic. And if it's not something that you do on a daily basis and it's something that yes you may come across oral medicine lesions, which is not what I'm saying… all clinicians come across such lesions, but there are specific clinicians that would be dealing with these on a more regular basis than others. So,* ***their clinical decision-making becomes a lot more natural and the knowledge that they would impart would be a lot more valuable*** *for a student (OHL4)*	*their clinical decision-making becomes a lot more natural and the knowledge that they would impart would be a lot more valuable for a student*		
30.	*we don't have oral hygienists to provide training (on whitening) … every year we call different companies to come and present on this topic, we know that these companies are basically just promoting their product.. and we don't want that, we would prefer when they come they just come in to do a demonstration and that's it (OHL3)*	*training (on whitening) … every year we call different companies to come and present on this topic*		
31.	*when it comes to the clinics in* ***LA, because there is no difference when it comes to the techniques****. Then obviously in the expanded functions with conservative dentistry, it's not the same lecturer that does the cons lectures for dental students and us. An OH does ours and someone else does the dental students. Applicable to our scope of functions, there is one way of doing it, one way of doing a fissure sealant, PRR, ART technique, it's not going to differ from what an OH is going to be taught (OHL5)*	*LA, because there is no difference when it comes to the techniques*		
32.	*expanded functions was sufficient, because the group that I was in…* ***the OH all had experience of 15 plus experience in the field… we were able to grasp the techniques, procedures and the theory much faste****r… than somebody would have that just came out of university in 2012… (PBD2)*	*the OH all had experience of 15 plus experience in the field… we were able to grasp the techniques, procedures and the theory much faste*		
33.	*what I've found with older oral hygienists and not necessarily all of them but like the one I work with for instance and ones I've worked with before. They say that they did the diploma then they went, and* ***they did expanded functions and one of their expanded functions at the time was to allow them to inject and it was like a weeklong course. Whereas ours was a year, like half a year of theory and half a year*** *of practical and it was intensive(OHP5)*	*they did expanded functions and one of their expanded functions at the time was to allow them to inject and it was like a weeklong course. Whereas ours was a year, like half a year of theory and half a year*		
34.	*DT and OH* ***coming to operative dentistry, coming in to the sessions and supervising the DT an OH students in the clinics. So that they themselves eventually would become that people that would run operative dentistry,*** *like a branch of operative. So, you would have a dept. of DT where you would have DT that would do operative, perio, in all the disciplines they are supposed to function (DL3)*	*coming in to the sessions and supervising the DT an OH students in the clinics. So that they themselves eventually would become that people that would run operative dentistry*		
35.	*you are teaching them the ideal procedure here on the ideal patient, yet when they go out they have to learn to think outside the box which we should be doing here. This is the environment where you help them to think outside the box and practise outside of the box. So, I don't*	*we should give them complicated cases here and when they go out*		

	think that we should be giving them simple cases, here ***we should give them complicated cases here and when they go out there they are competent and they can handle*** *it because they are not experiencing it for the first time (DL4)*	*there they are competent and they can handle*		
36.	*if you have done certain basic sciences you should be able to do it… the focus is not necessarily what you are allowed to do, I think it should be on how you continually train yourself to do it, because the confidence also comes from that. And if you are going to be questioned about how confident you are at giving a block for instance… you will indirectly shy away from doing it and then that just emphasises the point "you see that is why we say that they will never be able to do it". So that is* ***why we need to train students to be confident in these procedures and implement their basic sciences in their practical and clinical work****. And if students are trained like that, we won't have issues of the questions that arise from how well you can give a block or LA… it's the same thing as prescribing antibiotics, I get taught as a OH of the various antibiotics that can be used but do not prescribe. I can advise the patient, but I cannot sign. I've had situations where I have disagreed with the dentist on what needs to be prescribed for that patient, but it still is not going to be my signature that goes on the dotted line. So, the dentist gets to choose what they think is good for the patient. But if we take it back to the theory and how much theory you've done in Pharmacology and how much theory you've done on patient management, does the OH know less than the dentist does? It becomes questions that need to be discussed in academic forums, to redirect our training (OHL4)*	*why we need to train students to be confident in these procedures and implement their basic sciences in their practical and clinical work*		
37.	*one said to me, "****We need to do this because we don't have a choice, we're forced to****." (OHP5)*	*We need to do this because we don't have a choice, we're forced to*		
38.	*there have been* ***cases where a dentist covered restorative procedures for students and in the clinic, a DT realises that the students are not well versed on the depth of that procedure. And the DT must recover/ re-teach*** *that work (OHL4)*	*cases where a dentist covered restorative procedures for students and in the clinic, a DT realises that the students are not well versed on the depth of that procedure. And the DT must recover/ re-teach*		
39.	*If there's a* ***teacher training (on LA) a group of dental students, he or she has the perception knowing what they know as being a dentist that person does something. And when they train hygienists, the perception may be different****. But if that group was together and if trainer wasn't sure who or what was a hygienist or who was a dental student. And the training was focused on the skill that both those people needed for the procedure. It may be a different situation then, you know… Because sometimes it's also influenced by the fact that you know that you're doing it for a hygienist. And that's not right. And that's why if there's a greater integration, and the skill is going to be taught at the third-year level of a dentistry student, second-year level of a hygiene student, the groups are put together, they split up into different sections and trainers train them the same way, both students (PBD1)*	*teacher training (on LA) a group of dental students, he or she has the perception knowing what they know as being a dentist that person does something. And when they train hygienists, the perception may be different*		

40.	***reluctance to do the training because they don't believe that an oral hygienist should actually be doing these things***... Okay, so now they are forced to do the training. And we find that by just do it to do it you know, there's not that passion and there's not time put into it. And so in the end they do the demo....but we still have to supervise the students and the actual training (OHL1)	*reluctance to do the training because they don't believe that an oral hygienist should actually be doing these things.*		
41.	as an academic you stop to think, you start questioning, where it came from, why was it said like this? Then you start to realise… and ***you don't know how to guide these old school professionals to start thinking differently, and it's really, really sad that professionals don't stop to think / reason, if you were to take the three scopes of practice and ask at what point did they need to start using the drill***, it's not in 2013 when they have to start doing PRR. So, now it's official and they are going ooh and ahh… but we not supposed to (use the drill), (HPCSA1)	*you don't know how to guide these old school professionals to start thinking differently, and it's really, really sad that professionals don't stop to think / reason, if you were to take the three scopes of practice and ask at what point did they need to start using the drill*		
42.	people are coming out with the training that they require (DP1)	people are coming out with the training that they require		
43.	the ***scope does not specify which group does which one, this group can do Type III PRR*** because it is similar to a Class I (restoration) (DTL1)	*scope does not specify which group does which one, this group can do Type III PRR*	**8.2.3 Interpretation of the new scope** **22 Quotes** **Contestations about interpretation of new scope – 19** **No contestations - 3**	
44.	sometimes when we sit at curriculum committee meetings, the s***tatements in the scope are sometimes a bit vague*** and the lecturers would ask… what do they mean by that conceptually? (DL2)	*statements in the scope are sometimes a bit vague*		
45.	The problem that we have is, ***we've actually discussed it with the board this scope is not very clearly written. I think whoever wrote it and so many different interpretations from individuals because even in my department*** I would read it this way and prof... will read it that way. (OHL1)	*we've actually discussed it with the board this scope is not very clearly written. I think whoever wrote it and so many different interpretations from individuals because even in my department*		
46.	I'm not sure who they get to write the scope is it hygienists, is it somebody from the health professional Council, ***shouldn't they come to universities... so that they can assist them, I don't know, I don't know who in the end does the physical writing of the scope***... putting it on paper. (OHL1)	*shouldn't they come to universities... so that they can assist them, I don't know, I don't know who in the end does the physical writing of the scope*		

47.	We **haven't given any input it's come from the professional organizations like SADA or HPCSA but we haven't given input to any change in particular**… okay. and I stand to be corrected, I don't know if our academic leader and other staff members but as far as I know we didn't. (DTL2)	haven't given any input it's come from the professional organizations like SADA or HPCSA but we haven't given input to any change in particular		
48.	So, that's what we are teaching them they can do abrasive areas… **I know that they do not use fast hand piece to create a cavity, do they?** (DL3)	I know that they do not use fast hand piece to create a cavity, do they?		
49.	you **teach up to them Type I, II, III as far as I know. But what I know is that isn't clear.** (DL3)	teach up to them Type I, II, III as far as I know. But what I know is that isn't clear.		
50.	I heard from the HOD is that yes, they need to know Type I – III, **but they must do I think Type I & II because if they get into type III they might as well be doing a composite restoration**. Because that's what happens anyway… so, we know with PRR that we cannot tell when it comes to diagnosis that I know for sure that this is PRR Type I, because its only when you go in that you realise oops… I'm in Type III. Maybe it's important to let them know from I to III, so eventually if that happens, they will know is the part that I'm not equipped to do as a type I or a Type II. But I'll do it as a type I or II and then I can refer, if there is a problem for the patient (DL3)	but they must do I think Type I & II because if they get into type III they might as well be doing a composite restoration		
51.	**we didn't want them to administer LA because they didn't have the background knowledge** in pharmacology, the side effects, emergency management etc. so if they introduce that into the curriculum they could. But I think now they do have pharmacology course here… but previously with the diploma they didn't. (DL4)	we didn't want them to administer LA because they didn't have the background knowledge		
52.	what is the sealant restorations, because that is one thing that I realized that some of the dentist here see your sealant restoration as putting in a sealant. So you just open up the fissure with a bur and you only apply a fissure sealant and other dentists now say that you can either put in a sealant, or you can put in a composite. **So, what is the difference. So is a sealant restoration the same as a preventive resin restoration?** (OHL1)	So, what is the difference. So is a sealant restoration the same as a preventive resin restoration?		
53.	what **our students are now taught is, I think, up to a Class II, so they're not allowed to go into the dentine**... that's what the dentists who teaches them say... So as long as you stay in enamel. But where do you draw the line, you know it's difficult. (OHL1)	our students are now taught is, I think, up to a Class II, so they're not allowed to go into the dentine		
54.	**I'm teaching them to restore, without creating a cavity, but they still know what a cavity should look like once you use the fast hand piece** and all. As far as I know they can use hand pieces probably to do the proper temporary restoration… so that they are able to help the patient in that sense. But they are not doing it to do a composite restoration or any other permanent restoration. (DL3)	I'm teaching them to restore, without creating a cavity, but they still know what a cavity should look like once you use the fast hand piece		
55.	It is who the teacher is and what the mind-set of that teacher is. So perhaps if you have a specialist teaching the hygienist they would have in their minds what they would perceive hygienist need to know. And similarly, for a dentist where they would say you are not going	they are going to teach content in may be what can be seen in a negative light		

	to do it certain procedures and that's why I don't have to teach you this, ***they are going to teach content in may be what can be seen in a negative light.(****DL1)*			
56.	*with regards to dental materials and PRR, is the concept.* ***You are teaching the student what is a PRR but it's really a Class I composite…*** *when you send the student into practice into the real world, what do they charge for? They don't charge for PRR, because medical aid tariffs don't have a Preventive Resin Restoration, they have a Class I composite not a resin. So, you tell a student you going to do a PRR and then later you tell them you are going to do a Class I… now OH students listen to that and then they often ask the question, "what's the difference?", and there is no difference. It's just the concept, we just give terminology to a procedure, Class I, Type I, II PRR, whether it's in the enamel, Type II PRR it's partially into the dentine, and Type III traditionally it was a Class I composite, but now we know that you can prepare a cavity only in enamel, it doesn't have to be only in enamel… do that and leave it alone. You can do a cavity and do it in the enamel and then put in a flowable, is that a PRR? You can't actually tell the difference. So, that's the only debatable thing about it, now what do we teach the students? (DL4)*	*You are teaching the student what is a PRR but it's really a Class I composite…*		
57.	*BOH students learn PRR resins in their own clinic, that's run by community dentistry, that's not the responsibility of odontology. However, whatever I've just told you I teach them just as repetition. Because when we do the Class I composite restoration I always tell them to be open-minded about it. This is what we are going to teach you but there is no difference and now we don't get the questions anymore "****what is the difference between PRR and class I composite?****", they understand the concept that it's just terminology (DL4)*	*what is the difference between PRR and class I composite?*		
58.	*going back to local anaesthetic... Because in 2000, when we still had a diploma, I think* ***most of the universities were offering the diploma except UNIV1... they all interpreted the local anaesthetics as giving blocks, and we saw it as you can only be infiltrations, but now going back to how this actual scope now reads is still not very clear****, it doesn't specify specifically. It just says local aesthetic appropriate to the scope (OHL1)*	*most of the universities were offering the diploma except UNIV1... they all interpreted the local anaesthetics as giving blocks, and we saw it as you can only be infiltrations, but now going back to how this actual scope now reads is still not very clear*		
59.	*we previously interpreted it as infiltrations because we saw that. She's only going to need it for root planings, and only needs to infiltrate. But then, obviously, when we initiated the degree course and we realised that all the other universities, are teaching them how to do blocks... we started teaching it. (OHL1)*	*interpreted it as infiltrations because we saw that. She's only going to need it for root planings, and only needs to infiltrate*		
60.	*application of / placement of minimal invasive – PRR, we have been having that issue, we tried to engage with others (OHL3)*	*placement of minimal invasive – PRR, we have been having that issue*		
61.	***there wasn't uniformity, I found that mainly with the tooth whitening****… not really with the ART or the sealant restorations… (PBD2)*	*there wasn't uniformity, I found that mainly with the tooth whitening*		

62.	*as a (dental) school there are different departments who will be responsible to offer the specific content… for us it is offered by the operative dentistry dept…**where there is no hygienist or therapist hired in their dept… how it's being taught… the PRR, for the past two years it has been taught only the theoretical component**… only this year we asked the dept. to separate… the theoretical component is the same for therapists and hygienists… once you can diagnose the tooth properly and you say that your treatment plan will be a PRR, they all actually do a caries risk assessment … then for hygienists you make your diagnosis but your treatment will end at Type I but for therapists it goes a little further to introducing the PRR Type II and III (OHL3)*	*where there is no hygienist or therapist hired in their dept… how it's being taught… the PRR, for the past two years it has been taught only the theoretical component*		
63.	*it's the same, like for instance **you have the notes BDS2, and BDT3, they are being taught the same thing**. (DL3)*	*you have the notes BDS2, and BDT3, they are being taught the same thing*		
64.	*when I went on board I said **I am sending a letter out to each institution now to tell them are they aware of the new scope and of the differences of the three scopes** and I attached all three scopes 1985, 2000, 2013. (HPCSA1)*	*I am sending a letter out to each institution now to tell them are they aware of the new scope and of the differences of the three scopes*		
65.	*if you not a member of the Board you don't know, so **what did the previous board do to advise institutions here is the new scope put it into your curriculum** (HPCSA1)*	*what did the previous board do to advise institutions here is the new scope put it into your curriculum*	**8.2.4 New scope is being implemented very slowly or not at all** **39 Quotes** **Contestations – 36** **No contestations - 3**	
66.	*students that qualified before 2000, the students are saying that dentists are not letting them do it (LA), students after 2000 are okay, except for those groups that did LA as an expanded functions, the 2013 scope the tooth whitening … **I must say it is 2018 now and our institution is not there**… (OHL3)*	*I must say it is 2018 now and our institution is not there*		
67.	*I was horrified to know that they were not offering courses and I asked why not and they said that **they didn't get proper directive from the HPCSA that we are supposed to implement.** (HPCSA1)*	*they didn't get proper directive from the HPCSA that we are supposed to implement.*		
68.	*they have done is to **have more regular and rigorous stakeholder meetings with academics**. (HPCSA1)*	*have more regular and rigorous stakeholder meetings with academics*		
69.	*some of the **restorative stuff maybe could be just because I know it's very easy to say hygienists can do...** what are they say class V erosion type restorations. (DP4)*	*restorative stuff maybe could be just because I know it's very easy to say hygienists can do*		
70.	*tooth **whitening - no not to DT**, yes, it is taught to dentists and hygienists (DTL1)*	*whitening - no not to DT*		
71.	*they **do root planing, therapists and hygienists are taught this procedure, but therapists are not being allowed to do** this procedure by the HPCSA, but the students are being trained to do this procedure (DTL1)*	*do root planing, therapists and hygienists are taught this procedure,*		

		but therapists are not being allowed to do		
72.	***assessment they (OH) will only be assessed for Type I**, (DTL1)*	assessment they (OH) will only be assessed for Type I		
73.	*prior to this, this **restorative care was not included in the curriculum I think the class fives were where they did the abrasion and restoration with composite glass ionomer**, or complements that was included in the curriculum, but now currently, it will conform to the new scope of practice. (DTL2)*	restorative care was not included in the curriculum I think the class fives were where they did the abrasion and restoration with composite glass ionomer		
74.	***We have just recently been penalised for the BOH and BDT programs, for not being completely in alignment with the 2013 scope** of practice and we got provisional accreditation to offer these degrees. (DL2)*	We have just recently been penalised for the BOH and BDT programs, for not being completely in alignment with the 2013 scope		
75.	***it's there in the curriculum to be introduced… because it's not there in their quota**… (DL3)*	it's there in the curriculum to be introduced… because it's not there in their quota		
76.	*I know for a fact that if you question some of our OH here, or graduates if you come across them… they only started administering LA recently. It was not in 2000, it may have been part of the scope of practice but I **don't think that every institution agreed to allowing their OH to give LA** (DL4)*	don't think that every institution agreed to allowing their OH to give LA		
77.	*I haven't seen, maybe other supervisors have but I haven't seen… I'm not going to take responsibility for my statement, but that's a fact**. I have not seen a single OH student administering a LA**. (DL4)*	. I have not seen a single OH student administering a LA		
78.	*I think that its being contested… it's just that for our institution we haven't really engaged in teaching it in a proper way… there is a high demand for it… **I know of hygienists that have qualified without knowing** (OHL3)*	I know of hygienists that have qualified without knowing		
79.	*we sent the letters to the universities, then it was up to the Deans. That particular institution, whoever the **Deanship was at the time did not even filter it down to the OH division. I went there 2018… last year which is 5years later and they haven't yet instituted it**. (HPCSA1)*	I went there 2018… last year which is 5years later and they haven't yet instituted it		
80.	*then you saw slowly the other institutions started implementing the new scope… but **I was horrified that up until last year they were still not doing certain procedures… it was very, very sad…it's how they embrace OH at the end of the day… you cannot put all your efforts into Dentistry… and you side-line oral hygiene**. (HPCSA1)*	I was horrified that up until last year they were still not doing certain procedures… it was very, very sad…it's how they embrace OH at the		

		end of the day… you cannot put all your efforts into Dentistry… and you side-line oral hygiene		
81.	*I wouldn't say there was a problem with interpretation of the scope of practice I thought* ***it was more the implementation of the new curriculum that was the problem*** *(PBD3)*	*it was more the implementation of the new curriculum that was the problem*		
82.	*In terms of the hygiene from* ***one university to the next, you know, I don't think there was so much of an interpretation as much as, sometimes focus in sometimes****. We know what they would end up doing more often less often. (PBD3)*	*one university to the next, you know, I don't think there was so much of an interpretation as much as, sometimes focus in sometimes*		
83.	*I think every university had a situation where they would even teach the... Like for example, when I was a student, you know, we were not supposed to be taking impressions, because it was not within our scope, but we were all taught together so we were just taught how to take impressions. You know what I'm saying I don't think it's the interpretation of the scope.* ***I think it's actually the convenience of teaching and what it did was it confused, the student, rather than the actual practitioner,*** *(PBD3).*	*I think it's actually the convenience of teaching and what it did was it confused, the student, rather than the actual practitioner,*		
84.	*because their scope of practice says that they must apply tissue conditioners and they have to have it its part of their quota… or it* ***should be part of their quota… but I don't think it is because there are not enough patients.*** *(DL4)*	*should be part of their quota… but I don't think it is because there are not enough patients.*		
85.	*with regard to removable prosthodontics, OH still have a problem applying theoretical knowledge into clinical application.* ***They can't take theoretical knowledge and apply it because they don't have the opportunity to attend removable prosthodontic clinics****. And we have been trying to sort that out for the past 10years. However, the reason that prosthodontics says it's not feasible or sustainable is because they don't have the number of patients (DL4)*	*They can't take theoretical knowledge and apply it because they don't have the opportunity to attend removable prosthodontic clinics*		
86.	*people at the university who are in charge of the curriculum, including myself… I don't support their idea of taking it out of the curriculum,* ***I think it should be in the scope of practice. However, because it's not popular outside they don't want to include it in the curriculum, however, it is in the scope and so we have to teach it****. The solution to that is teaching it as a preclinical task. (DL4)*	*I think it should be in the scope of practice. However, because it's not popular outside they don't want to include it in the curriculum, however, it is in the scope and so we have to teach it*		
87.	*what I do* ***to overcome the problem of them not having it in the clinics is that you develop silicon models*** *that fit into a manikin head. We take the jaw off and we can attach the silicon models to the silicon model to the head and then we have dentures manufactured by 2nd and*	*to overcome the problem of them not having it in the clinics is that you develop silicon models*		

	3rd year BDS students, that are just stagnant so we use those and we use the expired tissue conditioner material that still sets and then we teach them how to do soft tissue conditioning for full dentures. (DL4)			
88.	***bleaching procedures we don't use we don't have the Zoom machines and things like** that it's a public institution. And we don't do any aesthetic dentistry. (OHL1)*	*bleaching procedures we don't use we don't have the Zoom machines and things like*		
89.	*the modules that taught hygienists were the impression taking the orthodontics in terms of that denture impression, or anything to do like you know what they were taught before and like even root planing. **There used to be extra lectures for the hygienists then, you know, and in the clinics,** as well as they had extra clin dent sessions were in scaling and polishing, and the perio clinics they had extra sessions there (DTP1)*	*There used to be extra lectures for the hygienists then, you know, and in the clinics,*		
90.	***there is not enough patients, it is not that there's not enough time opportunities**... that is just not patients. Because they're also competing for patients so for instance root planing. The dental students have to do root plannings in perio, the oral hygiene students have to do root plannings... You know, when there is a patient whoever grabs the patient first is lucky and they will do it... do it is difficult in getting patients for some of these procedures (OHL1)*	*there is not enough patients, it is not that there's not enough time opportunities*		
91.	*often find that you've got the patient in your chair you identify that you must do a glass ionomer on one or two teeth... book an appointment and the **patient doesn't turn up... So you lose that patient** (OHL1)*	*patient doesn't turn up... So you lose that patient*		
92.	*for instance the **soft linings our students, not one of them go out here having done it** honestly. (OHL1)*	*soft linings our students, not one of them go out here having done it*		
93.	*there was a **lack of consultation was with the Deans, who felt that you are putting things into the scope… are you asking the institutions if they can cope to have to teach all that… they need staff, they need to increase infrastructure** to incorporate that into the curriculum (HPCSA1)*	*lack of consultation was with the Deans, who felt that you are putting things into the scope… are you asking the institutions if they can cope to have to teach all that… they need staff, they need to increase infrastructure*		
94.	*it is not compulsory for OH to have the Ed and Tr if they don't need to do the procedures, it's **only if you want to practice those procedures that you have to come back and do it. So, universities had to fulfil this mandate to offer courses** to get all their graduates up to breast (HPCSA1)*	*only if you want to practice those procedures that you have to come back and do it. So, universities had to fulfil this mandate to offer courses*		
95.	*it is still your programme, they are bringing an income into the university just like any other student is. And I think that **it needs to start off at leadership roles, that you need to have equal attention towards all of your programmes.** (HPCSA1)*	*it needs to start off at leadership roles, that you need to have equal*		

		attention towards all of your programmes.		
96.	***I don't want to do glass ionomers and all those things*** *but that's just me... and getting back to the original thing how many oral hygienists are really doing this whole thing out there? the full scope. So, aren't we wasting time and resources and things like that? Training them to do all these things that they're not using.. (OHL1)*	*I don't want to do glass ionomers and all those things*		
97.	*the challenge has been in terms of the t**reatment in the clinic… not allowing … we are not being allowed (dentists not allowing us to do this procedure)**… and our engagements will help us in managing/ treating the tooth… (OHL3)*	*treatment in the clinic… not allowing … we are not being allowed (dentists not allowing us to do this procedure)*		
98.	*their reason is that **we are not allowed to use the fast hand piece**... (OHL3)*	*we are not allowed to use the fast hand piece*		
99.	*LA we run a two week block, because we felt that LA is very invasive… you looking at nerves below the tissues which you cannot see. So, **we give them 2weeks of rigorous clinical experience directly on patients, we give them simulations first and when they pass that assessment they move onto patients**. (HPCSA1)*	*we give them 2weeks of rigorous clinical experience directly on patients, we give them simulations first and when they pass that assessment they move onto patients*		
100.	*So as part of our teaching **we have got to keep on impressing on them, you can work within your scope, it's okay to treat the patient**… this is a severe case so now you need to refer… (HPCSA1)*	*we have got to keep on impressing on them, you can work within your scope, it's okay to treat the patient*		
101.	*I've got mixed feeling about this, the new expanded functions as such that we need to go and do. For the same reason I think as everyone else. **We've been bleaching for however long now we have to go and, you know, and learn how to bleach**, you know. (OHP1)*	*We've been bleaching for however long now we have to go and, you know, and learn how to bleach*		
102.	*for instance, the **local anaesthetic that prior to 2003 or 2000 or whatever the case was where the hygienist didn't learn how to do that**. I would say yes, the expanded function was definitely necessary to teach you, for instance, to inject. (OHP1)*	*local anaesthetic that prior to 2003 or 2000 or whatever the case was where the hygienist didn't learn how to do that*		
103.	*I mainly do S&P and I do LA, but **I was never shown how to do the mandibular block, so I only perform, infiltration** and anterior teeth (OHP3)*	*I was never shown how to do the mandibular block, so I only perform, infiltration*		

4 dentists, OH- 7, DT – 1 and DT-11, OH- , DENT-34

21 / 21 / 22 / 39 = 103

Table 8.3. Preparation for work through increasing knowledge

	Observations	1st order analysis 1st order concepts	2nd order analysis 2nd order themes	
1.	*so now three years, okay coz when I studied, **they could do a one year or two-year diploma so now it's a three-year degree**. Yes. That's marvellous. I think that's wonderful. (DP2)*	*they could do a one year or two-year diploma so now it's a three-year degree*	**8.3.1 with a degree we focus on giving them more in-depth knowledge** **18 Quotes** **Contestations – 5** **No contestations - 13**	Preparation for work through increasing knowledge
2.	*the curriculum must be in sync with the scope… but the people who are crafting the curriculum, must make sure that there is sequencing of knowledge… and that it accumulates over a period of three years. So, let me say **there has been a slight shift, but 2/3rds of the core curriculum is still the same**. (DL2)*	*there has been a slight shift, but 2/3rds of the core curriculum is still the same*		
3.	*the change from the diploma to the degree, because of the intensity of the course and the amount of knowledge they have to acquire in odontology compared to the diploma, is **much more the quantity and the quality than previously in the diploma where it was more about knowing how and in the degree, you now have to show how**. So, if you look at Millers pyramid of teaching, it goes up a level. Before they had to know and not show, now they have to know and show and sometimes even do. That's where the curriculum has really changed much more (DL4)*	*much more the quantity and the quality than previously in the diploma where it was more about knowing how and in the degree, you now have to show how*		
4.	*I don't know what my opinion is of it because I also get to the block where dentists don't necessarily get all the education regarding implants. Though, they go on a CPD course and they learn how to do implants and they place implants. You know, without having to go back to university. So, what is told in the industry is that we have to like sort of level out the hygienist qualified with a diploma only and the others doing the degree. But then in the end **our diploma stays a diploma nothing gets converted to a degree**. (OHP1)*	*our diploma stays a diploma nothing gets converted to a degree*		
5.	***what does it help to do all the extra courses to get you so-called on par but there's still a distinction between the degree and the diploma?** So, I don't know if that answered your question, but I've never heard of a therapist or a dentist that needed to go back to university for an expanded function as things in dentistry evolved. You know. So, you know, implants a lot of the dentists didn't do at all in*	*what does it help to do all the extra courses to get you so-called on par*		

	their training, although they can do implants now. We've done bleaching in our course, why do we have to redo it? Why do we have to redo smoking cessation? Why do we have to redo rubber dam? You know, it doesn't make sense (OHP1)	*but there's still a distinction between the degree and the diploma?*		
6.	*I don't believe that the* ***diploma students have to stand back for the students that's got a degree. First of all, the ones with the diplomas are the ones that have all the experience*** *because we've been working already for however long. (OHP1)*	*diploma students have to stand back for the students that's got a degree. First of all, the ones with the diplomas are the ones that have all the experience*		
7.	*The fact that they increased the diploma, the two-year to a three-year. In my opinion the benefit is not all the extras that you get to learn that we're now supposed to do in expanded function. It is the bulk of the work and anyway that* ***we were taught in two years that you can spread over three years and obviously get a better understanding and have more time to, you know, go through it all*** *and to get your head around everything. (OHP1)*	*we were taught in two years that you can spread over three years and obviously get a better understanding and have more time to, you know, go through it all*		
8.	*I've heard some practitioners question whether or not we should be able to perform blocks saying maybe we should just be able to do infiltrations. But in* ***my training, I was extensively to do blocks, all types of blocks and I did them all plenty and I'm very confident to do it so for that's not even a question****. But maybe that's not the experience of everyone especially the hygienists that were trained very long ago. (OHP5)*	*my training, I was extensively to do blocks, all types of blocks and I did them all plenty and I'm very confident to do it so for that's not even a question*		
9.	*I know how we are training and that the* ***training is done extremely well and that our students are answering to all the competencies*** *that is set out. (OHL5)*	*training is done extremely well and that our students are answering to all the competencies*		
10.	***I know these courses by heart and I know that it has the depth that is required****, the thing is you know as I say in the 2nd year in theory and preclinical, I know... its practise and practise, and the importance is to pick all of that up in the 3rd year (OHL5)*	*I know these courses by heart and I know that it has the depth that is required*		
11.	*LA we run a two-week block because we felt that LA is very invasive… you looking at nerves below the tissues which you cannot see. So,* ***we give them 2weeks of rigorous clinical experience directly on patients, we give them simulations first and when they pass that assessment*** *they move on to patients. (HPCSA1)*	*we give them 2weeks of rigorous clinical experience directly on patients, we give them simulations first and when they pass that assessment*		

12.	***they are not allowed to work on patients until they pass the simulation test, when they work on patients we rotate them through clinics every day for 2weeks and then they do a final assessment*** *on the last day, and if we find that they still struggling we invite them to come during the vacation or when they have free time to come and get more experience and then you work on patients (HPCSA1)*	*they are not allowed to work on patients until they pass the simulation test, when they work on patients we rotate them through clinics every day for 2weeks and then they do a final assessment*		
13.	*We are very, very fortunate to have our own faculty because* ***we are able to take oral hygiene to reach its excellence as a dept… because we can take that programme and run with it and we see to it that things are done so thoroughly****, that students are not short-changed in any way. (HPCSA1)*	*we are able to take oral hygiene to reach its excellence as a dept… because we can take that programme and run with it and we see to it that things are done so thoroughly*		
14.	*I don't think time is an issue and I don't think we changed from a diploma to degree to accommodate the extended procedures. That was not the reason we wanted to, maybe enhance their status and give them professional identity which you don't get with a diploma. So, I think with a with a degree,* ***we focus more on giving them more in-depth knowledge, for instance pharmacology, more in-depth knowledge with regards to anatomy*** *we included the research module. And I think that makes them a better professional in the end. (OHL1)*	*we focus more on giving them more in-depth knowledge, for instance pharmacology, more in-depth knowledge with regards to anatomy*		
15.	*I think with* ***a degree I want to say that it just opens little more doors for you****…. And I'm going to bring in something now that maybe doesn't have anything to do with it… financially… if you had a diploma it wasn't recognised as a profession say for instance with Profmed… you could not get any insurance from them if you just had a diploma, but* ***with a degree you are on par with some of the other professions****. So yes, I think that those are some of the changes that the new scope has brought for the profession. (OHL2)*	*a degree I want to say that it just opens little more doors for you*		
16.	*you are moving from a two year to a three year programme then it's okay…* ***but if you are offering a 3year programme and you are squashing everything into it… now you want to start offering a 4year programme is that feasible?*** *So, they are saying don't keep loading the scope of practice… you were training first for 2years, and the 2year programme couldn't cope with all the things that needed to be done… and you were not doing it justice, then you moved to a three year programme and you are adding to the scope again, so the curriculum is already jam-packed, and you are not only doing clinical training, you are doing other soft skills, research skills, oral health promotion… those are huge areas for an oral hygienist… so that was a major complaint from the Deans. (HPCSA1)*	*but if you are offering a 3year programme and you are squashing everything into it… now you want to start offering a 4year programme is that feasible?*		
17.	***teach them how to make a diagnosis****. So, you sit next to them and you tell them okay tell me what do you see in the mouth. By that time, I feel I've got an idea of what is normal and abnormal for example. Right. And then, if you see things in the classmate's mouth, will you already tell him okay can you see the grooves in the teeth abrasion, things like that. I think it's the process that you build on. And then in the second year, we start with patients. They have to do a full mouth examination So, sometimes they will see things in the mouth that they don't recognise but they see it again it's not normal be something that. And then, when I present the patient to the lecturer or assessor, then you sit with them and you go through that process so I think it's it's over time. And then when they start with pathology and other subjects. (OHL1)*	*teach them how to make a diagnosis*		

18.	*You know they bring the things together. So b**y the time they're getting to third year that I've actually the able to recognize any abnormalities and name it** and know how to treat it or how to prevent. (OHL1)*	*by the time they're getting to third year that I've actually the able to recognize any abnormalities and name it*		
19.	*I don't really know what the training and the and the level of training is really like for hygienists and therapists. So, **I can't really say they've been trained well enough to do the procedures** or not. (DP4)*	*I can't really say they've been trained well enough to do the procedures*	**8.3.2 I should have known more about anaesthetics… but I didn't get it** **45 Quotes** **Contestations – 29** **No contestations - 16**	
20.	***I don't know how the oral hygienists are taught, I don't know whether they given any kind of background information** about this whether they taught about anything about the pulp, do you do in your studies you learn about the pulp. (DP3)*	*I don't know how the oral hygienists are taught, I don't know whether they given any kind of background information*		
21.	*"I'm not saying that a hygienist isn't able to do it well. But I think that that would be contested so as a dentist with a lot of experience, and somebody who does... like all of this stuff and I've done it for a long time. I think sometimes they're easy and sometimes they're hard and you need to be trained well, and maybe if you're not that skilled in bonding in difficult situations, it may be detrimental to patients rather, **to have it done rather than do it and so I would think that some of those restorative things are may be a little bit tricky**".*	*to have it done rather than do it and so I would think that some of those restorative things are may be a little bit tricky*		
22.	*Practical I felt like certain things were trained well and other things not. For me it wasn't, I battled with the scaling part I felt we didn't do enough cleanings and especially not enough cleanings on perio patients. When **I left varsity my hand scaling was very weak** like for instance, like, actually there was a bit of confusion on our course they taught us to inject before they taught us how to grip the mirror and where to sit around patient's head. (OHP5)*	*I left varsity my hand scaling was very weak*		
23.	*if you trained well to do something, you can do it. If you have expanded functions, then there must be a training to match it. So, it is set an example would be bleaching… if the scope of practice is changed in a module should be done, **therapists and hygienists should go in, back to university, have the proper training and then go out and do it"** (DTL2)*	*therapists and hygienists should go in, back to university, have the proper training and then go out and do it"*		
24.	***expanded functions and how it's being delivered is the fact that it is a checklist and its procedures**. So, have you taught the students how to place a certain material? How to assess the student for that material to be placed… do the students know the indications for that material being placed in the mouth? As opposed to integrating it with the rest of the knowledge that the student has and being able to make it… it has to come from a place where the student comes to you with a problem and it's this severe, but it's also compounded by another problem. How do you as a clinician approach that problem in terms of being effective? Who do you pull into that team and why? And what do you tell the patient and how do you just proceed with that appointment? I think it becomes a lot less about overall integrated patient management as opposed to can you do this can you do that? Can't you do this? (OHL4)*	*expanded functions and how it's being delivered is the fact that it is a checklist and its procedures*		

25.	*do think that pathology and micro anatomy and all of that, ha, that side of it. That were good enough* ***but if we had more time, I think we would've had a better understanding.*** *(OHP1)*	*but if we had more time, I think we would've had a better understanding.*		
26.	*Well, as far as I know in the dentistry course they still do a lot of anatomy from the rest of the body as well.* ***We as oral hygiene only focuses on head and nec****k (OHL1)*	*We as oral hygiene only focuses on head and neck*		
27.	*I think that also do the* ***dissections the dentistry students which oral hygiene students don't do****... they just have to identify on the wet specimen... (OHL1)*	*dissections the dentistry students which oral hygiene students don't do*		
28.	*dentistry's more extensive and more prestigious but* ***I felt like what we were trained in we were trained in thoroughly****. (OHP5)*	*I felt like what we were trained in we were trained in thoroughly*		
29.	*all the* ***people that I've employed over the years I've never felt it anyone was under trained****. I've always felt that they had sufficient training, but they were lacking experience (DP1)*	*people that I've employed over the years I've never felt it anyone was under trained*		
30.	*from a training perspective, they…. the* ***students are adequately trained****, (DTL2)*	*students are adequately trained*		
31.	*Well, we had a* ***local anaesthetic course which was like six months of theory. They took us through the ingredients, the side effects, the contra-indications, everything that can go wrong. All the pitfalls, you know, how it works, the physiology of it. And then we had very extensive training on how to do it, how to do blocks, how to do infiltrations. We had very extensive anatomy and pathology****. We took pharmacology as a subject so that we do understand exactly what's happening and why the medications are given, what should be prescribed. When it came to restorative and stuff we had a class that was restorative where we were shown exactly how to apply matrix bands and rubber dams and do things like that so I think we were trained very extensively and well. (OHP5)*	*local anaesthetic course which was like six months of theory. They took us through the ingredients, the side effects, the contra-indications, everything that can go wrong. All the pitfalls, you know, how it works, the physiology of it. And then we had very extensive training on how to do it, how to do blocks, how to do infiltrations. We had very extensive anatomy and pathology*		
32.	*I would say the baseline training was adequate. It was a rude awakening when I was sent out to work in private practice for the first time. Because in training you given three hours to do one filling, because of all the checks and things that the supervisors do in between. and you get into private practice and you're given half an hour to do a cleaning and filling for example. So that was quite a rude awakening for me. But* ***the training was very solid. There was nothing that I went out and questioned or doubted my skill or ability.*** *It was just the time, the timing that was, That was a shock to me. (DTP3)*	*the training was very solid. There was nothing that I went out and questioned or doubted my skill or ability.*		

33.	***we were pretty well trained, in as well like I'm very confident*** *to take periapical and bite-wings and pans and stuff (OHP5)*	*we were pretty well trained, in as well like I'm very confident*		
34.	*if you are alone in the middle of nowhere, in a rural environment, it's quite a challenge and that is why we felt that for DT* ***in terms of the new scope of practice, we should broaden Pharmacology, and Physiology****… because its knowledge assumed to be in place. so, critical for us is that all the heads of depts. And the senior management team should make sure that they know scope of practice, even if it's a small procedure… it's a guiding tool. (DL2)*	*in terms of the new scope of practice, we should broaden Pharmacology, and Physiology*		
35.	*they have difficulty in understanding the subject of removable pros they always have, but that's because they don't attend the clinics. There is a reason for that… that's the evidence. In all the literature, they tell you that if you have a clinical subject, and* ***you only teaching theory… the student will be able to give you back that theory but they remember it when they in the clinic… so the problem*** *with our students is that they not attending the clinics. That's why they learn the knowledge for the moment and then they forget it. So, that's the main problem we have. (DL4)*	*you only teaching theory… the student will be able to give you back that theory but they remember it when they in the clinic… so the problem*		
36.	*the scope of practice… its linked to the log book… they are actually told you have got to do so many class I, II, III… but a class I is a class I in terms of the criteria… for both BDS and BDT… so they have clinical sessions differently… with a block of 20 chairs for BDS and 20 chairs for BDT, and* ***they each have to present the patient to the tutor before they do the clinical work, and the tutor must engage them. And it's an opportunity for applied competence, and to integrate their knowledge****. (DL2)*	*they each have to present the patient to the tutor before they do the clinical work, and the tutor must engage them. And it's an opportunity for applied competence, and to integrate their knowledge*		
37.	*talking about Third World dentistry, that's a different story... if talking about dealing with the masses yeah then you've got to do what you got to do... these people are entitled to help you know no person... every person is entitled to be pain-free. Every person is entitled to be to be able to have a certain quantity of life, without a doubt, but if you're talking first-world medicine or first-world dentistry,* ***I don't think so now we haven't even brought into account*** *(DP3)*	*I don't think so now we haven't even brought into account*		
38.	*I guess just if you* ***just take your average garden variety off the street dentist, I think that they are under-qualified for this. So how much more so an oral hygienist or dental therapist****. These are tough, tough calls and I don't know. (DP3)*	*just take your average garden variety off the street dentist, I think that they are under-qualified for this. So how much more so an oral hygienist or dental therapist*		
39.	*They are allowed to use a handpiece and if they're given the appropriate instructions, initially I don't see why it should be a problem… Those procedures seldom compromise the pulpal space and a very superficial, that is why* ***I don't see any risk for hygienists recognising pulpal pathologies and this has to be taught to them****"(DL1)*	*I don't see any risk for hygienists recognising pulpal pathologies and this has to be taught to them*		

40.	*I'm not aware, because the* ***OH that attend our (odontology) clinic have never administered LA in our clinics*** *for restorative procedures, (DL4)*	*OH that attend our (odontology) clinic have never administered LA in our clinics*		
41.	*having taught the OH students for a few years now…* ***it does concern me that there is no structured preclinical component. For the expanded functions, we give them a couple of demonstrations, but there is no assessment****… not that I'm aware perhaps that is done beyond what I teach. But for us that come in as the external operative course lecturers… we have never run a practical component to what we are teaching… I'm not sure if the others have… (DL1)*	*it does concern me that there is no structured preclinical component. For the expanded functions, we give them a couple of demonstrations, but there is no assessment*		
42.	*I needed a bit more for anaesthetics****. I should've known more about anaesthetics****. But that was the time unfortunately, remember, that's when Dr H… was just introducing it so it was new. But* ***from the anaesthetic point of view, ja, I should have had more practice****. And I didn't get it. (OHP4)*	*from the anaesthetic point of view, ja, I should have had more practice*		
43.	*in some of the procedures* ***I would agree with the dentists, because we don't get enough exposure****, I would like to do at least one a week… so that I know that I'm going to be comfortable with it but now, you go and get the demo as a student or you go and do the expanded functions course somewhere at a university, they show you that you are maybe allowed to practise one… no six months later you only get to do one, I think that there is reason… in my opinion that for myself, the exposure to those procedures are not sufficient and then that is why there is a concern from others out there… why are we doing these procedures? (OHL1)*	*I would agree with the dentists, because we don't get enough exposure*		
44.	*first get the theory, then what we call a demonstration... So,* ***the lecturer will actually demonstrate to them. And then I will do the procedure, either on Phantom then on each other with local anaesthesia,*** *it's a bit more difficult because I cannot practice it on each other we think that that is unethical. So, I know they have to write a test. And I have to get like 65% for that test before they're allowed into the ward, there they get one or two sessions where they now observe the dental students doing it, and then they are just given a syringe and do it (OHL1)*	*the lecturer will actually demonstrate to them. And then I will do the procedure, either on Phantom then on each other with local anaesthesia,*		
45.	*they* ***would send us to the extraction department and make us do all the injections*** *and then the dentistry students would come behind and pull out the teeth. (OHP5)*	*would send us to the extraction department and make us do all the injections*		
46.	*one university (not named here) just expected OH at* ***the expanded functions course to do just one procedure (tooth whitening), whereas another university (not named here) we actually wrote exams to test our knowledge*** *and then we had practical to test our clinical competence. (PBD2)*	*the expanded functions course to do just one procedure (tooth whitening), whereas another university (not named here) we actually wrote exams to test our knowledge*		

47.	*the hands-on time that those hygienists are getting and how does it compare with the hours that an undergraduate has to fulfil… so if it takes 50hours… are they getting the 50 hours? And again, are they being assessed properly…. Are they certified to say that someone is now able to perform a certain function? Personally, I think that* ***someone that qualified before 2013… should not have the liberty to do a 2-week course, it should be a properly structured half-year course to teach them to do the procedures to an acceptable level****. And then perhaps get an upgrade to a degree to say yes, we can now do these procedures (DL1)*	*someone that qualified before 2013… should not have the liberty to do a 2-week course, it should be a properly structured half-year course to teach them to do the procedures to an acceptable level*		
48.	*I will still have some questions still about the LA part,* ***I don't think that they have sufficient clinical time… to manage for emergencies, because what happens when they have a patient that is asthmatic?*** *Or a patient who has a history of fainting / syncope, or a patient that goes into cardiac arrest, even the dentists don't have sufficient training with regards to that. They can do normal CPR procedures, but if it's a serious case like anaphylactic shock? So that's what we must emphasise in the curriculum is that just like we have in the referral system, they don't recognise it in the scope… to overcome that problem, all that they have to do in the scope of practice is, ensure that the patient doesn't have these conditions then the OH can give an infiltration or a mandibular block, if the patient is not a cardic patient, or has a history of systemic disease that the LA will have an effect… then that will sort out the problem, you don't have to take it out of the scope. Just introduce a referral system for LA, the dentist must administer the LA because then he will take responsibility for the patient and then that will protect the OH. Because they don't have enough clinical background, or it does not support that emergency medicine or resuscitation they don't have that in their curriculum. (DL4)*	*I don't think that they have sufficient clinical time… to manage for emergencies, because what happens when they have a patient that is asthmatic?*		
49.	*our clinical time was very, very limited. So****, when I came out of varsity, I did battle a little bit clinically with some of the stuff****. (OHP5)*	*when I came out of varsity, I did battle a little bit clinically with some of the stuff*		
50.	***we had to do the first aid levels, and we had to do the medical emergencies, the private practice modules, practice management modules*** *and incorporated in that was the prescribing modules to prescribe medication. (PBD3)*	*we had to do the first aid levels, and we had to do the medical emergencies, the private practice modules, practice management modules*		
51.	*they get taught but that's the dept. of community dentistry, in their basic clinics.* ***I however teach them bleaching, the clinical procedure and the actual bleaching agent is taught by dr. B…. at this institution, where he shows them the material, they get familiar with it, and if they have a patient they can use that material to do vital bleaching****… they don't get taught non-vital bleaching and I teach them the theoretical knowledge. It taught with dental materials, where they more concentrating on the material and how it works. With me they get taught the process of manufacturing a bleaching tray, how its put into the patients' mouth, how you apply the bleach, I don't go into the chemical structure of the bleach, we just do; there's an oxidation process, there is a bleach, these are the different concentrations of*	*I however teach them bleaching, the clinical procedure and the actual bleaching agent is taught by dr. B…. at this institution, where he shows them the material, they get familiar with it, and if they have a*		

	the bleach, this is how you would apply it, this is how you place the tray into the mouth, this is how you remove the tray, this is the protective measures you have to do to protect the patients' gums, pot-op sensitivity and fluoride applications… that's what I do. I do the clinical procedure but the actual clinical is done in dental materials (DL4)	*patient they can use that material to do vital bleaching*		
52.	*the **practical was better, the theory we had lots of gaps** (OHP3)*	*practical was better, the theory we had lots of gaps*		
53.	*OH students have the **theoretical knowledge, definitely, because they get it in odontology, but the practical… doing it on patients I think that is a problem**, because some students will leave here without having done any of those or one or two (OHL1)*	*theoretical knowledge, definitely, because they get it in odontology, but the practical… doing it on patients I think that is a problem*		
54.	*theoretically definitely but as I've said, I don't know, and I've heard that complaint from UWC as well. But **they don't get the opportunity to practice...** Because even if you do it on a phantom head, you can do it 10 times on a phantom head, it's not the same as when you have saliva and other things and anxiety. (OHL1)*	*they don't get the opportunity to practice…*		
55.	*I don't feel it was adequate. What I, for instance, **learned about local anaesthetic and pharmacology is non-existent**. (OHP1)*	*learned about local anaesthetic and pharmacology is non-existent*		
56.	*I can't see this institution for example of training, **dental therapy students because there's just no the space there's not enough resources** (OHL1)*	*dental therapy students because there's just no the space there's not enough resources*		
57.	***they might've simplified things too much for us.** And they should've given us the same sort of education they gave the dentists because at the end of the day we still treat the same sort of patients. And we need to deliver some sort of service that's similar to each other. I think that's what they did lack a little (OHP2)*	*they might've simplified things too much for us.*		
58.	*our schedules are slightly different, so a (1st year) dental student would be exposed to the preclinical areas once a week, and it's not a lot of time for you to see and for you to be exposed to that one term, that one instrument as opposed to an OH student that would be exposed to that same instrument 3 times or four times in a week. Which obviously gets the **OH students at a better level of understanding and familiarity with their profession and everything that has to do with the clinical aspects** than a BDs student would. (OHL4)*	*OH students at a better level of understanding and familiarity with their profession and everything that has to do with the clinical aspects*		
59.	*There were some differences like there were some subjects that they do that we don't do at all. But quite a few of our subjects were actually exactly the same. Like our **local anaesthetic theory and practical was the same**. Our x-ray course was the same in that we did, first year we did radiation physics, second year was like techniques and third year was diagnostics. But we did all these things earlier on in the course than the dentistry students (OHP5)*	*local anaesthetic theory and practical was the same*		
60.	*some dentistry students come to me and say, "I'm going to write this test on radiation next week, will you please help me? Because you guys have already done it." And then we would help them with some stuff. So, **some of it really was identical and I don't think the dentists**	*some of it really was identical and I don't think the dentists realised*		

	realised that. And it's like they think we don't really know but like we really literally did the same course *to point where the tests were pretty much the same (OHP5)*	*that. And it's like they think we don't really know but like we really literally did the same course*		
61.	*a fissurerotomy you take a very fine bur.... So very, very fine bur in a fast-hand piece. And you basically cut out the fissure, you cut out, you don't just etch and seal... you cut out the fissure, you open it up and then you put sealant in I think that's fair enough.* ***I think that if the oral hygiene has been well trained... I don't see why an oral hygienist can't do it****" (DP3).*	*I think that if the oral hygiene has been well trained... I don't see why an oral hygienist can't do it*		
62.	*the current* ***lecturers had to be in alignment with the new scope of practice, because some of them hadn't done PRR, LA*** *etc. (DL2)*	*lecturers had to be in alignment with the new scope of practice, because some of them hadn't done PRR, LA*		
63.	*Nobody's going out there, you're prepared. He's needed out there, that kind of thing. And, in my opinion, what I would be happy with is having more dental chairs, more resources for training, the curriculum is fine. The* ***theory is fine, a little more practice, would benefit students*** *and I think that's throughout South Africa. The time for practice the money for clinical practice is an issue material (DTL2)*	*theory is fine, a little more practice, would benefit students*		
64.	*my mindset from my training was,* ***we follow the prescription of the dentist you do not... you do not work autonomously****... If I can put it that way. You don't make decisions that autonomously, the Scale and Polish the decision of the dentist, everything is the decision of the dentists" (OHP8)*	*we follow the prescription of the dentist you do not... you do not work autonomously*	**8.3.3 I have to make the decision myself**	
65.	*I was thrown into the deep end there and* ***I don't think I was prepared for any of that adequately*** *(OHP8)*	*I don't think I was prepared for any of that adequately*		
66.	***Gaining competence will again happen in practice****, what we have done in the past is that we write a letter to the practitioner that they work for and we say… look the student has passed, they are certified to work on a patient, however, if they need your support please be there to provide it. In the 1st round, even though we had all the assessments, we made the OH go back and work under the supervision of their employer to do a further two or three clinical procedures, take photos of it, authorise it by the dentist and sign that he is happy with it and then they send it back to us, so that was a system of monitoring (HPCSA1)*	*Gaining competence will again happen in practice*	**26 quotes** **Contestations – 20**	
67.	*we teach our students to diagnose,* ***even if they can't specify what it is or if they see a nodule in the palate****, for instance, they don't know what it is but they will say, I've seen this nodule it's red, it's this size (OHL1)*	*even if they can't specify what it is or if they see a nodule in the palate*	**No contestations - 6**	
68.	*if you give people IPP,* ***you must at least have reskilled them****… because they don't have a support system where they are expected to refer… so based on your question, I think it's reasonable (DL2)*	*you must at least have reskilled them*		
69.	*"I've got full freedom here. So****, if I feel a patient needs to get splintered, I don't actually have to go through the dentist to give the patient that certain treatment. I have to make it myself; I have to make the decision myself****. But that's why I say, that's the type of knowledge that we lacked from varsity because we never got the opportunity to make such decisions by ourselves" (OHP2).*	*if I feel a patient needs to get splintered, I don't actually have to go through the dentist to give the*		

		patient that certain treatment. I have to make it myself; I have to make the decision myself		
70.	*if you're now **sitting in Timbuktu not close to the dentist or wherever you are you doing a PRR and you open up that pulp. What are you gonna do?** Put in a Calzinol and send the patient away, refer him or whatever... so it's difficult and then the dentist specifically giving the demo he actually says that you must have an x-ray machine, how can you decide even to attempt that PRR if you haven't looked at the x-ray. (OHL1)*	*sitting in Timbuktu not close to the dentist or wherever you are you doing a PRR and you open up that pulp. What are you gonna do?*		
71.	*in terms of empowering them and allowing them to be independent practitioners and do all the things they possibly can, **I think a lot of people feel it's the way forward because they don't have a choice** (OHP5)*	*I think a lot of people feel it's the way forward because they don't have a choice*		
72.	*They never taught us about how medical aids work. They never taught us a lot about how to affiliate with certain outside proprietors like banks and credit controllers and things like that. That's why I say, I feel the type of teaching we had never, **they never prepared us for private practice**. (OHP2)*	*they never prepared us for private practice*		
73.	*The **hygienists go into practice without enough confidence and feel that they have to consult the dentist on the procedures they perform**, "after doing that course you should be supervised for a while before being brought in independent practice and going out and doing fissure sealants yourself, because the first few I did I asked the dentist"(OHP8).*	*hygienists go into practice without enough confidence and feel that they have to consult the dentist on the procedures they perform*		
74.	***I don't think we were trained, as well, to to go out.** what I can remember, is my first week, and I had a patient who had rheumatic fever was allergic to penicillin, and was on warfarin. And there was another complication. So, I went to the doctor and said to the doctor, you know what, I don't know if I'm very quite capable of treating the patient, can she prescribe the meds and can I go on with the Scale & Polish they was also poor oral health, gross calculus, I was suspecting lots of bleeding, almost bordering ANUG... with these medical complications (OHP8)*	*I don't think we were trained, as well, to to go out.*		
75.	*Diagnosis **has always been in our scope for instance… but it's not necessarily what we wanted to hone as a skill**; to diagnose a patient because you have someone there that can do it for you. But when it was gazetted that you can now practice independently, I think that the emphasis for lecturers started changing (OHL4)*	*has always been in our scope for instance… but it's not necessarily what we wanted to hone as a skill*		
76.	*All I know that, you know**, I kind of learned all my dentistry, after I left in school.** So, and I'm sure that that's the case with a lot of people in this profession, whether they're hygienists or therapists, you don't experience a lot of the time when you get that. That's how it was with me... And if you really wanted to learn to do it properly. (DP4)*	*I kind of learned all my dentistry, after I left in school.*		

77.	***working for a therapist... you just do you know, things that you've been taught at school,*** *when you are working with the dentist you learn new things that the dentist do and then you notice a huge difference between your scope of practice and their practice. (DTP2)*	*working for a therapist... you just do you know, things that you've been taught at school,*		
78.	*So,* ***I had to make a plan and sort of, you know, get a way of getting the knowledge****. Which I still don't know any clue about pharmacology. (OHP1)*	*I had to make a plan and sort of, you know, get a way of getting the knowledge*		
79.	***Local anaesthetic that I know of is what the dentist or friends in the industry helped me with****. By observing and going there, you know, out of your way to go and learn. But definitely not getting enough exposure and proper education in the course. (OHP1)*	*Local anaesthetic that I know of is what the dentist or friends in the industry helped me with*		
80.	***I remember being afraid to do my anaesthetics and then I picked up the phone and phoned the dentist and I said, "Can I come and just watch you and you watch me and inject?****" And he was quite happy to help me, (OHP4)*	*I remember being afraid to do my anaesthetics and then I picked up the phone and phoned the dentist and I said, "Can I come and just watch you and you watch me and inject?*		
81.	*Those are quite thorough because* ***we were actually lectured by the lecturers from those departments (anatomy and microbiology) in what it wasn't just general lecturers****, so it was quite in-depth and work very well done (DTP3)*	*we were actually lectured by the lecturers from those departments (anatomy and microbiology) in what it wasn't just general lecturers*		
82.	*what the independence gave from those who qualified with the 2013 scope vs. the 2000 scope… was that now you could practice independently. So as much as a lot of the procedures were in our 2000 scope,* ***they were not necessarily taught or probably even practiced from an independent clinicians' point of view because you always had supervision*** *(OHL4)*	*they were not necessarily taught or probably even practiced from an independent clinicians' point of view because you always had supervision*		
83.	*I think we should teach students what's relevant to their scope of practice, exit level outcomes in private sector. Because you are teaching them the ideal procedure here on the ideal patient, yet when they go out they have to learn to think outside the box which we should be doing here. This is the environment where you help them to think outside the box and practise outside of the box. So, I don't think that we should be giving them simple* ***cases, here we should give them complicated cases here and when they go out there they are competent and they can handle it because they are not experiencing it for the first time*** *(DL4)*	*cases, here we should give them complicated cases here and when they go out there they are competent and they can handle it because they are not experiencing it for the first time*		

84.	***they won't overstep my boundaries when it comes to seeing a patient or consulting a patient. They'll give me full freedom*** *to do that. They won't walk in and tell me that I don't know better than them. So, they have, we have a good mutual respect when it comes to a service being delivered to a patient. They don't doubt the type of service I give to a patient. So, whether I do a scaling, he won't want to come in and check on the scaling. Or to see if I've done a good scaling or if I've done a good filling (OHP2)*	*they won't overstep my boundaries when it comes to seeing a patient or consulting a patient. They'll give me full freedom*		
85.	*medical history, first of all, so* ***they've got to know all their conditions diseases, things like that, that will have an influence on their treatment medical emergency medications the patient possible effects.*** *high blood pressure medication dry mouth. Epilepsy medication, whenever, diabetes they have to take the patients' blood glucose levels, so the student has to know the full condition of diabetes and what is signs and symptoms and its clinical manifestations. Then they start and do an extra oral examination so they look at the face, they've lymph node. So look at the patient's hands. Overall, get an impression. The patient overweight underweight, whatever. then they go into the mouth they look at the soft tissues, palate, tongue, mucosa everything. then they go to the periodontium. They look at the gingiva, attached gingiva they measure the sulci, the attached gingiva. indicates if there is pockets or not... recession, mobility, calculus, all of that furcation, then they move on to the odontogram where they will chart caries, restorations, extractions any other things like abrasion, erosion, etc. Right. Then, they make a diagnosis, and work out a treatment plan and determine the patient caries risk and also look at psychosocial factors which can influence the treatment plan, and the patients' oral hygiene, then after that they present it to the lecturer.. (OHL1)*	*they've got to know all their conditions diseases, things like that, that will have an influence on their treatment medical emergency medications the patient possible effects.*		
86.	*I feel where I was trained,* ***they trained us to work in government they never trained u to work in private****. The type of work we do here is completely different to what I was trained for. (OHP2)*	*they trained us to work in government they never trained u to work in private*		
87.	***it's a business that we are running, not a clinic. So, we were never really prepared for it.*** *And I feel if we had a little bit more of exposure and a little bit of integration with the dentists, I think the industry might change a little bit. And our profession might be a little bit more respected in the industry (OHP2)*	*it's a business that we are running, not a clinic. So, we were never really prepared for it.*		
88.	*When I did my training was nearly two decades ago, so* ***I don't think that we were at all trained for independent practice at all****. (OHP8)*	*I don't think that we were at all trained for independent practice at all*		
89.	*when this course, was first designed, it was designed for this particular professional, oral health provider to actually be working in a public facility, whatever public facility may have been, whether it was military, or whether it was the government hospitals, or the clinics or whatever. But* ***it was not designed to work in private practice, in any form of private practice, whether it was with a dentist, or independent practice****, it was only designed to work in the public sector. (PBD3)*	*It was not designed to work in private practice, in any form of private practice, whether it was with a dentist, or independent practice*		

90.	*all professions had to be registered with SAQA. And **the Board had the, the task to write these qualifications and the minimum standards**. And we just did these qualifications with the rationale and, you know, all sorts of reviews in terms of what this qualification is supposed to look like in this context of South Africa. And I think that gave us the springboard to look at how best we can incorporate the hygienists into private practice and incorporate it into this document that we need to write the to the SA Qualifications Authority to register this particular profession, and the rationale behind why this profession is actually beneficial. (PBD3)*	*the Board had the, the task to write these qualifications and the minimum standards*	**8.3.4 first and second year. It's similar. I think it's the third year that's different** **32 Quotes** **Contestations – 21** **No contestations - 11**	
91.	*the three groups are separate here, **the curriculum does not talk to another curriculum**, its separate… (DL2)*	*the curriculum does not talk to another curriculum*		
92.	*it **is different because of the focus and the scope, for us OH and DT the 3rd year that when DT will differ, the dental curriculum it is completely different,** I know the modules in the 1st and 2nd year are the same, especially in terms of DT there has been a challenge … one needs to have those basic things… for the dental curriculum is quite different (OHL3)*	*is different because of the focus and the scope, for us OH and DT the 3rd year that when DT will differ, the dental curriculum it is completely different,*		
93.	*the **basic sciences are different, even though they all have anatomy, chemistry**… OH has these modules, they are similar modules but then the content is different…(OHL3)*	*basic sciences are different, even though they all have anatomy, chemistry*		
94.	*the **first year is very similar with dental therapy** in our eyes. (DTL2)*	*first year is very similar with dental therapy*		
95.	***first and second year. It's similar. I think it's the third year that's different**. So, with the first year, they do oral biology. Dental clinical practice, and it's similar, the second year, past even restorative materials, the hygienist does the similar cause the exam paper is different, because the scope is different. So, this, but they attend the same lectures, and the oral health clinical practice is the same for therapists and hygienists, but the final year is we change. And I think with the preclinical training in restorative it's different, but the rest is, is the same. (DTL2)*	*first and second year. It's similar. I think it's the third year that's different*		
96.	***DT program in the other institutions… it's not different, the only difference comes in their 3rd year**… when their expanded functions like XLAs and so on… where they start branching off to do that. And the OH would carry on in their prescribed scope. But I think that their foundational years are the same (OHL4)*	*DT program in the other institutions… it's not different, the only difference comes in their 3rd year*		
97.	automatically places in the mind of a dentistry student that their Anatomy course is better than the hygiene students' Anatomy course (DL1)	*places in the mind of a dentistry student that their Anatomy course is better than the hygiene students' Anatomy*		

98.	even with the current curriculum that we have … for example, **periodontology is more in depth for the BDS programme, than it is for the DT and OH** programmes." (DL2)	periodontology is more in depth for the BDS programme, than it is for the DT and OH		
99.	we had year meetings and curriculum discussions, module discussions we do every year, and with this past module discussion it came up that with **both OH and BDS students the lecturers identified that Pharmacology only comes in the 2nd semester, where they actually need a certain section of pharmacology to come right upfront so that the pharmacology related to LA is done earlier before they go into the clinics,** it was identified by the lecturers for both groups of students. We had a discussion with our Pharmacology lecturers on main campus and he has come in and lectured certain sections of pharmacology in LA to both groups to cover that gap. (OHL5)	both OH and BDS students the lecturers identified that Pharmacology only comes in the 2nd semester, where they actually need a certain section of pharmacology to come right upfront so that the pharmacology related to LA is done earlier before they go into the clinics,		
100	I do feel that **expanded functions course was adequate**. But I do also say that I've learned a lot from experience as well. (OHP6)	expanded functions course was adequate		
101	I think a lot more emphasis should be placed on practice management. (OHP1)	a lot more emphasis should be placed on practice management a lot more emphasis should be placed on practice management		
102	the only thing I would advise is that since oral hygienists are now able to practice independently**, they should consider offering a practice management type, of course, in business**, because when you jump in there is so much of, you know, you, you way out your, your cost of equipment, and material and all those things, but there's so many other hidden costs involved and, and dealing with patients with bad debts, and you know, those kind of things, it would be nice if if patient, even if the students themselves have to choose, but to have like a business course. (OHP6)	, they should consider offering a practice management type, of course, in business		
103	When it comes to **certain legalities with medical aid, I was not prepared for that at varsity.** There're certain protocols that you need to follow when it comes to medical aids. They expect a certain quality of service that you should deliver to the patients.(OHP2)	certain legalities with medical aid, I was not prepared for that at varsity.		
104	I feel also **I would love hygienists to be able to have a course which we can add onto our degrees or our diplomas of pharmacology**. That's where I would like us to go more into, pharmacology. (OHP4)	I would love hygienists to be able to have a course which we can add onto our degrees or our diplomas of pharmacology		

105	*in the first six months of the first year, because that provides him with a basic knowledge of everything that goes on. So they do* ***anatomy, microbiology, physiology pharmacology that during the second semester*** *(OHL1)*	*anatomy, microbiology, physiology pharmacology that during the second semester*		
106	*I think* ***pharmacology is one of those, that could be taught in a lot more detail,*** *I think various topics cover certain aspects of the applied pharmacology… but the actual pharma-kinetics and pharma-dynamics are not necessarily a huge focus (OHL4)*	*pharmacology is one of those, that could be taught in a lot more detail,*		
107	*I* ***don't think it's very different other than the fact that BDS students have 2years prior of basic sciences*** *that they would have done, they still have an entire block I think in 4th year of internal or surgical medicine that they do. But they have a lot of more basic sciences input and Pharmacology that they do as a full-on course in 4th year. but how much of that has also raised a lot of conversation and is very controversial as well… because the pharmacology that they are taught in dentistry is really taught by scientists, and how much of that is interpreted into your applied pharmacology and that would be applicable in your clinical and practical settings. So, it becomes… how much of pharmacology do dentists need to do to be competent in the procedures or in the decision-making for patients? (OHL4)*	*don't think it's very different other than the fact that BDS students have 2years prior of basic sciences*		
108	***it's a combined thing first year think the courses are the same modules are the same****. But then, with the hygienists in your second year. the clin dent they there was one more component that did in the specializing for the hygiene students this was when we had the hygiene course. (DTP1)*	*it's a combined thing first year think the courses are the same modules are the same*		
109	*If you take LOS which is our* ***LA, it's one of our modules it's not separate and that basically has your LA, your perio, that covers your expanded functions in 2nd year and it's integrated into 3rd year.*** *So, your expanded functions are incorporated into each of these and almost taken up into certain levels where they are introduced in the 2nd year to the theory and to preclinical and maybe they get to clinical in the 2nd year that golden thread goes through to the 3rd year. (OHL5)*	*LA, it's one of our modules it's not separate and that basically has your LA, your perio, that covers your expanded functions in 2nd year and it's integrated into 3rd year.*		
110	*we also have a preventive clinic where they basically perform all the procedures so it's like an integration of everything. So* ***even if they have to do like glass ionomer or a splinting or whatever it's all done in the preventive clinic and I think that is positive,*** *whereas the dental students work like restorative, prostho max fac etc.... You know, it's all seperate. With the oral hygiene students all comes together in the preventive clinic. (OHL1)*	*even if they have to do like glass ionomer or a splinting or whatever it's all done in the preventive clinic and I think that is positive,*		
111	*I don't think that there's anything wrong with the curriculum on paper. the outcomes that have been put on the other outcomes that are required for the competencies that we want the students to have, that's not, I don't think that's the problem. I think it's the implementation of how you teach what is on paper to students for you to get the desired outcome and the desired product with the competencies that you need. The interpretation of administration of local anaesthesia. On paper, it's written. The students need to have anatomical knowledge. Students have to have the lectures on you know LA the drug actions. They do all these things. All of that is on paper. So the curriculum*	*I don't think that there's anything wrong with the curriculum on paper. the outcomes that have been put on the other outcomes that are required for the*		

	itself look may actually look sparkling. However, the interpretation by lecturers of that and implementation in the classroom and in the clinic chairside teaching is where the disconnect happens, and then you see it in the outcome or in the product, or the competency skills that the students have, that something didn't happen. (OHL4)	*competencies that we want the students to have, that's not, I don't think that's the problem. I think it's the implementation of how you teach what is on paper to students for you to get the desired outcome and the desired product with the competencies that you need.*		
112	*if* ***you're not testing clinical reasoning as a therapist is because you probably don't think that the hygienist needs to be able to reason technically.*** *Do you think that the students are not supposed to make that clinical judgment?" (OHL4)*	*you're not testing clinical reasoning as a therapist is because you probably don't think that the hygienist needs to be able to reason technically.*		
113	*very* ***few lecturers that actually understand and are familiar with the curriculum*** *and what that states and what is intended. (OHL$)*	*few lecturers that actually understand and are familiar with the curriculum*		
114	*if you've been in the* ***academic in the, in any institution for many years you only using the knowledge that you were taught to continue in your competency skills or you know in your profession and a lot of majority of staff members have been taught under supervised practice. And in the diploma program and now obviously with all the programs having been converted to the bachelors and it I think the shift is not as natural*** *as it's supposed to be (OHL4)*	*academic in the, in any institution for many years you only using the knowledge that you were taught to continue in your competency skills or you know in your profession and a lot of majority of staff members have been taught under supervised practice. And in the diploma program and now obviously with all the programs having been converted to the bachelors and it I think the shift is not as natural*		

115	***Perio and Oral medicine… periodontology is done in 2nd year BOH2 and BDT2, they are grouped together in one lecture***. *Because we've looked at the scope of practice, we've looked at the exit level outcomes and we've looked at the module outcomes in terms of the knowledge they have they can do it together in 2nd year. In the 3rd year, they do oral medicine together…(DL2)*	*Perio and Oral medicine… periodontology is done in 2nd year BOH2 and BDT2, they are grouped together in one lecture*		
116	*In order for a hygienist to do a procedure in practice they need to know that I can do this, and refer these. The dentist needs to be aware as well, I should be referring this to the hygienist because I because she probably does it much better than I… Even though I have been trained to do it and its part of my scope but being able to recognise that someone else in the dental team can do it better… so, let them do it better. And that type of thinking should already come within the treatment planning sessions at Dental School. So, when you are doing a treatment plan and you looking at the different phases of treatment and the different departments that you need to be referring to, to sometimes include referral to oral hygiene. To this day, I* ***have never seen in a student's treatment plan refer to oral hygiene for S&P. They would always be referring the patient to a higher department like periodontology or they would do it themselves***. *Not recognising the ability of an oral hygiene student to do a particular procedure. And so, the change has to first occur in the mind-set of the educator before you can change the mind-set of the student.(DL1)*	*have never seen in a student's treatment plan refer to oral hygiene for S&P. They would always be referring the patient to a higher department like periodontology or they would do it themselves*		
117	*I don't think that there's anything wrong with the curriculum on paper. The outcomes that have been put on the other outcomes that are required for the competencies that we want the students to have, that's not, I don't think that's the problem. I think it's the implementation of how you teach what is on paper to students for you to get the desired outcome and the desired product with the competencies that you need. The interpretation of administration of local anaesthesia. On paper, it's written. The students need to have anatomical knowledge. Students have to have the lectures on you know LA, the drug actions. They do all these things. All of that is on paper. So the curriculum itself look may actually look sparkling. However, the interpretation by lecturers of that and implementation in the classroom and in the clinic chairside teaching is where the disconnect happens, and then you see it in the outcome or in the product, or the competency skills that the students have, that something didn't happen. (OHL4).*	*the interpretation by lecturers of that and implementation in the classroom and in the clinic chairside teaching is where the disconnect happens, and then you see it in the outcome or in the product, or the competency skills that the students have, that something didn't happen*		
118	*few lecturers that actually understand and are familiar with the curriculum (OHL4)*	*few lecturers that actually understand*		
119	*if you're not testing clinical reasoning as a therapist is because you probably don't think that the hygienist needs to be able to reason technically. Do you think that the students are not supposed to make that clinical judgment? (OHL4)*	*students are not supposed to make that clinical judgment*		
120	*As an academic in any institution for many years you only using the knowledge that you were taught to continue in your competency skills or you know in your profession and the majority of staff members have been taught under supervised practice. And in the diploma program and now obviously with all the programs having been converted to the bachelors and I think the shift is not as natural (OHL4)*	*majority of staff members have been taught under supervised practice. And in the diploma program and now obviously with all the programs having been*		

		converted to the bachelors and I think the shift is not as natural		

26 dentists, OH- 86, DT – 8

18 / 45 / 26 / 32 = 120

TOTAL 284

Appendix E: Regulations

Scope for dentists

REGULATIONS DEFINING THE SCOF

Scope for Oral Hygienists

1985 OH Scope.pdf

REGULATIONS_SCOPE_OF_THE_PROFES

oh scope 2013 exp functn letter.pdf

Scope for dental therapists



DT scope sept 2010.pdf



DTherapy scope 2016.pdf



government-gazett e-ZA-vol-566-no-356

Comparison of scopes

Occupation	Document	Scope changes
Dentists	**Regulations defining the scope of the profession of Dentistry** **Published under Government Notice R1201 in *Government Gazette* 21792 of 28 November 2000**	**Registration as a dentist in the category independent practice (general practitioner)** 2. (1) A person holding a qualification listed in the Annexure shall be entitled to obtain registration under the Act as a dentist in the category independent practice (general practitioner) if he or she has, before or in connection with or after obtaining the qualification concerned, complied with the requirements of subregulations (2) and (3). (2) The holder of a qualification referred to in subregulation (1) shall first have been registered in terms of the Act as - (a) a dental student and shall have completed the prescribed education and training as a dental student; (b) after the introduction of community service for dentists in terms of section 24A of the Act, a dentist to perform community service and shall have completed such service. (3) The holder of a qualification referred to in subregulation (1) shall - (a) submit his or her application in terms of section 17 of the Act for registration as a dentist in the said category to the board on an application form supplied by the board and duly completed; (b) subject to the provisions of subregulation (2)(b) and on completion thereof, submit a report issued by the relevant health authority as evidence that he or she has satisfactorily completed community service; and (c) pay the prescribed fee.

	Regulations defining the scope of the profession of Dentistry **Published under government notice R238 in *Government gazette* 31958 of** **6 March 2009**	**Scope of the profession** The following acts are hereby specified by the board under section 33 as acts which shall, for the purposes of the Act, be deemed to be acts pertaining to the profession of dentistry: (a) The physical clinical examination of the oral, maxillofacial and related structures of a person; (b) making a diagnosis of diseases, injuries and conditions of the oral, maxillofacial and related structures, including determining the relevance of systemic conditions, and/or giving advice on such conditions; (c) performing dental procedures and/or prescribing medicines aimed at managing the oral health of a patient, including prevention, treatment and rehabilitation; (d) performing any procedure on a patient aimed at fitting or supplying a dental prosthesis or appliance; and (e) performing any aesthetic or cosmetic procedure on a patient pertaining to the oral and peri-oral area. The provisions of regulation 2 shall not be construed as prohibiting- (a) a medical practitioner not registered as a dentist from performing, in the course of his or her practice, acts pertaining to the practice of dentistry in cases of emergency or where no dentist is readily available; (b) the employment by and under the supervision of a dentist of any person registered under the Dental Technicians Act, 1979 (Act No. 19 of 1979), for the purpose of making or repairing dentures or other dental appliances; (c) any person from making or repairing artificial dentures or other dental appliances for his or her own profit: Provided that such work is carried out on the instructions and to the order of a dentist and does not include the taking of any impression or bite or any trying or fitting in the mouth; or (d) a person registered in terms of the Act in respect of a profession related to the practice of dentistry from performing any act pertaining to the practice of dentistry under the control and supervision of a dentist. **4. Registration a prerequisite to practise** Any person who wishes to perform any of the acts referred to in regulation 2 shall apply in the prescribed manner to the board for registration as a dentist and submit proof of having complied with the prescribed requirements for such registration.
Occupation	**Document**	**Scope changes**
Therapists	**Regulations defining the scope of the profession of Dental Therapy** **Gov Gazette No. 33544** **R802 of 15 September 2010**	**2. The following acts are hereby specified as acts which shall, for the purposes of the application of the Act, be deemed to be acts pertaining to the profession of dental therapy:** (1) the examining of patients and the charting of their dental status; (2) the diagnosis and treatment of oral conditions; (3) the scaling, root planning, and polishing of teeth; (4) direct conservative procedures; (5) removal of teeth and roots under local anaesthesia; (6) the treatment of post extraction bleeding, alveolar *osteitis* and placement of sutures; (7) the application of primary preventative measures; (8) the treatment of minor traumatic injuries to teeth and surrounding tissues, including the splinting of teeth;

		(9) the taking of intra-oral and extra-oral radiographs for the purposes of performing those acts that pertain to the profession of dental therapy; (10) the prescribing of medication for the treatment of oral conditions relevant to the practice of dental therapy; and (11) the performance of any other aesthetic procedure within the dental profession. **Requirements for practice** A registered dental therapist may practice his or her profession subject to the following conditions: (1) he or she may only practise independently after serving a period of at least one year under the control and supervision of a registered dentist or another registered dental therapist, and with the approval of the Board; (2) he or she shall refer, to a dentist or dental specialists all cases of (i) pulpal exposure, excluding the emergency treatment thereof; and (ii) impacted teeth.
	Regulations defining the scope of the profession of Dental Therapy R706 in Government Gazette No. 35644 of **31 August 2012**	2. The following acts are hereby specified as acts which shall, for the purposes of the application of the Act, be deemed to be acts pertaining to the profession of dental therapy: (1) the recording of the dental history, the examination of patients, and the charting and diagnosis of their oral and dental status; (2) diagnosis and identification of extra -oral and intra -oral abnormalities and oral manifestations of other systemic diseases such as oral cancer and HIV/AIDS; (3) the recording of patients' medical history and the identification of risk cases that may complicate oral health treatment (4) the scaling, root planning, and polishing of teeth; (5) direct restorative procedures; (6) the non -surgical removal of teeth and roots under local anaesthetics and placement of sutures, where appropriate; (7) the treatment of post- extraction complications, amongst other, post -extraction bleeding and alveolar osteitis by placement of intra-socket medicaments and/or sutures and other local measures; (8) the application of primary preventive and therapeutic measures, including health promotion; (9) the treatment of minor traumatic injuries to teeth and surrounding tissues, including the splinting of teeth; (10) the taking of intra -oral and extra -oral radiographs for the purpose of performing acts that pertain to the profession of dental therapy; (11) the prescribing of medication for the treatment of oral conditions relevant to the practice of dental therapy and as prescribed in the approved list of medicines; (12) the performance of any aesthetic procedure within the ambit of dental therapy; (13) the taking of impressions for the purposes of bleaching and fabricating mouth guards and (14) adjusting and repairing oral applications 3. A registered dental therapist may practice his or her profession subject to the following conditions:

		(1) he or she may practise independently only after serving a period of at least one year under the control and clinical supervision of a registered dentist or another registered dental therapist registered in the category independent practice for at least three years and with the approval of the board; and (2) he or she shall refer, to a dentist or dental specialist, all cases outside the scope of the profession of dental therapy which may include; (i) pulpal exposure, excluding the emergency treatment permanent dentition and pulpal therapy of deciduous dentition; (ii) impacted teeth; (iii) malocclusion; (iv) the replacement of missing teeth, including the requirements for fixed and removable prostheses, or implants; or (v) oral and maxillofacial pathology.
	Regulations defining the scope of the profession of Dental Therapy. **Gov gazette No. 40414** **(1391)** **11 November 2016**	**Scope of the profession of dental therapy** 2. (1) The following acts are hereby specified as acts which shall, for the purposes of the application of the Act, be deemed to be acts pertaining to the profession of dental therapy: (a) the recording of patients' medical history and identification of medical risk cases that may complicate oral health treatment; (b) the recording of patients' dental history, the examination of patients, and the charting and diagnosis of their oral and dental status; (c) the diagnosis and identification of extra -oral and intra -oral abnormalities; (d) the debridement, scaling, non -surgical root planning, and polishing of teeth; (e) the direct restorative procedures; (f) the non -surgical removal of teeth and roots under local anaesthetics and placement of sutures, where appropriate; (g) the treatment of post- extraction complications, amongst other things, post -extraction bleeding and alveolar osteitis; (h) the application of primary preventive and therapeutic measures, including health promotion; (i) the emergency treatment of minor traumatic injuries to teeth and surrounding tissues; (j) the taking of intra -oral and extra -oral radiographs for the purpose of performing acts that pertain to the profession of dental therapy; (k) the prescribing of medication for the treatment of oral conditions relevant to the practice of dental therapy and as prescribed in Schedule 1, Annexure 2: Dental Therapists, published in Government Gazette No. 36827 of 13 September 2013, as amended from time to time; and (1) the performance of aesthetic procedure within the ambit of dental therapy. (2) A registered dental therapist must refer, to a dentist or dental specialist, all cases outside the scope of the profession of dental therapy which may include, but are not limited to- (a) pulpal exposure; (b) impacted teeth; (c) malocclusion; (d) the replacement of missing teeth, including the requirements for fixed and removable prostheses, or implants; or (e) oral and maxillofacial pathology.

		(3) Should a dental therapist not have received education and training in any of the acts referred to in subregulation (1), the dental therapist must undertake the appropriate training approved by the board, prior to undertaking any of such above acts. (4) A registered dental therapist may practise independently only after serving a period of at least one year under the control and clinical supervision of a registered dentist or another dental therapist registered in the category independent practice for at least three years and with the approval of the board.

Occupation	Document	Scope changes
Oral Hygiene	**Regulations defining the scope of the profession oral hygiene** **(R1729)** **9 August 1985**	The following acts shall for the purpose of the Act be deemed to be acts pertaining to the profession of oral hygiene: 1)Provisional examination, charting of conditions of the mouth with particular reference to the teeth and the periodontium, 2)Scaling, root planing and polishing of teeth including trimming and polishing of restorations. 3)Dental radiography 4)Topical application of agents appropriate to the practice of the hygienist, including caries preventive agents, tooth de-sensitivity agents, surface anaesthetics and plaque controlling agents 5)Application and removal of periodontal packs and other dressings 6)Removal of sutures and orthodontic appliances and the placing of pre-activated orthodontic appliances 7)Care of wounds related to dental treatment 8)Performance of intra-oral diagnostic technical procedures such as taking impressions for and casting of study models.
	Regulations defining the scope of the profession of Oral Hygiene **(R1150)** **17 November 2000**	The following acts shall for the purpose of the application of the Act be deemed to be acts pertaining to the profession of oral hygiene: 1)Provisional examination, charting of conditions of the mouth with particular reference to the teeth and the periodontium, 2)Scaling, root planing and polishing of teeth including trimming and polishing of restorations. 3)Performing dental radiography 4)Topical application of agents appropriate to the practice of the hygienist, including caries preventive agents, tooth de-sensitivity agents, surface anaesthetics and plaque controlling agents 5)Application and removal of periodontal packs 6) Taking impressions and casting of study models and primary work models 7) Placement of temporary fillings as an emergency measure prior to referral to a dental therapist or dentist 8) Temporary cementing of inlays, crowns and bridges 9) Placement of glass ionomer cement on sensitive dentine or cervical abrasion lesions 10) Placement of soft linings in dentures as tissue conditioners 11) Taking of cytological smears, for example to test for candida infections 12) Performing specified functions in orthodontics- a) cephalometric tracings, b) relief of trauma by intra- and extra-oral appliances, for example cutting distal ends of arch wires, c) the placement of pre-activated orthodontic appliances and the removal of orthodontic attachments and bands 13) administering of applicable local analgesia as appropriate to the scope of the profession of oral hygiene
	Regulations defining the scope of the	1)Developing, implementing and evaluating oral health promotion programmes 2) a) Assessment (i)assessing a patient by means of an interview and an oral clinical examination;

	profession of Oral Hygiene (for comment) **(R212)** **11 March 2011**	(ii)performing analogue and digital radiography and taking clinical photographs (iii)making impressions, cast, trim and polishing study casts b) diagnosis and treatment plan: making dental hygiene diagnosis and developing appropriate treatment plan within the scope of the profession of the oral hygienist c) Education and Preventive care (i) advising and educating patients about oral self-care practices including mechanical and chemotherapeutic plaque control, nutritional counselling and tobacco cessation; (ii) advising vitamins about dietary supplements, fluoride tablets, mouth rinses and other anti-microbial agents; (iii) applying topical agents such as caries-preventive agents, remineralising agents, tooth-desensitizing agents; surface anaesthetics and plaque-controlling agents; (iv) applying pit and fissure sealants; (v) performing scaling and root debridement, scaling of implants and polishing of teeth; making of a study cast to produce protective vacuum formed mouth guard d) Therapeutic care (i) placing and removing rubber dam and matrix bands, applying minimally invasive procedures such as traumatic restorative techniques (ART) and sealant restorations; (ii) treating dentine hypersensitivity and cervical abrasion lesions with glass ionomer cements (iii) polishing and raconteur overhanging restorations; (iv) applying topical anaesthesia e) Cosmetic care applying vital tooth bleaching (whitening) techniques and procedures 3) assisting dental therapists, dentists, dental specialists in the performance of basic and advanced clinical procedures 4) performing the following supportive clinical procedures as prescribed by dentists and dental specialists a) Periodontics: (i) Taking cytological smears (ii) splinting mobile teeth (iii) applying and removing periodontal packs (iv) removing surgical sutures b) Conservative dentistry and Prosthodontics: (i) placing temporary restorations as an emergency measure; (ii) performing temporary cementing of inlays, crowns and bridges; (iii) placing soft linings in dentures as tissue conditioners c) Orthodontics (i) performing cephalometric tracings; (ii) relieving trauma caused by intra-and extra-oral appliances, such as the cutting of distal ends of arch wires; (iii) taking impressions, cast and trim study and primary work models;

		(iv) placing pre-activated orthodontic appliances, removing of orthodontic attachments and bands (placing and removing elastics and ligature wires, placing and activating arch wires); (v) re-cementing orthodontic retainers Conditions of practice by an oral hygienist A registered oral hygienist may only practice independently, his or her profession: (1) After serving a period of at least one year under the control and supervision of a registered dentist, dental therapist or another oral hygienist, and with approval of the Board; (2) After obtaining any of the qualifications in oral hygiene approved by the Board, and if obtained prior to 2001, must have also obtained a further qualification in expanded functions in oral hygiene offered by any of the examining authorities approved by the Board; and (3) After successful completing a First Aid Level 3 training at a training institution approved by the Health and Welfare SETA.
	Regulations defining the scope of the profession of Oral Hygiene **Gov gazette No. 36944** **(R800)** **17 October 2013**	The following acts are hereby specified as acts which shall, for the purposes of the application of the Act, be deemed to be acts pertaining to the profession of oral hygiene: 1) developing, implementing and evaluating oral health promotion programmes 2) a) Assessment: (i) assessing a patient by means of an interview and an oral clinical examination, (ii) performing analogue and digital radiography and taking clinical photographs, (iii) making impressions, cast, trim and polishing study casts, b) diagnosis and treatment plan making dental hygiene diagnosis and developing appropriate treatment plan within the scope of the profession of oral hygienist, c) Education and Preventive care (i) advising and educating patients about oral self-care practices including mechanical and chemotherapeutic plaque control, nutritional counselling and tobacco cessation, (ii) advising vitamins about dietary supplements, fluoride tablets, mouth rinses and other anti-microbial agents, (iii) applying topical agents such as caries-preventive agents, remineralising agents, tooth-desensitizing agents; surface anaesthetics and plaque-controlling agents; (iv) applying pit and fissure sealants; (v) performing scaling and root debridement, scaling of implants and polishing of teeth; making of a study cast to produce protective vacuum formed mouth guard d) Therapeutic care (i) placing and removing rubber dam and matrix bands, applying minimally invasive procedures such as traumatic restorative techniques (ART) and sealant restorations; (ii) treating dentine hypersensitivity and cervical abrasion lesions with glass ionomer cements (iii) polishing and raconteur overhanging restorations; (iv) applying topical anaesthesia

		e) Cosmetic care applying vital tooth bleaching (whitening) techniques and procedures 3) assisting dental therapists, dentists, dental specialists in the performance of basic and advanced clinical procedures 4) performing the following supportive clinical procedures as prescribed by dentists and dental specialists a) Periodontics: (i) Taking cytological smears (ii) splinting mobile teeth (iii) applying and removing periodontal packs (iv) removing surgical sutures b) Conservative dentistry and Prosthodontics: (i) placing temporary restorations as an emergency measure; (ii) performing temporary cementing of inlays, crowns and bridges; (iii) placing soft linings in dentures as tissue conditioners c) Orthodontics (i) performing cephalometric tracings; (ii) relieving trauma caused by intra-and extra-oral appliances, such as the cutting of distal ends of arch wires; (iii) taking impressions, cast and trim study and primary work models; (iv) placing pre-activated orthodontic appliances, removing of orthodontic attachments and bands (placing and removing elastics and ligature wires, placing and activating arch wires); (v) re-cementing orthodontic retainers Conditions of practice by an oral hygienist A registered oral hygienist may only practice independently, his or her profession: (1) After serving a period of at least one year under the control and supervision of a registered dentist, dental therapist or another oral hygienist, and with approval of the Board; (2) After obtaining any of the qualifications in oral hygiene approved by the Board, and if obtained prior to 2001, must have also obtained a further qualification in expanded functions in oral hygiene offered by any of the examining authorities approved by the Board; and (3) After successful completing a First Aid Level 3 training at a training institution approved by the Health and Welfare SETA.

	Regulations defining the scope of the profession of Oral Hygiene **Gov gazette 40996** **R713** **21 July 2017**	The following acts are hereby specified as acts which may, for the purposes of the application of the Act, be considered to be acts pertaining to the profession of oral hygiene: (a) The development, implementation and evaluation of oral health promotion programmes; (b) The assessment of a patient by means of an interview and an oral clinical examination; (c) The performance of analogue and digital radiography and the taking of clinical photographs; (d) The making of an oral hygiene diagnosis and the development of an appropriate treatment plan within the scope of the profession of oral hygienist; (e) The advising and education of patients about oral self-care practices including mechanical and chemotherapeutic plaque control, nutritional counselling and tobacco cessation; (f) advising patients about nutrition and diet, fluorides, and anti-microbial agents (excluding antibiotics), in relation to oral disease prevention; (g) the application of topical agents such as caries-preventive agents, remineralising agents, tooth-desensitizing agents; surface anaesthetics and plaque-controlling agents; (h) the application of pit and fissure sealants; (i) the performance of debridement, scaling, root planing, the cleaning of dental implants and the polishing of teeth; (j) the making of a study cast to produce protective vacuum formed mouth guard; (k) the application of minimally invasive procedures such as traumatic restorative techniques (ART) and sealant restorations; and only when necessary to facilitate these procedures, the placing and removing of rubber dam and matrix band; (l) the treatment of dentine hypersensitivity and cervical abrasion lesions with glass ionomer cements; (m) the polishing and recontouring of overhanging restorations; (n) the application of topical anaesthesia (o) the administration of local anaesthesia; (p) the giving of assistance to dental therapists, dentists and dental specialists, with the performance of basic and advanced clinical procedures; (q) the application of vital tooth whitening techniques and procedures; and the performance of the following supportive clinical procedures, as prescribed by dentists and dental specialists; (i) the taking of cytological smears (ii) splinting of mobile teeth (iii) the application and removal of periodontal packs; and (iv) the removal of surgical sutures; (v) the placing of temporary restorations as an emergency measure; (vi) the performance of temporary cementing of inlays, crowns and bridges; (vii) the placement of soft linings in dentures as tissue conditioners (viii) the performance of cephalometric tracings; (ix) the relieving of trauma caused by intra-and extra-oral appliances, such as the cutting of distal ends of arch wires; (x) the taking of impressions, cast and trim study and primary work models;

		(xi) the placement of pre-activated orthodontic appliances, removing of orthodontic attachments and bands (placing and removing elastics and ligature wires, placing and activating arch wires); and (xii) the re-cementing orthodontic retainers Conditions of practice by an oral hygienist A registered oral hygienist may only practice independently, his or her profession: (a) After serving a period of at least one year under the control and supervision of a registered dentist, dental therapist or another oral hygienist, and with approval of the Board; (b) After obtaining any of the qualifications in oral hygiene approved by the Board, and if obtained prior to 2001, must have also obtained a further qualification in expanded functions in oral hygiene offered by any of the examining authorities approved by the Board; and (c) After successful completing a First Aid Level 3 training at a training institution approved by the Health and Welfare SETA. An oral hygienist registered in the category 'supervised practice', may perform acts referred to in regulation 2 - (a) Under the supervision of a dentists, dental specialist, dental therapist, or an oral hygienist; (b) Only if an oral hygienist referred to in this subregulation has received adequate education, training and is sufficiently experienced' and (c) under proper and appropriate conditions.

Assessment/ Diagnosis making/ treatment planning
LA or Topical anaesthesia / prescribing medication
Restorative/Bleaching
Scope – autonomy/supervsion