ATTITUDES OF ORAL HYGIENE AND DENTAL THERAPY STUDENTS REGARDING THE INTRODUCTION OF COMMUNITY SERVICE

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A research report submitted to the Faculty of Dentistry, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Public Health.

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DECLARATION

I, Ahmed Bhayat, hereby declare that this research report is my own work. It is being submitted for the degree of Master of Public Health at the University of the Witwatersrand, Johannesburg. It has not been submitted or presented for any degree or examination at this or any other university.

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ABSTRACT

Introduction: Compulsory Community Service (CS) for health professionals has been introduced in South Africa since 1997. Some of the aims for its introduction were to: 1) address the maldistribution of health service providers, 2) prevent qualified health professionals from emigrating and 3) improve clinical skills and knowledge of newly qualified medical graduates. The Oral Hygiene (OH) and Dental Therapy (DT) professions have as yet not been included in the performance of CS. However the Department of Health (DOH) is planning to introduce CS for these groups of health professionals in the near future. The role of the oral hygienist and dental therapist in South Africa (SA) cannot be over emphasized. Given the high caries levels, low oral hygiene education levels, large unmet oral health needs and the preventative approach of the DOH at all levels, the oral hygienist and dental therapist can provide invaluable human and technical resources that are currently required to address these concerns.

Aims: To assess the attitudes of OH and DT students registered during 2004 at the five dental schools in South Africa regarding the introduction of CS.

Objectives: 1) To obtain the demographic data of the OH and DT students, 2) to determine whether their current training programme prepares these students for CS, 3) to identify the provinces in which the OH and DT students would prefer to be placed for CS and 5) to identify the different types of professional activities that the OH and DT students would like to perform whilst completing CS.

Methods: A self administered questionnaire was jointly developed between the Kwa-Zulu Natal Department of Health and the Division of Public Oral Health at the University of Witwatersrand, Johannesburg. The questionnaire was sent to all OH and DT students who were registered at each of the five dental schools in SA during 2004.

Results: There were a total of 163 students (68%) who responded to the questionnaire. Of the respondents, 109 (70%) were OH students and 54 (64%) were DT students. There were 132 (81%) females and 31 (19%) males. The average age of the student's was 21 years (17-37; mode 19; median 20 and SD 3.2). There were 59 (36%) Whites, 53 (33%) Black, 31(19%) Asian and 18 (11%) Coloured students. The majority of OH students (63%) were against the introduction of CS. There was a significant number ($p<0.05$) of White students who were registered for the OH degree that did not want to perform CS. A significant number of respondents ($p<0.05$) felt that they were adequately trained to perform all the necessary duties that may be required of them during their CS. Most of the respondents chose Kwa-Zulu Natal (26%), Western Cape (26%) and Gauteng (22%) provinces respectively as their first choice province for carrying out their CS. The majority of students ($p<0.05$) chose their resident province as their first choice province in which they would prefer to perform their CS. Students indicated a preference to perform oral health promotional activities (56%), health educational activities (21%) and clinical work (18%) in their CS programme.

Conclusion: The majority of DT students supported the concept of CS. This was in contrast to the OH students where less than half of them supported its introduction. Overall, most of the students chose the more urban provinces (Kwa-Zulu Natal, Western Cape and Gauteng) to complete their CS.

DEDICATION

To my family, friends and colleagues for their help and support.

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DEFINITION AND ABBREVIATION OF TERMS

1. **Community Service – CS**: a year long compulsory service rendering programme for newly graduated health professionals.
2. **Oral Hygiene (OH)** : An oral hygienist is an allied oral health care worker whose core function is to educate and improve the oral health of communities
3. **Dental Therapy (DT)** : A dental therapist is an allied oral health care worker and forms part of the dental team
4. Department of Health – **DOH**
5. University of the Witwatersrand **- WITS**
6. University of Pretoria -**UP**
7. University of Kwa-Zulu Natal – **UKZN**
8. University of Western Cape - **UWC**
9. University of Limpopo – **UL**
10. Medical University of Southern Africa – **MEDUNSA**
11. Division of Public Oral Health - **DPOH**
12. School of Public Health – **SPH**

CHAPTER 1

1.1 Introduction

In December 1997, former State President of South Africa, Nelson Mandela signed the Health Professions Amendment Act which endorsed the concept of compulsory community service (CS) for all health professionals. The introduction of CS was to address the following issues (Department of Health, 1996):

- To improve the provision of health services to all citizens in South Africa
- To improve the clinical skills of newly qualified health professionals
- To allow the acquisition of knowledge and further their knowledge obtained from the universities
- To change behaviour patterns and stimulate critical thinking of newly graduated professionals
- To address the problem of the emigration of qualified health professionals
- To address the lack of doctors/dentists working in public service rural hospitals
- To develop clinical skills appropriate for practicing in rural areas and
- To increase the human resource capacity in the public sector.

CS is a year long service rendering period in which newly graduated health care professionals are placed at public sector facilities. The first group of medical doctors began their CS in 1998. In July 2000, CS was introduced for dental graduates and 173 newly graduated dental students began their one-year compulsory CS. The Department of Health (DOH) is planning to introduce CS for all other allied health professionals in the

near future. In keeping with these regulations, the introduction of CS for Oral Hygiene (OH) and Dental Therapy (DT) students will be implemented within the next few years.

The introduction of CS also attempts to address the maldistribution of health professionals which prevails within South Africa. CS has enabled newly qualified health professionals to be placed in rural, under served and poor communities thereby improving these communities' access to health care (Reid, Conco & Varkey et al., 1999; Clarke, 1998; Sankar, Jinabhai & Munro, 1997).

The National Oral Health Survey (NOHS) conducted in 1988/89 highlighted the shortage of human resources in relation to the oral health needs of South Africa. This shortage has been exacerbated by the introduction of free primary oral health services at Public Oral Health (POH) facilities since 1994. Since the introduction of free dental services at POH facilities, there has been an increase in patient attendances even though the human resources have remained almost the same (Harkinson & Cleaton-Jones, 2004; Bhayat & Cleaton-Jones, 2003). With the introduction of CS for OH and DT students, (in addition to dental students) it is assumed that the oral health needs of communities in South Africa will be addressed and the oral health status of these communities will improve.

1.2 Oral Health workers training

1.2.1 The Oral Hygiene (OH) degree/diploma in South Africa

The OH degree, a three year programme, is offered at the Universities of Limpopo (UL) (MEDUNSA campus), Western Cape (UWC) and Kwa-Zulu Natal (UKZN) while the OH diploma, a two year programme is offered at the Universities of the Witwatersrand (Wits) and Pretoria (UP). The differences between these two programmes are purely historic and the dental universities are currently trying to standardise the programme into a 3 year degree.

Once qualified, an oral hygienist is allowed to perform clinical procedures under the supervision of a qualified dentist or dental therapist. These procedures which are relevant to the South African situation are described Alvarez (1998):

- Dental examinations/consultations and treatment planning
- Referrals to dentist, dental therapist, dental specialist and medical doctors
- Scaling and polishing
- Preventive treatment, e.g. fissure sealants and fluoride application
- Oral hygiene instructions
- Taking of dental impressions
- Taking of radiographs, and
- Differential diagnosing of hard and soft tissue lesions in the oral cavity

Since 2003, the OH diploma/degree has included "**expanded functions**" which allows oral hygienists, who qualified after 2003, to perform additional procedures to those listed above. Some of these include:

- Minimal Intervention Dentistry (MID) of which Atraumatic Restorative Treatment (ART) is one of the components;
- the administration of local anaesthetics for pain relief during scaling procedures and
- the temporary re-cementing of crowns and bridges

Current Oral Hygienists, who have qualified prior to 2003, are allowed to attend courses at the dental schools to enable them to carry out "expanded functions".

1.2.2 The Dental Therapy (DT) degree in South Africa

The DT degree is offered as a four year programme at the Universities of Limpopo (MEDUNSA campus) and Kwa-Zulu Natal. Qualified DTs are able to perform the following procedures [University of Limpopo curriculum (1998)]:

- Dental examinations/consultations and treatment planning
- Referrals to dentist, dental specialists and medical doctors
- Dental extractions
- Dental restorations
- Scaling and polishing
- Preventive treatment (fissure sealants and fluoride applications)
- Oral hygiene instructions
- Taking of dental impressions

- Taking of radiographs, and
- Diagnosing of hard and soft tissue lesions in the oral cavity

1.3 Literature review

This review focuses on the oral health needs of the population of South Africa, international experiences of CS for health workers and the experiences of medical and dental graduates in South Africa.

1.3.1Disease profile and treatment needs

1.3.1.1 Disease profile of children

The World Health Organisation (WHO) set goals for oral health to be achieved by the year 2000 (National Oral Health Survey 88/89). Some of these goals specific for children were:

- 50% of 5-6 year-olds to be free of dental caries.
- The global average to be less than 3DMFT at 12 years of age

According to the 1999-2002 National Children's Oral Health Survey, the prevalence of dental caries in South African children, although low according to these World Health Organisations' standards, has still remained relatively high for some age groups (e.g. the caries prevalence of 60.3% for the 6-year olds). A major concern has been the large amounts of untreated caries that exists in young children and this varies between 45% and 60% amongst the nine provinces. The Western Cape has the highest amount of untreated caries with almost 80% of children requiring some form of oral health intervention such as extractions or restorations (van Wyk, 2004; du Plessis, 2000). The National Children's Oral Health Survey (van Wyk, 2004) reported that caries was much more severe in the primary compared to the permanent dentition and prevention of early childhood caries

must be a priority for all provinces. It further highlighted the variations in caries levels amongst the different provinces with higher caries levels occurring within the poorer provinces such as Northern and Eastern Cape.

Many reasons have been cited for this discrepancy. These include poor access to services, lack of education, the negative attitudes of parents and the shortage of resources [National Oral Health Survey (NOHS) 88/89]. The early extraction of primary teeth has been largely responsible for the increasing prevalence of malocclusion which was reported amongst the 15 year old South African children (NOHS, 88/89).

Early caries detection, prevention and treatment will not only reduce caries prevalence rates but will also reduce the consequences of caries (viz. extractions which often results in malocclusion) (van Wyk, 2004).

Dental caries present in young children could easily be treated by oral hygienists and dental therapists by using Minimal Intervention Dentistry (MID) of which the atraumatic restorative treatment (ART) would be the most practical and cost effective approach. The ART technique could also effectively be carried out in rural and remote areas with minimal equipment and resources making it an appropriate intervention tool for the treatment of dental caries (Motsei et al, 2001).

Gordon (2004), who analyzed the South African oral disease profile, suggested that most of the oral health problems in South Africa could be prevented and treated by oral hygienists and dental therapists.

1.3.1.2 Disease profile of adults

Adults in South Africa were reported to have had a high prevalence of gingivitis, periodontitis, shallow pocketing and the presence of calculus (du Plessis, 2000; NOHS, 88/89). The National Oral Health Survey concluded that these periodontal problems could be easily prevented through the support of a well organised primary health care system.

1.3.2 Interventions for caries prevention

The current high unmet oral health needs in South Africa can be partly addressed by the introduction of CS for DT and OH students (van Wyk, 2004). The results from the National Oral Health Survey in 88/89 showed that with the existing number of qualified dentists in South Africa, dentists alone will not be able to meet the dental needs of the population. By allowing the OH and DT students to perform CS, human resources will be increased and this could therefore contribute to meeting the oral health needs in South Africa.

According to the National Oral Hygiene Survey done by Gordon (2003), the majority (90%) of oral hygienists work in the private sector and although many of them would like to work in the public sector, there are insufficient funded posts available. By allowing OH students to complete a one year CS, it would increase the number of oral hygienists in the public sector and provide much needed human resources in addressing the oral health needs of South Africa.

1.3.3 Community Service at an international level

The CS programme in South Africa is similar to the system being used in Nigeria. In Nigeria, the National Youth Service Corps (NYSC) allocates all graduates from tertiary institutions to compulsory service for one year (Reid, 2000). Over 90% of these "Youth Corpers" are allocated to rural areas, which ensure an even distribution of health resources to all parts of the country. In this way, human resources from all academic institutions provide a valuable service to the rural and often neglected communities in Nigeria. The CS programme in South Africa is hoping to achieve a similar result with appropriate monitoring and evaluation of the services.

Cavender et al (1998) reported on the views of physicians who were performing their CS in Ecuador. His results confirmed those found by Reid (2000). The majority of the physicians in Ecuador completing their CS viewed their experience as both personally and professionally rewarding. However, many of them had expressed concerns about the logistical problems which had negatively affected them such as accommodation, technical resources and transport.

Internationally, dentists in the United Kingdom are compelled to carry out Community Service (vocational training) while other oral health workers such as oral hygienists and dental therapists are exempt. Dentists in the United Kingdom are keen to carry out their Community Service as more than 75% reported an improvement in their confidence and clinical skills (D'Cruz, 1998).

1.3.4 Community service in South Africa (medical students)

Reid (2000) has reported on the first two years (1998-2000) of community service for newly graduated medical doctors and found that the majority of them viewed their CS as a positive experience. They felt that they were "making a difference" to the communities they were serving and contributing in a positive manner towards their country.
The few doctors who expressed negative attitudes towards CS cited lack of functional equipment, supervision and resources. These problems/complaints were not unexpected, given the short duration of CS implementation and the lack of any form of infrastructure at a number of clinics. However, it was noted that the DOH is already trying to improve these shortcomings (Reid 2000).

According to the DOH (Strachan, 2000), the CS has attained its main objective; i.e. to provide more human resources and hence improve the quality of health care for all South Africans. More than 25% of CS doctors were being placed in rural areas, often where the demands are the greatest and the resources (human and technical) are the least adequate.

The majority of the staff working at the health care facilities where CS doctors have been placed have responded positively (Strachan, 2000). Many of them (mostly nurses), felt that the CS had helped to ease the workload burden at these health care facilities and provided much needed clinical skills. However, there still are a number of factors which need to be addressed before CS is completely accepted amongst staff and doctors alike.

1.3.5 Community Service in South Africa (dental students)

A study by Naidoo and Chikte (2002) documented the experiences of dental students after having completed their CS. The results showed that 54% of the dentists could speak the local language; almost half (45%) felt that the allocation process was not handled efficiently and 26% did not have access to telephone or fax.

Half of the students (52%) were provided with accommodation while the other half (48%) had to organise accommodation on their own.

In terms of the equipment and resources that were available; almost 25% of the dentists indicated that they did not have full sets of instruments; 10% did not have an autoclave or a high-speed handpiece while 50% reported that the equipment broke down often and was not fixed promptly. As a result of this, more than 90% felt that they needed a short course in equipment maintenance and repairs.

The authors concluded that these dentists responded with mixed feelings. On a positive note, almost two thirds said that they had enjoyed the work environment. However, more than three quarters (76%) felt that their clinical competence in some dental procedures (orthodontics, prosthodontics and restorative dentistry) had been reduced.

Holtshousen (2004), reported on the services that were being rendered by community service dentists in Gauteng. His results showed that these dentists performed predominantly extractions, restorations and fissure sealants as part of their clinical duties. Very little specialised dentistry (such as prosthodontics, orthodontics and endodontics) was being performed.

Dental therapists are adequately trained to carry out extractions, restorations and fissure sealants while and can therefore be utilized to perform these functions. This could then

provide an opportunity for dentists to perform more specialized procedures while completing their community service.

Harris and Zwane, 2004, examined the career satisfaction of community service dentists and showed that there had been a drop in career satisfaction during the year long CS. This confirmed the results of Naidoo & Chikte (2002) who reported that many of the dentists who had performed CS had problems with one or more of the many aspects involved in the planning, introduction and service rendering of CS.

1.4 Aims:

The aim of this study was to assess the attitudes of the undergraduate Oral Hygiene (OH) and Dental Therapy (DT) students at the five dental schools in South Africa regarding the introduction of compulsory community service (CS).

1.5 Objectives:

- To assess the attitudes of OH and DT students towards the introduction of CS
- To obtain demographic data of the OH and DT students
- To determine whether the current training protocols prepares the students for CS
- To identify the provinces in which the OH and DT students would prefer to be placed for completing their CS
- To identify the different types of professional activities that OH and DT students would like to perform whilst completing their CS

CHAPTER 2

Materials and Methods

This was a cross sectional descriptive study and all data was collected by means of a questionnaire.

2.1 Ethical clearance

Ethical clearance was obtained from the Wits Medical Ethics Committee in September 2004 (Appendix 1). The ethical clearance number is M040903.

2.2 Sampling

2.2.1 Study population

The study population consisted of 156 oral hygiene (OH) students who were registered during 2004, at the five dental schools in South Africa. The dental schools that offered the oral hygiene degree/diploma were the universities of: Kwa-Zulu Natal (UKZN), Limpopo (UL) (MEDUNSA campus), Pretoria (UP), Western Cape (UWC) and Witwatersrand (WITS).

The study population also comprised of the 85 dental therapy (DT) students registered at the two dental schools that offered the dental therapy degree in South Africa, the Universities of Limpopo (MEDUNSA Campus) and Kwa-Zulu Natal (UKZN).

2.2.2 Sampling calculation

The confidence levels were set at 95%. The sample size calculation was done using the Epi Info 2002 software system. The minimum sample required at a confidence level of 95% and an expected frequency for completing CS at 50% was 148.

2.3 Survey Instrument

A self administered questionnaire, together with an information sheet (Appendix 2) was sent to all students to obtain their demographic data and to elicit information about the introduction of CS. The same questionnaire was sent to both the OH and DT students.

2.3.1 Questionnaire

The Kwa-Zulu Natal Department of Oral Health and the Division of Public Oral Health (DPOH) in the School of Public Health (SPH) and School of Oral Health Sciences at the University of the Witwatersrand (Wits) jointly developed a questionnaire. The questionnaire consisted of seventeen closed and two open ended questions (Appendix 2). The questionnaire was made up of three parts. The first part consisted of questions regarding the students' demographics. This included: course of study, year of study, university, race, gender, residence and language. Students were asked to tick the appropriate boxes in order to obtain the information.

The second part of the questionnaire was based on the students' perceptions and attitudes regarding CS. It consisted of two open ended and four closed ended questions which examined possible reasons for either wanting or not wanting CS to be introduced. It included information regarding the province and area (rural or urban) where students would like to be placed, and also examined the option of incentives as a reward for placement of students into rural areas for completing their CS.

The last part of the questionnaire identified possible activities that students would like to perform whilst carrying out their CS. These activities included: clinical work, health

education programmes, health promotion programmes, school outreach activities, management and research. Students were asked to choose the activities they would like to perform and were allowed to choose more than one option.

Each of the five dental schools received the questionnaire with self-sealing envelopes. All students were given the questionnaire and one envelope and were asked to complete it. The students completed the questionnaire in the lecture rooms, placed them into the provided envelopes, sealed them and then handed them to the lecturer. To ensure anonymity and confidentiality, students were asked to place the completed questionnaire into the provided envelope and seal it themselves. All of the sealed envelopes were placed into a larger envelope and either posted or hand delivered to the DPOH at Wits. All of the data was collected over a two-month period, i.e. November and December 2004.

2.3.2 Statistical analysis

All of the data obtained from the closed ended questions was analyzed by means of descriptive statistics together with bivariate analysis using Epi Info 2002. The data from the two open ended questions were analyzed separately. The comparisons were done within and among both groups surveyed using student's t-test (t-test), Chi-squared tests(x^2) and correlation analysis (r^2).

CHAPTER 3

Results

The results for the oral hygiene and dental therapy students are presented separately.

3.1. Results for the Oral Hygiene (OH) students

3.1.1 Study sample

There were a total of 156 OH students registered at the five dental schools during 2004 and of these, 109 (70%) students responded to the questionnaire.

3.1.2 Distribution according to the dental schools

Table 3.1.1 shows the distribution of OH students according to their respective dental schools. The highest response rate (78%) was from UWC while the lowest was from UL (39%). There was a significantly lower ($p<0.05$) response rate (39%) from the University of Limpopo (UL) compared to the other dental schools (average of 73%).

Table 3.1.1. The distribution of OH students according to the dental schools (n=109)

	Dental school	Students-N	Response rate-N (%)
1	University of Western Cape (UWC)	59	46 (78)
2	University of Pretoria (UP)	50	35 (70)
3	University of Witwatersrand (WITS)	21	15 (71)
4	University of Kwa-Zulu Natal (UKZN)	13	8 (62)
5	University of Limpopo (UL)	13	5 (39)
	TOTAL	156	109 (70)

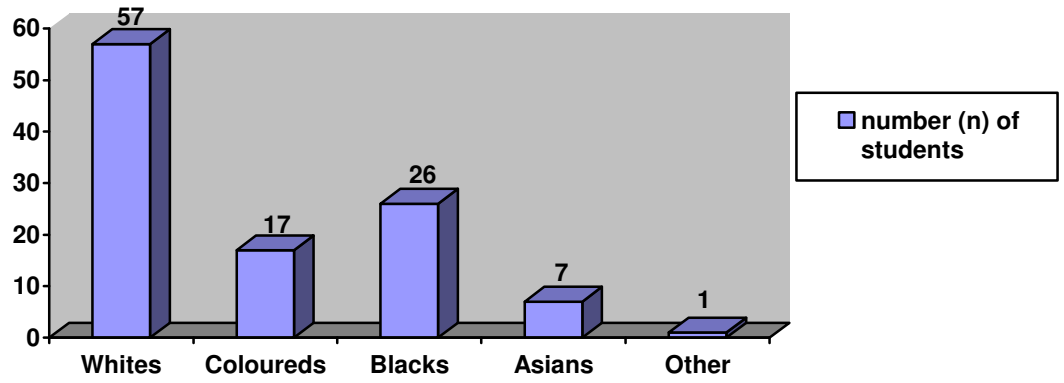
3.1.3 Demographic data

There were 109 OH students who responded to the questionnaire. Of these 7 (6.4%) were male and 102 (93.6%) were female.

The average age of the students was 21.4 years with a range between 18 to 37 years (Standard Deviation of 3.4). More than 80% (89) of the students were between 18 and 22 years old.

The racial breakdown of the students is shown in Figure 3.1.

Figure 3.1. Racial distribution of OH students (N=109)



The majority of the students were single-100 (91.7%), 5 (4.6%) were married; 1 (0.9%) was divorced and 3 (2.8%) responded with "OTHER".

Only 6% of the students had children. There were 14 (13.1%) students who had bursaries and just over half of all students, 50.5% (54) had a valid drivers license.

All of the students could speak and understand English. Some of the students were also fluent in Afrikaans (n=73), Zulu (n=10), Sotho (n=3) and Tswana (n=3).

All of the OH students were from South Africa. The majority of students, as shown in Table 3.1.2 resided in Gauteng and Western Cape (31%).

Table 3.1.2. The residential province of OH students

	Province	Number (N)	Percentage (%)
1	Gauteng	34	31.2
2	Western Cape	34	31.2
3	KZN	10	9.2
4	Mpumulanga	7	6.4
5	Free State	6	5.5
6	Limpopo	6	5.5
7	Eastern Cape	6	5.5
8	North West	5	4.6
9	Northern Cape	1	0.9
	Total	109	100

3.1.4. Responses towards CS classified according to the dental school

In Table 3.1.3, the attitudes of OH students (classified according to their dental school) regarding the introduction of CS is shown. More than half of all the students (53%) felt that CS should not be introduced. The majority of these students (80%) were from UP. Two thirds (75%) of students from UKZN felt that CS should be introduced. There was a statistically significant difference between the OH students from UP and their willingness to perform CS (x^2 =19.07, p=0.008) compared to the Oral Hygiene students from the other dental schools.

Table 3.1.3. Response of OH students towards CS according to their dental schools (N=108).

	Dental school	In favour of CS		Against CS		Total respondents
		N	(%)	N	(%)	N
1	UWC	30	(65)	16	(35)	46
2	UP	7	(20)	28	(80)	35
3	WITS	6	(43)	8	(57)	14
4	UKZN	6	(75)	2	(25)	8
5	UL	2	(40)	3	(60)	5
	TOTAL	51	(47)	57	(53)	108

3.1.5 OH students' attitudes towards CS by race, gender and resident province

Of the total 109 respondents, 108 answered the question relating to the introduction of CS. More than half of these respondents, 57 (53%) felt that CS should not be introduced. When these results were analyzed according to race, there was a significant number (x^2 = 42.251; p=0.001) of White students (83%) who felt that CS should not be introduced. This was in contrast to the respondents from other population groups (84%- Black, 82%-Coloured and 71%-Asian) who supported the introduction of CS. There was no significant relationship between the age of students (x^2=5.806; p=0.214) and their willingness to perform CS or their resident province (x^2=15.32; p=0.053) and their willingness to perform CS.

3.1.6 Attitudes towards CS amongst the OH students

These are some of the responses that students (53%) had listed for not wanting CS to be introduced:

- "Students are sent to areas far from home and this can be costly"
- "It becomes dangerous and risky to travel to remote and distant clinics"
- "Sufficient CS is carried out during their undergraduate studies in the form of Community Dentistry, school programmes, outreach programmes etc"
- "Safety and concern especially since most graduates are females"
- "Resources are inadequate and the health care systems are poorly organized"
- "OH is a two year (Wits and UP) diploma and CS should therefore be shorter
- OH is only a diploma course (2 years) (Wits and UP) and not a degree, therefore CS should only be for degree courses"
- "Students refuse to work for government sector and prefer to work in the private sector"
- "Students were not informed before starting their degree/diploma and hence cannot be forced to carry out CS"
- "For religious reasons"
- "Some have personal commitments and personal reasons"

The remaining 51 (47%) OH students, who felt positively about the introduction of CS, listed the following reasons:

- "CS will help disadvantaged communities by providing oral health services"
- "It will improve the levels of oral health and education in communities"

- "Students will gain experience and confidence"
- "Students will learn more about the country and the peoples cultures and beliefs"
- "Give back to the country and government"
- "It will provide employment opportunities"
- "Other health professional carry out CS and therefore OH students should also be doing the same"

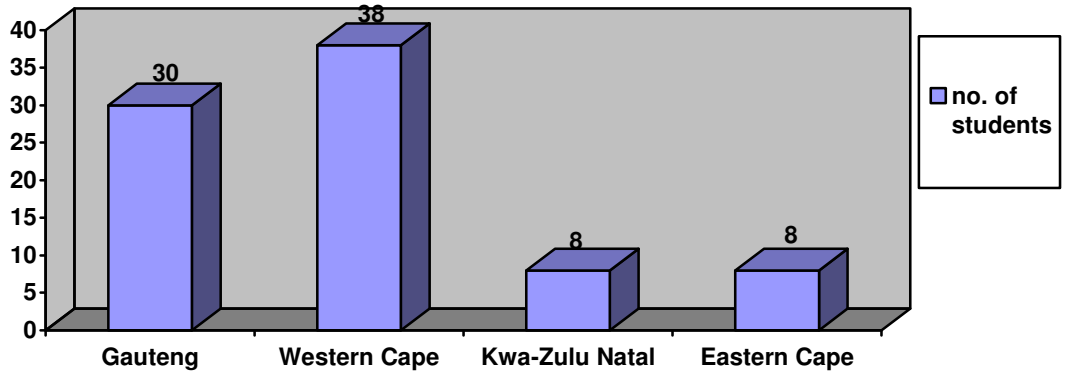
Even though only less than half (47%) of the OH students wanted to carry out CS, from the total number of OH students who responded (108), the majority of them 80 (74.8%) felt that by introducing CS, they will contribute to the health of the communities they will be serving ($p<0.05$).

The vast majority of students 95 (90.5%) were confident in the training that they received and were of the opinion that they would be able to perform the necessary duties whilst carrying out their CS ($p<0.05$)

3.1.7 Provincial preference for carrying out CS

Even though more than half (53%) of the students did not want to perform CS, almost 80% of all Oral Hygiene students responded to the questions relating to their placement within the provinces in South Africa. This is shown in Figure 3.2. Most of the students chose Western Cape (38) followed by Gauteng (30) as their first choice.

Figure 3.2. The provinces that were chosen by OH students for performing CS (N=84)



Almost 65% (68) of the respondents indicated that they would prefer to carry out their CS in an urban setting while the remaining 36% (38) wanted to do CS in a rural setting.

If incentives (accommodation and travel allowance) were provided, 62% of respondents wanted to perform CS in a rural setting ($p>0.05$).

3.1.7.1 Provincial preference for completing CS and the students' place of residence.

The majority of students, irrespective of whether they were willing to perform CS or not, preferred to perform CS in their resident province ($x^2=324.99$; $p=0.001$). This is listed in Table 3.1.4.

Table 3.1.4. The distribution of OH students according to their residential province and their preferred choice of province for performing CS.

No. of students who resided in each province	**Students first provincial choice for completing their CS**									
	KZN	Gauteng	N West	E Cape	W Cape	Limpo	N Cape	F State	Mpumu	Total
KZN	**4**	2	0	0	2	0	0	0	0	**8**
Gauteng	4	**21**	0	0	0	0	0	1	4	**30**
N West	1	0	**3**	0	0	0	0	1	0	**5**
E Cape	0	1	0	**5**	2	0	0	0	0	**8**
W Cape	1	6	0	0	**28**	2	0	0	1	**38**
Limpo	0	1	1	0	0	**3**	0	0	0	**5**
N Cape	0	1	0	0	0	0	**1**	0	0	**2**
F State	0	0	1	0	0	1	0	**4**	0	**6**
Mpumu	0	1	0	0	2	0	0	0	**2**	**5**
Total	10	33	5	5	34	6	1	6	7	**107**

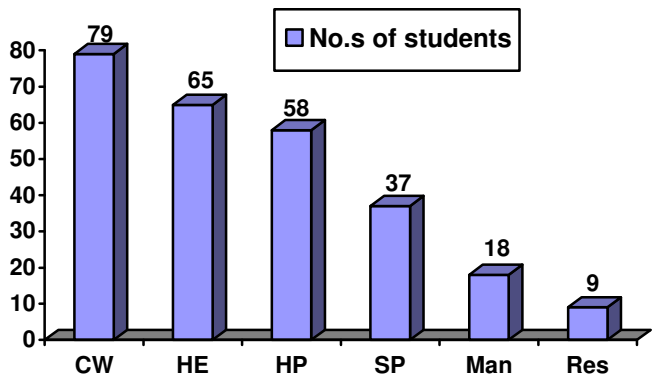
LEGEND

KZN= Kwa-Zulu Natal
N Cape = Northern Cape
E Cape= Eastern Cape
Mpumu= Mpumulnaga
Limpo= Limpopo
N West= North West
F State= Free State
W Cape= Western Cape

3.1.8 Professional activities students would like to perform whilst performing CS

Students were given the option to choose their preferred activities and were allowed to choose more than one option. Most of the students (76%) wanted to perform Clinical Work (CW), Health Education (HE) and Health Promotion (HP) activities combined. Some students also chose Management (Manage) and Research (Research) as shown in Figure 3.3.

Figure 3.3. Activities OH students would like to perform during CS (N=109)



Legend
CW=Clinical Work
HE =Health education
HP =Health promotion
SP = School programmes
Man=Management
Res=Research

3.2. Results for the Dental Therapy (DT) students

3.2.1 Study sample

There were a total of 85 DT students registered at the two dental schools for 2004 and of these, 54 (64%) students responded to the questionnaire. The other three dental schools do not offer a DT degree and therefore were not included in this part of the study. The overall response rate for the DT students (64%) was slightly lower compared to the overall response rate of the OH students (70%) but the difference was not statistically significant ($p>0.05$)

3.2.2 Distribution according to the dental schools

Table 3.2.1 reflects the distribution of DT students who were registered in 2004. It compares the response rate of the students in relation to the respective dental schools in

which they were registered. Although not statistically significant (p>0.05), there was a higher response rate (69%) from students at UKZN compared to those from UL (45%).

Table 3.2.1. The distribution of DT students according to the dental schools (n=54)

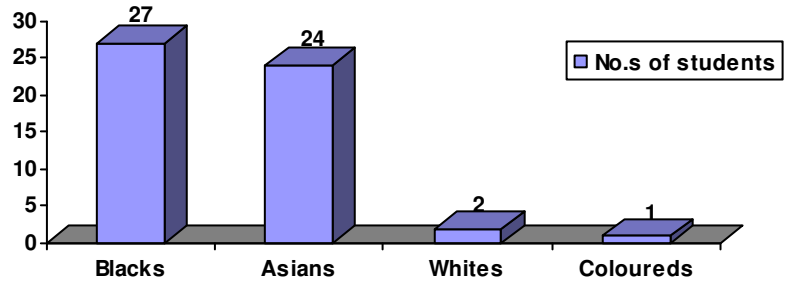
Dental school	Students (N)	Response rate N (%)
University of Kwa-Zulu Natal (UKZN)	65	45 (69)
University of Limpopo (MEDUNSA campus) (UL)	20	9 (45)
TOTAL	85	54 (64)

3.2.3 Demographic data of DT students

There were 54 DT students who responded to the questionnaire. Of these 24 (44.4%) were male and 30 (55.6%) were female.

The average age of the students was 20.3 years with a range between 17 to 29 years (Standard Deviation of 2.6). The majority of students (89%) were between 17 and 23 years. The racial breakdown of the students is shown in Figure 3.4.

Figure 3.4. Racial distribution of DT students (N=54)



Most of the DT students were single 53(98.1%).

Two (3.8%) DT students had children.

All of the students could speak and understand English. Some of the students were also fluent in Zulu (n=19), Afrikaans (n=9), Sotho (n=9) and Venda (n=2).

Ten (18.9%) students had bursaries and more than half of all the DT students, 56.6% (30) had no driver's license.

All of the DT students were from South Africa and resided in six of the nine provinces The distribution of their residence according to the province is shown in Table 3.2.2. The majority of students (74%) resided in KZN.

Table 3.2.2. The residential province of DT students

	Province	Number (N)	Percentage (%)
1	KZN	40	74.1
2	North West	5	9.3
3	Mpumulanga	3	5.6
4	Limpopo	2	3.7
5	Eastern Cape	2	3.7
6	Gauteng	2	3.7
	Total	54	100

3.2.4. Response towards CS classified according to the dental school

The majority of DT students (80%), irrespective of the dental school wanted CS to be introduced. This can be seen in Table 3.2.3.

Table 3.2.3. Response of DT students towards CS according to their dental schools (N=53)

	Dental school	In favour of CS		Against CS		Total respondents
		N	(%)	N	(%)	N
1	UKZN	36	(82)	8	(18)	44
2	UL	7	(77)	2	(23)	9
	TOTAL	43	(81)	10	(19)	53

3.2.5 DT students' attitudes towards CS by race, age and resident province

There was no significant relationship between the race of the DT students (x^2=1.77; p=0.623) and their willingness to perform CS. There was also no significant relationship between the ages(x^2=4,601; p=0.331) of the DT students or their resident province (x^2=2.967; p=0.705) and their willingness towards the introduction of CS.

3.2.6 Attitudes towards CS amongst the DT students

Over 80% (43) of all DT students felt that CS should be introduced. Their reasons for this, as indicated in the open ended question, included:

- "CS will help disadvantaged communities by providing basic oral health services"
- "It will improve the levels of oral health and oral health education in communities"
- "It will improve their clinical skills"
- "Students will gain experience and confidence"
- "Students will be exposed to rare clinical findings and diseases"

- “Learn more about the country and the people’s cultures and beliefs”
- “They would be able to give back something to the country and government”
- “Provide employment opportunities”
- “Other health professional carry out CS and therefore we should also be doing CS”

The reasons given by the remaining 10 (18.9%) DT students, who felt that CS should not be introduced, included:

- “The poor salary packages and financial incentives”
- “New graduates are sufficiently skilled clinically and CS “wastes” their knowledge”
- “Hinders the future career path of students as some want to study further”
- “Resources inadequate and health care systems are poorly organized”
- “Refuse to work for government sector prefers to work in the private sector”
- “Personal commitments and reasons”

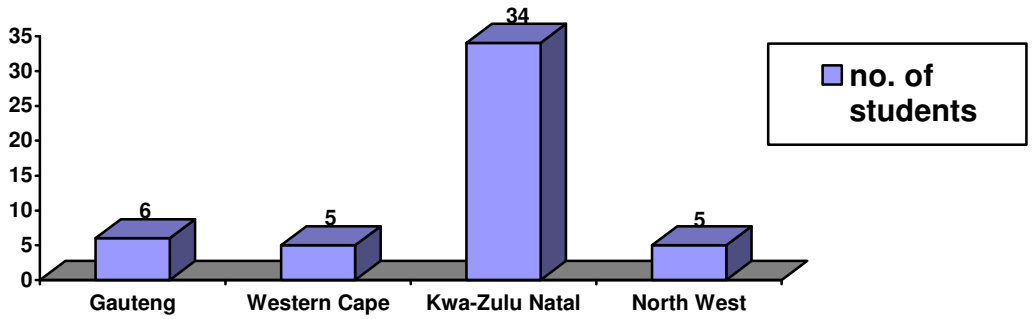
More than 90% (49) of all DT students were of the opinion that the introduction of CS will contribute to improving the oral health of the communities.

The majority of students 46 (86.8%) were confident in the training that they received and were of the opinion that they would be able to perform the necessary duties that would be required whilst carrying out their CS.

3.2.7 Provincial preference for carrying out CS

Although a few students (19%) were not willing to perform CS, almost all (93%) of the students completed the questions relating to the provinces in which they would like to be placed. This is shown in Figure 3.5. Most of the students chose KZN (34) as their first choice, followed by the North West (5) and Western Cape provinces (5).

Figure 3.5. The provinces that were chosen by DT students for performing CS (N=50)



The majority of students, 57.2% (30) preferred to carry out CS in a rural setting while the remaining 42.3% (22) preferred an urban environment. If incentives such as travel and accommodation allowance were provided, almost 90% of students indicated that they would perform CS in a rural setting ($p<0.05$).

3.2.7.1 Provincial preferences for completing CS and the students' place of residence.

Most of the students wanted to perform CS in their resident province (x^2=143.33; p=0.001) or in one of the urban provinces as shown in Table 3.2.4. For example, 33 (85%) out of 39 students who resided in KZN, wanted to perform CS in KZN.

Table 3.2.4. The distribution of DT students according to their residential province and their preferred choice of province for performing CS.

No. of students who resided in each province	**Students first provincial choice for completing their CS**									
	KZN	Gauteng	N West	E Cape	W Cape	Limpo	N Cape	F State	Mpumu	Total
KZN	**33**	2	1	0	3	0	0	0	0	39
Gauteng	0	**1**	0	0	0	1	0	0	0	2
N West	0	0	**5**	0	0	0	0	0	0	5
E Cape	1	0	0	**1**	0	0	0	0	0	2
W Cape	0	0	0	0	**0**	0	0	0	0	0
Limpo	0	1	0	0	0	**1**	0	0	0	2
N Cape	0	0	0	0	0	0	**0**	0	0	0
F State	0	0	0	0	0	0	0	**0**	0	0
Mpumu	0	1	0	0	0	0	0	0	**2**	3
Total	34	5	6	1	3	2	0	0	2	53

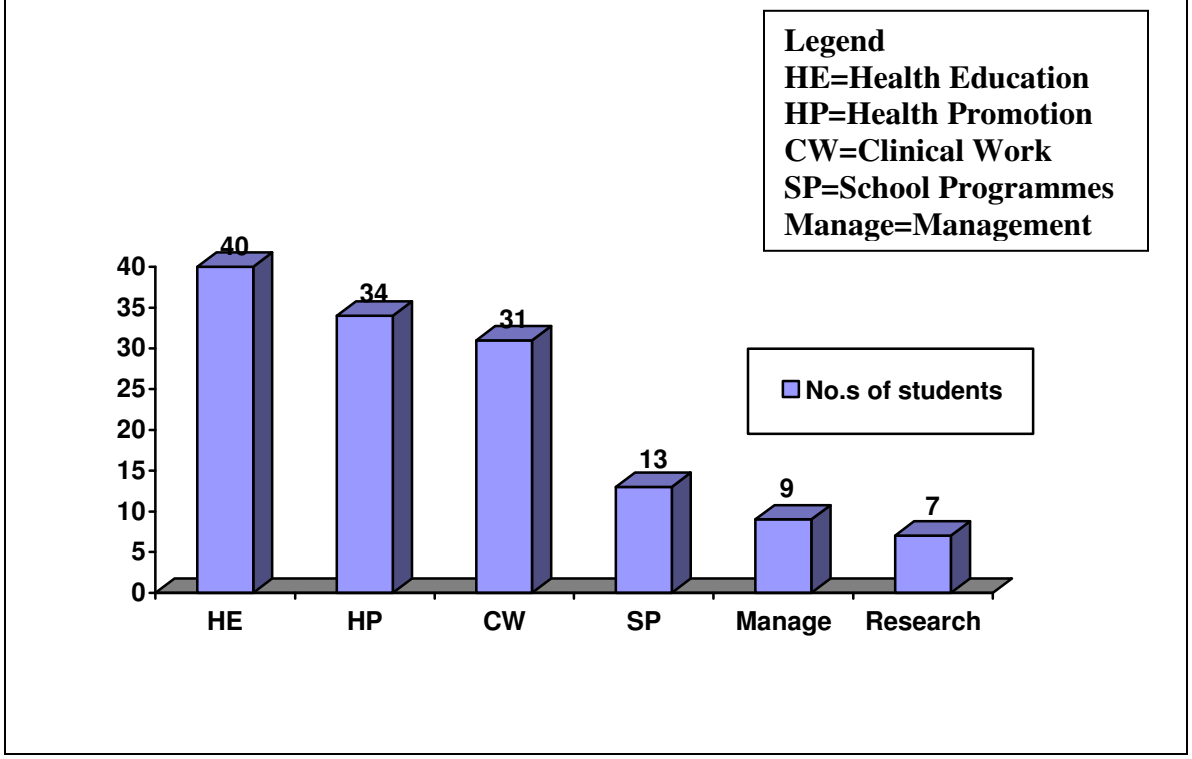
LEGEND

KZN= Kwa-Zulu Natal
N Cape = Northern Cape
E Cape= Eastern Cape
Mpumu= Mpumulnaga
N Cape= Northern Cape
Limpo= Limpopo
N West= North West
F State= Free State
W Cape= Western Cape

3.2.8 Professional activities students would like to perform whilst completing CS

Students were given the option to choose their preferred activities and they were allowed to choose more than one activity. All of the students responded (n=54) and most of them chose Health Education (HE), Health Promotion (HP) and Clinical Work (CW) as the activities that they would most likely want to perform. Other activities that students had chose included School Programmes (SP), Research (Research) and Management (Manage). This can be seen in Figure 3.6.

Figure 3.6 Activities DT students would like to perform during CS (n=54)



CHAPTER 4

Discussion

Response rate

There was an overall response rate of 68% (n=163) and this was more than the minimum sample (148) required for statistical significance (confidence interval 99%; population size 241 and expected frequency between 85-90%)

The response from the oral hygienists (70%) was slightly better compared to the dental therapists (64%). The response rate was however much lower than expected, given the captive target audience and the importance of this topic. This response rate was lower compared to other studies which evaluated students opinions on rural training and implementation of CS; Wynchank et al had a response rate of 86% from medical students registered at the University of Cape Town (UCT) (1991) and Azer et al had a 97% response rate from Australian medical students registered at the University of Melbourne (UM) (2001). Both of these studies evaluated the attitudes of students who were registered at a single university; i.e. UCT and UM respectively.

This study, done on the OH and DT students, included two different disciplines in dentistry (OH and DT) and was conducted among five dental schools in South Africa. These two factors could account for the lower response rate that was received.

The response rate from the University of Limpopo (UL) was significantly lower ($p<0.05$) than those from the other dental schools. This was investigated by the author who found that: poor co-operation (between students and person allocated to collect information); students writing tests/examinations; students being on study leave and students being absent as a result of studying for their exams contributed to this poor response rate.

Gender distribution

There were 132 (81%) females compared to 31 (19%) males in the total sample.

Since OH is traditionally a profession dominated by females, it was expected that the majority of students were females (94%) compared to male students (6%). These results compare favourably (99% females) with the National Survey of Oral Hygienists in South Africa done in 1999 (Gordon, 2004).

Students who were registered for the DT degree also consisted of more females (56%) than males (44%) but this gender difference was not as one-sided as the gender distribution for the OH students.

Racial distribution

The combined racial distribution (both OH and DT) was as follows: 36.4% White, 32.7% Black, 19.1% Asian and 11.1% Coloured. One student classified themselves as "OTHER".

The racial distribution for the OH students showed that there were more White students registered (53%), followed by Blacks (24%), Coloured (16%) and Asians (7%). The University of Pretoria (UP) had predominantly (86%) white students and the remaining 14% were black students. This university (UP) catered for only white students previously and the lectures were delivered in an Afrikaans medium. However, the university has gradually transformed its medium of lectures (since 1996) and this may encourage students of different races to start registering.

The University of the Witwatersrand (WITS) had 67% White, 20% Black and 13% Asian OH students. Even though more white students were registered compared to the other races, this racial distribution was not as skewed as that of the UP.

It is clear that UP and Wits have much to do in terms of transformation. Ideally the student racial distribution should reflect the demographics of the country or region. From the current student breakdown, there is an imbalance between the race of the students and the country's demographic profile reflecting a definite need for transformation of the student intake policies.

All the students registered at UL were Black. This is also not reflective of the needs of the country and UL should encourage students of all races to apply and make up their student numbers.

The University of the Western Cape (UWC) had 37% Coloured, 35% White, 24% Black and 3% Asian students. The student racial distribution at UWC is in keeping with the demographic profile of this region. The UWC needs to be commended for being the only dental school to regulate their intake of students to reflect a racial balance in keeping with the demographic profile for their region.

The University of KZN had 50% Asian, 38% Black and 12% White students. This dental school seems to be addressing the racial imbalances but should be accepting more Black students to reflect the demographics and needs of the province.

In summary, most of the dental schools (except UWC and UL) should make a conscientious effort to train more black OH students.

Half of the DT students were black (50%) followed by Asians (44%), Whites (4%) and Coloured (2%). This racial profile is much more reflective of the demographics of South Africa (SA) compared to the results form the OH students. However, efforts must still be made to ensure that students who are accepted to pursue a career in DT are more reflective of the demographic profiles prevalent in SA. Both dental schools (UL and UKZN) need to take in more White and Coloured students.

Studies in South Africa, (Chikte et al, 1996; Cleaton-Jones et al, 1996; Rudolph et al, 1995) which have monitored trends in the race of dental students have shown a change in the profile of newly qualified dentists. There has been an increase in the number of non-white students and female students and a reduction in the number of White males who have qualified as dentists in the past 5 to 10 years. Our findings support these results and suggest that similar trends might occur in the OH and DT courses.

Residence

Most of the OH students resided in the Gauteng (31%) and the Western Cape (31%) provinces. This was then followed by KZN (9%), Mpumulanga (6%) and Free State (6%). Only a few students resided in the Eastern Cape, Limpopo and Northern Cape provinces. This geographic distribution of the OH students' place of residence could be due to the following factors:

- The universities that offer OH are located in these provinces and students would like to study close to home

- The Gauteng, Western Cape and KZN provinces are more urbanized compared to the other provinces and students, while studying at the dental schools (located in these urban provinces) are exposed to "lucrative" opportunities and therefore would like to pursue their careers in Gauteng, Western Cape and KZN.

The DT students however, show slightly more variation in their places of residence. The majority of students (74%) resided in KZN, while the remaining students resided in North West (9%), Mpumulanga (6%), Limpopo (4%), Eastern Cape (4%) and Gauteng (4%). This poses a problem when placing students for completing their CS as most of them had indicated that they would prefer to complete their CS in their province of residence. Most of the students (OH and DT) resided in Gauteng, KZN and Western Cape (largely developed and urbanized provinces) and chose these provinces to complete their CS. Unfortunately, the need for CS graduates and their respective services are much higher in the rural compared to the urban provinces and therefore most CS students would be placed in rural areas (Reid et al, 1999; Clarke, 1998). This may lead to dissatisfaction amongst these students and perhaps result in problems with service delivery and morale.

The results from both the OH and DT students showed no significant association between the student's willingness to perform CS and whether the student resided in an urban or rural area in South Africa (x^2= 24.096; p=0.02). This was dissimilar to Australian medical students (Azer et al, 2001), who showed a significant association between their place of residence and their intention to perform CS. Azer reported that students, who

resided in rural provinces in Australia, were keener to perform CS compared to those students who resided in more urbanized areas.

Language spoken

The most widely spoken languages for both groups (OH and DT) was English (n=139), Afrikaans (n=82), Zulu (n=31), Sotho (n=16) and Tswana (n=11). This may be a problem when placing students in rural areas where the communities often speak a single language. However, it must be noted that all PHC clinics and hospitals have staff that could help in translating and communicating to the patients. The Department of Education (Policy on language, 2004) has also stressed that teaching should be done in English and hence when OH and DT students carry out school programmes, language barriers should not exist. However, language barriers will be a problem as English is neither the most commonly spoken nor the first language of many citizens in SA.

Introduction of CS

Just over half of all the OH students (53%) did not want CS to be introduced. However, the majority of students from UKZN (75%) and UWC (65%) felt that CS should be introduced as opposed to the students from UL (60%), Wits (57%) and Pretoria (80%). Of note was the significantly ($x^2 = 42.251$; p=0.001) high percentage (83%) of White OH students who did not want to perform CS.

A possible reason for this finding could have been that more than half of all of the White students (68%) had been registered at Wits and UP. Both of these dental schools offer a two-year diploma course and many students felt that a one-year CS would be unfair for

them. Some of these (diploma) students stated that CS should be shorter for them, perhaps 3 or 6 months only. It must be noted that there was a significant number of students (x^2 =19.07, p=0.008) from UP that did not want to perform CS compared to students from other dental schools.

Another possible reason could be that most of these White students resided in the more urbanised provinces (viz. Gauteng and Western Cape). This (province of residence) could have contributed to their negative attitude towards CS, similar to results obtained by Azer et al in 2001, in which he found that people residing in urban provinces were less likely to want to perform CS compared to those living in rural areas. However, this study's sample (both OHs and DTs) showed no significant association between their residence and their willingness to perform CS.

One of the most common reasons that OH students gave for their disapproval of introducing CS was their concern of their personal safety and belongings. Since most of OH students are female, this result was expected. The students listed fear of travelling alone, fear of rape, theft and assault as real and practical barriers to them completing CS. Many elaborated on their concern of living away from home, alone in rural settings which made them fearful and apprehensive. This is a real problem which will have to be addressed when placing CS students during their year long service. These reasons are similar to those found by other authors investigating CS (Naidoo, 2002; Azer et al, 2001 and Cavender A et al, 1998).

Another common reason cited for not wanting to carry out CS by the OH students was that they were not informed about CS when they registered for the degree/diploma. The

students had commitments and the introduction of CS would therefore impact on their future plans. Before implementing CS, students should therefore be made aware of its pending introduction and consequences in order to avoid possible complications when CS is introduced.

Conversely, the majority of DT students, 81%, felt that CS should be introduced. Of the UL students, 78% supported CS and there was an equally high percentage of support (81%) from UKZN students. This result is not surprising as the DT degree was actually created for the public sector. Many of them would want to work in the public sector and might have felt that CS may be a stepping stone to achieving a full time post.

The most common reason given for their support of CS was the fact that they would perform clinical work and this would improve their clinical skills and increase their confidence.

Another reason that the DT students provided was the contribution that they would be able to offer to the communities in specific and the government at large. The students felt that by performing CS, they could provide basic oral health care to rural communities and thereby improve the education levels regarding oral health. This in turn would decrease their need for oral health care services and promote healthier lifestyles.

Some of the DT students also stated that since the government had subsidized their studies, by performing CS, it would allow them an opportunity to “pay back” the government.

A few DT students stated that since other health professionals perform CS, their profession should also be compelled to do so. This would allow the dental therapy profession to be recognised by both other health professionals and the communities whom they would be serving.

These positive responses for the introduction of CS were similar to those given by medical and dental students as reported by Naidoo (2002), Reid (2000) and Strachan (2000).

Sankar et al (1997) reported that there were a significant number of medical students within his sample who were keen to perform CS provided they were not directly involved. This could be true for our sample of DT students. Although many of them agreed to perform CS, they were aware that CS would not be introduced for them. Therefore, even if they provided positive feedback towards the introduction of CS, they would be exempt from performing it and hence there responses could have been biased.

It must be noted, that all of the aims for the introduction of CS, according to the Department of Health (Department of Health, 1996), are not being met by the current dental students. The dental students have complained about the fact that they are not performing all of the clinical tasks they were trained to do and hence their clinical skills were not improving and in some instances getting worse (Holtshousen, WSJ, 2004). The majority of them performed mostly extractions and although their extraction skills had improved, other specialised skills (prosthodontics, endodontics and orthodontics) were being lost. If CS is to be introduced for OH and DT students in the future, the activities

these students will perform need to be tailored in order for them to derive maximum benefit.

The contribution to oral health by introducing CS

Both groups of students (oral hygienists and dental therapists) agreed that the introduction of CS will contribute to improving the oral health of the South African population. Almost 75% (80) and 92% (49) of the OH and DT students respectively, were of the opinion that CS could improve the oral health status and knowledge of the South African population.

Thus the majority of students realised the importance, necessity and positive benefits of the introduction of CS both for their profession and for the oral health of the communities.

These results have confirmed the results of other similar studies which have shown that after completion of CS, students have felt that they have helped and improved oral and general health amongst rural communities (Naidoo, 2002; Azer, 2001 and Cavender 1998).

The introduction of CS for the OH and DT students would increase the number of health professionals within the public sector and especially within the rural communities. This would add much needed human resources particularly in a health field (oral health) where resources are very scarce (Strachan, 2000; NOHS 88/89).

Besides the oral health needs being addressed, OH and DT students would also be able to diagnose and treat oral lesions associated with HIV/AIDS. Since the HIV epidemic has begun, numerous studies have shown the significance of the oral cavity in diagnosing and staging of the disease (Ranganathan et al, 2004; Paton, 2000; Arendorf et al, 1999). The students will be able to refer patients who have oral lesions associated with HIV for Voluntary Counselling and Testing (VCT).

The training of students for CS

The OH and DT students felt that they were adequately trained to carry out compulsory CS. Ninety one percent (95) of the OH students felt that they were capable of carrying out any procedure that may arise during their CS. These activities included oral health education, oral health promotion, clinical work, implementation and sustaining school programmes, research and management tasks.

Almost 87% (46) of DT students were of the opinion that their undergraduate training had adequately trained them to perform CS.

The high percentage of students, who responded in the affirmative, from both disciplines, was a positive sign and showed the confidence that the students had in their own ability. It was also reassuring for all those involved in the training and teaching of these students at the various dental schools.

Holtshousen (2004) showed that the majority of dentists who had completed their CS during 2003 had done mainly extractions and felt that their skills were not being fully utilized. If CS for OH and DT students is introduced, the “basic” dentistry (extractions and prevention) could be carried out by them and this would allow the dentists to carry

out more specialized dentistry. More human and technical resources would be available and prevention programmes could be improved. This could reduce the high caries levels that currently exist in South Africa.

Rural or urban settings

The majority of OH students, 64% (68), wanted to perform their CS in an urban setting. Possible reasons, obtained from the open ended questions, included many of them wanted to work near their place of residence; the students were afraid to travel and some were concerned about their safety.

Most of the OH students from UL (80%) and UP (82%) preferred the rural to the urban setting. The most common reason given by these students was willing to serve the poor and underprivileged communities.

More than half of the DT students, 57% (30) preferred to work in a rural area. They also were willing to serve the poor and rural communities and felt that by working in a rural setting they would be able to do more clinical work and educate the more deprived communities. This would prevent dental problems and help to relieve the shortage of human resources that currently exist within the rural public facilities.

Province to carry out the CS

As a first choice, most of the OH students chose to perform their CS in the Western Cape Province. The remainder of students chose Gauteng, KZN and Eastern Cape as their preferential provinces to perform their CS. The provincial choice was directly related to

their provincial place of residence. Almost all of the students chose their place of residence as their preferred choice for completing their CS.

The provincial preference also showed that many of the OH students wanted to work in the more developed provinces which they felt were better resourced and safer in terms of personal health and security. Most students, being female, were reluctant to work alone in rural areas where transport, residence and personal safety were cited as major concerns.

DT students' first choices were: KZN, Eastern Cape, Gauteng and Western Cape. Their choices of the preferred provinces were not as strongly linked to their place of residence compared to the OH students. This could be due to the fact that the majority of the DT students resided in rural provinces. Therefore, although a small percentage wanted to return home for the completion of their CS, the majority of students preferred to perform it in an urban setting.

The place of residence of students is therefore an important issue when selecting candidates for oral hygiene and dental therapy training in which graduates will be expected to perform CS. One must bear in mind that some students will want to practice in or close to their home province while others would want to remain in urban areas.

Incentives for CS

Sixty two percent (62%) of OH students felt that if incentives were provided to carry out CS in rural areas, they would be prepared to perform their CS in a rural area. This was five percent (5%) more than the original number of OH students who preferred completing their CS in rural areas when no incentives were provided. The incentives

were defined as the provision of free accommodation and a rural allowance (both monetary in nature). This showed that by increasing the monetary benefits, more students might be willing to complete CS in a rural setting. In the definition of "free accommodation", the authors did not specify the type of dwelling nor the facilities that would be provided. This lack of information could have affected the responses from some students as they would have preferred to stay at home having full knowledge of the facilities and environment that they would be residing in.

Other studies have showed that the accommodation facilities for CS doctors, dentists and pharmacists have been inadequate and unsafe (Naidoo, 2002; Reid, 2000 and Strachan, 2000). These results could have influenced the OH and DT students' responses.

The amount of money provided as a "rural allowance" was not disclosed and this could also have affected the students' responses. It is possible that the students would require private lodgings and frequent trips home which may be a distance, the addition of a rural allowance may not cover these additional expenses.

Almost all of the DT students (90%) were prepared to carry out CS in a rural area if incentives were provided. This was a statistically significant increase ($p<0.05$) from the original 57% who were prepared to perform CS in a rural area if no incentives were provided. This showed, similar to the OH students, that if incentives were provided, more DT students may be prepared to carry out CS in rural areas. This was consistent to other similar studies done on CS doctors (Nemutandani, 2005 and Reid 2001 and Wynchank 1993).

Activities to carry out during CS

The activities that OH students would most like to perform whilst completing their CS were (in decreasing order of frequency): Clinical work, Oral health education and Oral health promotion.

The DT students preferred to carry out (in decreasing order of frequency): Oral health education, Oral health promotion and Clinical work.

It was interesting to note that students from both professions (OH and DT) wanted to perform the same activities during their CS. It is possible that the students felt that these were some of the neglected areas within the primary oral health care package.

The lack of oral health education and promotion in both rural and urban areas are well documented (Hassam et al 2004; Maraj and Kroon, 2003) and it is possible that many of these students wanted to implement and sustain such cost effective programmes.

The fact that many chose clinical work as an option also indicated that these students wanted to gain clinical experience and improve their clinical skills. This was no surprise as many students from all health professions have expressed similar views (Reid, 2000; D' Cruz, 1998; Gordon, 2004).

The students did not suggest any other professional activities that they would like to perform during their CS.

Further comments

Some of the comments made by the students in the open ended questions included:

"I am being forced into CS, it is not democratic and fair, if they want to introduce CS, then no Community Dentistry and outreach programmes in under graduate years. They must inform students before they apply for course not while studying."

"I don't want CS to be implemented but know that it will benefit both me and my community."

"It's a win-win situation"

"We all need the exposure and experience"

"Please bring CS in now"

"CS must be in rural areas but where there are proper toilets, equipments and houses. It must be safe so that we can do our job properly."

These comments show the diversity of students and the range of responses that was received. It also provides an ideal opportunity in understanding the reasons for and against the introduction of CS for their profession.

Limitations of the study

1. Response acquiescence. Since these students were aware that they would not perform the CS themselves, they may be some reporting bias. They may provide results which indicate their keenness to perform CS whilst realising that they would be exempt. It is possible that if they were actually going to perform CS themselves, they might provide different responses.

CHAPTER 5

Conclusion and Recommendations

There was an overall response rate of 68% with the majority of respondents (81%) being female (81%). The average age of the students was 21 years with no significant differences ($p>0.05$) between the oral hygiene and dental therapy students.

The racial demographic distribution of the oral hygiene and dental therapy students included mostly White (36%); Black (33%) and Indian (31%) students with 18% being Coloured.

Almost two thirds (58%) of the students felt that community service should be introduced for their respective professions. Less than half of all of the oral hygiene students (47%) wanted to perform community service while the majority of dental therapy students (80%) were in favour of its introduction.

Almost all of the respondents (90%) were of the opinion that they were adequately qualified to perform community service.

Most of the students chose the more urbanised provinces such as Kwa-Zulu Natal (26%), Western Cape (26%) and Gauteng (22%) as preferential provinces to perform their community service.

The majority of students wanted to perform health promotional (56%) and clinical (18%) activities during their proposed year long community service programme.

It seemed that although the students were divided about their participation of community service, they had realized the importance and rationale behind its introduction.

The following recommendations were made:

1. Community Service must be introduced for both the oral hygiene and dental therapy students after first informing them, i.e. first years must be told about community service when they apply and /or register or during their orientation week.
2. The students should preferably carry out their community service in a rural environment.
3. All of the facilities in which these students will be placed should be adequately resourced with the minimum equipment (dental instruments) and staff (dental nurse).
4. The Department of Health must ensure that community service will be sustainable for the long term future at the clinics in which students will be placed.
5. The students should, if possible, be placed in provinces that they chose to be in or which are close to their province of permanent residence.
6. Students should be allocated to clinics/provinces which would facilitate and promote the activities that they prefer to perform.
7. The allocation of students to provinces in which they would be placed to perform their community service should be an open and transparent process.
8. The oral hygiene course should be standardized (either 3 or 2 years) at all of the five dental schools in South Africa.

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APPENDIX 1

APPENDIX 2