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A description of feeding practices with critically ill patients in the adult intensive care unit in the South African public healthcare sector

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A description of feeding practices with critically ill patients in the adult intensive care unit in the South African public healthcare sector

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Declaration

I, Kirsten Eckmann, student number 1156335, declare that this research report is my own work. All sources which I have used, referred to, or quoted have been indicated and acknowledged. This research report is being submitted to the Degree of Master of Arts in Speech Pathology, to the University of the Witwatersrand, Johannesburg. It has not been submitted to for any degree or examination, at any other university or institution.



12-03-2023

_____ _____

Signed Date

This thesis is dedicated in loving memory of

Werner Johannes Eckmann & Johannes Hermanus Bouwer

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Abstract

Introduction: Feeding critically ill patients in the Intensive Care Unit (ICU) is a complex process which requires a high level of clinical decision-making. Dysphagia in critically ill patients has become a recent topic of interest as research has found that dysphagia assessment and management within the speech therapy profession varies greatly.

Aims: This study aimed to research the feeding practices in the public healthcare ICU in Johannesburg, Gauteng with a special interest in the clinical decision-making process that takes place by the multidisciplinary team (MDT).

Method: A qualitative design with a nonprobability purposive sampling strategy was used. There were 15 participants across two sites. Data was derived from observations, focus groups and individual interviews in June 2022 and analysed using a deductive latent approach to thematic analysis.

Results: Six themes emerged namely, decision-making in the ICU, non-patient related factors, feeding the ill patient, tolerance, the MDT in the ICU and, the role of the speech therapist (ST) in the ICU. The findings revealed that decisions regarding feeding are made by the doctor, however the ST was involved when they were referred to see the patient. Non-patient related factors impact on the decisions and collaboration positively influenced the clinical decision-making process.

Conclusion: Results confirmed the lack of a protocol to inform the choice of mode of feeding. Clinical factors of the patient were however the main deciding factor, while environmental factors are also taken into consideration. Occasionally, the MDT would discuss their findings and come to a decision while the medical doctors, were more likely to make unilateral decisions.

Implications: This study will lead to further projects looking at developing a decision-making protocol that all the MDT in the ICU can use to make evidence-based decisions when selecting a mode of feeding for the critically ill patient.

Key words: clinical decision-making, dysphagia, feeding, intensive care unit, multidisciplinary team, South Africa

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List of Abbreviations

ARDS – Acute Respiratory Distress Syndrome

CDM – Clinical Decision-making

CMJAH – Charlotte Maxeke Johannesburg Academic Hospital

COVID-19 - Coronavirus Disease 2019

DT – Dietician

GCS – Glasgow Coma Scale

HJH – Helen Joseph Hospital

HPCSA – Health Professions Council of South Africa

ICU – Intensive Care Unit

MDT – Multidisciplinary Team

NGT – Nasogastric Tube

POPIA – Protection of Personal Information Act

PPE – Personal Protective Equipment

SA – South Africa

SANC – South African Nursing Council

ST – Speech Therapist

TOF – Tracheoesophageal Fistula

UK – United Kingdom

USA – United States of America

Introduction

This chapter introduces the research study. It includes an introduction to the project, a background, and literature review, the theoretical framework for the study and the rationale for the study.

Overview

The study focused on the decision-making process of the MDT working in the ICU, with regards to selecting the mode of feeding for the critically ill patient in the ICU within the SA public healthcare sector. The way in which the MDT make the decision of how and when to feed their patients was of particular interest as this decision has many consequences for the patients in mind, and this is discussed in the literature review (Schefold et al., 2017). This topic is important as there is currently little to no evidence on current practice in this regard within the SA context and it will be pertinent to understand how the decisions regarding feeding the critically ill patient are made, what factors are considered when making the decision and how the context i.e., public healthcare, impacts the decision-making process.

To obtain this information, the researcher conducted observations in two public sector ICUs in Gauteng and interviewed the members of the MDT involved on their role in the decision-making process and how or if the ICU in the public sector influences the decisions they make when it comes to feeding critically ill patients. The specifics regarding the observations and interviews will be discussed in depth under the methodology section of this document. The outcomes of this study will have an impact on the understanding of why and how clinical decisions are made when feeding critically ill patients in the ICU in the public healthcare sector in Gauteng.

Once the observations and interviews were concluded, the researcher used deductive thematic analysis in order to develop an idea of the overarching themes which emerged on the topic of the decision-making process when feeding the critically ill patient (Holloway &

Galvin, 2016). It was the goal of the researcher to obtain a comprehensive understanding of the factors that are used by the MDT when deciding how and when to feed the critically ill patient. Through this understanding, the researcher provided insight into contextual as well as clinical factors that impact this decision-making process and creates opportunities for further investigation on the topic of feeding the critically ill patient.

The literature review explores areas related to the topic of feeding practices in the adult Intensive Care Unit (ICU) within the South African (SA) public health context. The ICU is a complex environment and was explored in this study, with special attention paid to the feeding practices of patients in this environment. Caring for the critically ill patient is a complex task, these patients are in a vulnerable state which is why the decision-making process with regards to feeding in this environment is of particular interest a minor decision can have devastating consequences. The SA public healthcare sector will also be discussed, to explore any possible impact, the environment has on the decision-making process. The environment is also presented to give context to the study and to provide the reader with a better understanding of the factors that may affect decision-making processes. The literature review explores the complexities of both the ICU and the SA public healthcare sector and the importance of appropriate and safe feeding for critically ill patients (Zuercher et al., 2019). The literature review also discusses the medical conditions of patients in the ICU and their experience of the ICU, before describing swallowing disorders and the role of the speech therapist (ST) and multidisciplinary team (MDT) in the ICU internationally and in the SA context. Finally, a theoretical framework for the study is presented followed by a rationale for the study.

The term “feeding” which is used in the title and throughout this document, has been chosen as this word best describes and encompasses all the different modes of feeding which may be necessary to provide adequate nutrition to a critically ill patient. The word feeding has also been chosen as it adequately describes the process of giving nutrition to the critically ill, in the sense that they generally need to be fed by a nurse or a member of the MDT, or they may be fed via a nasogastric tube (NGT) or a percutaneous endoscopic gastrostomy (PEG), etc. Therefore, for the purpose of this study, the term feeding should be understood as all

routes of nutritional intake i.e., oral, enteral, and dual feeding, either independently or with assistance. This is discussed further in the dissertation, and this term was chosen instead of more commonly used terms such as swallowing or dysphagia, as these terms may be limiting in their definition (Schar et al., 2020).

Literature Review

This literature review provides a critical analysis of the current literature relating to this research topic, to provide the reader with the necessary background information to familiarise themselves with the topic and to understand the motivation behind the study.

Healthcare ICU in SA

A study that was conducted by Naidoo et al. (2013) in SA during 2008 and 2009 revealed that there were only 4 719 ICU beds available in the entire country in both the private and public healthcare sectors. Only 25% of those beds were found to be in public sector hospitals, which amounted to a total of 1 186 beds (Naidoo et al., 2013). Although this study was conducted 12 years ago, even if the number of beds have doubled or tripled in the past 12 years; with a population of almost 60 million people in SA (Diego & Munthree, 2020), the number of beds is still inadequate. In hindsight, approximately 84% of the population are not on a medical aid and require access to the underfunded and under resourced public healthcare sector, which amounts to roughly 50 million people (Diego & Munthree, 2020). According to this study, that would mean that there are 1 186 ICU beds available for approximately 50 million people who require access to the public healthcare system (Diego & Munthree, 2020). The remaining almost 10 million are on various medical aids and access the better funded private healthcare sector (Statistics South Africa, 2017). The issue of limited ICU beds became even more of a concern in the beginning of 2020 when the world was facing

the coronavirus disease 2019 (COVID-19) pandemic and there was an increased need for hospital and ICU beds (Wadvalla, 2020). The SA COVID-19 Modelling Consortium estimated the need for roughly 20 000 – 35 000 ICU beds between June and November of 2020 due to the pandemic (Naidoo & Naidoo, 2021). It is thus not inconceivable that in a country like SA with pre-COVID-19 healthcare inadequacies, the medical challenges have been compounded with the entry of COVID-19, given its' symptomatology which often requires ICU care. The public healthcare system was also impacted due to a shortage of personal protective equipment (PPE), limited hospital and ICU beds, increased mortality, mental health burden on the healthcare workers and a resurgence of non-communicable diseases (Mbunge, 2020). Although, the current study did not explore the impact of COVID-19 only, it did look at the unique contextual factors which make up this environment and how the MDT make decisions around these factors, which includes the impact that COVID-19 had on the public healthcare sector in SA.

Due to the high number of COVID-19 cases in SA, there was pressure on the ICUs in the public healthcare sector (Wadvalla, 2020). Unfortunately, a lack of ICU beds was not the only concern for the public healthcare system, some of the other challenges included decrepit infrastructure lacking maintenance, understaffed hospitals and clinics, minimal funding, long waiting times for patients, and inadequate medical equipment and care (Maphumulo & Bhengu, 2019). Due to these factors, the current study focused on ICUs within the public sector as it is currently unclear if the challenges that impinge on the public healthcare sector, also influence the decisions taken within the critical care and ICU environments.

HIV in SA also takes a toll on the ICU as many of these patients may require lengthy stays in the ICU when and if they do become critically ill, adding additional strain to an already strained system (De Beer et al., 2011). The MDT working in the ICU must take all these additional considerations which have been discussed here into account when deciding on a plan of care for their patients.

The ICU environment



Figure 1

A critically ill patient in ICU

Cotogni, P. (2017). *Management of parenteral nutrition in critically ill patients*. [Photograph]

Figure 1 above can help to clarify some of the complexities involved in treating a critically ill patient. It provides a mental image of an ICU bed and the patient amidst the many equipment. The ICU is designed for patients who require intensive treatment, it is the place where someone in a critical condition will receive life supporting care (Marshall et al., 2017). Patients in the ICU may have planned admission after a scheduled surgery, or they may be admitted suddenly after an accident or rapid decline in their health. Every ICU will look slightly different depending on the type of speciality that each unit is set up for. As seen in Figure 1, each bed is equipped with specialized ICU bedside monitors, ventilators, endotracheal tubes, intravenous infusion pumps, syringe drivers, NGTs, indwelling urinary catheters, resuscitator bags, central venous catheters, blood pressure cuffs, saturation monitors, and sequential compression devices in order to care for and monitor patients requiring critical medical treatment (Marshall et al., 2017).

There are different types of ICUs, the cardiothoracic unit, for patients who have undergone heart surgery, surgical ICUs, which are reserved for post-surgical patients, medical ICUs for patients who are critically ill and neurosurgical ICUs, for patients who have undergone brain surgery, amongst others (Marshall et al., 2017). As opposed to regular hospital wards, there are usually more medical staff than patients in an ICU as each patient usually has a dedicated nurse, there are multiple doctors, allied health staff, administrative staff and cleaners readily available (Marshall et al., 2017). Higher nurse to patient ratios are linked to better patient outcomes as a higher workload in understaffed units can often lead to medical errors due to increased pressure on the staff (Sharma & Rani, 2020). Regardless of the context, whether it be private or public, the ICU environment may be stressful and intimidating for someone who is not accustomed to the loud noises from the monitors and machines, the condition of the patients and the number of people around. As seen in Figure 1, the patient is usually connected to a ventilator, pulse oximeter and other monitors as mentioned earlier (for vital signs, intracranial pressure and brain activity). They may be connected to intravenous lines and feeding tubes, many of these patients will also be restrained to prevent them from pulling out any of these wires and tubes, it is a complex, emotionally charged environment (Heyhoe et al., 2016). It is therefore important to understand the aspects of the environment in which the MDT must make critical decisions regarding their patient's care.

ICU patients and their families

The underlying reason for patient admission to the public sector ICU in SA is slightly different than in other more developed countries, a study by Wise et al. (2017) in SA found that the majority (73%) of ICU admissions were due to an emergency and the other 27% were elective. Of the 73%, almost half (49%) were admitted due to non-communicable diseases, 29% were due to trauma and 21% due to infectious diseases (Wise et al., 2017). Notably, high levels of violent crime lead to more prominent numbers of trauma cases in the SA ICU. In other more developed countries, the main underlying reason for ICU admission is usually post

major surgeries and then also due to emergencies such as vehicle accidents or acute burns (Wise et al., 2017). In a slightly older study by De Beer et al. (2011) also in SA, found that more than half of the public healthcare sector ICU patients were male and the majority of cases were due to violence and crime such as gunshot wounds, stabbings and motor vehicle accidents, all of which are usually life-threatening cases often leading to the need for critical care (De Beer et al., 2011). Interestingly, in the same study De Beer et al. (2011) found other contributing causes for ICU admission; which were medical, infectious diseases, gynaecological and post-surgery which can be attributed to the quadruple burden of disease. Most recently, COVID-19 has been another reason for patient admission to the ICU, hospitalised patients with COVID-19 have a high risk of critical illness and acute respiratory distress syndrome (Goh et al., 2020). The ICU is intended for the critically ill, which means that patients need constant monitoring and the highest level of care as they are suffering from life-threatening conditions. Due to the nature and severity of illness, patients in the ICU also require care that is holistic and multidisciplinary (De Beer et al., 2011).

The context of the ICU and critically ill patients have changed over the years (Marshall et al., 2017). For critically ill patients who have reached a point where they can transition out of the ICU, this transition has also changed over the years, with a greater focus being placed on more than just “getting out alive” (Marshall et al., 2017). The focus is now on ensuring that patients who leave the ICU, are not only in a stable medical state but also in a stable mental, physical and psychological state. Along with medical advancements, critical care services have placed a greater significance on rehabilitative services or allied health professionals (such as occupational therapy, physiotherapy, speech therapy and dietetics) in the ICU setting in order to ensure that this can happen (Ntoumenopoulos, 2015). As an increasing number of critically ill patients survive their severe illness, they are in need of rehabilitative services in order to regain their prior level of functioning (Ntoumenopoulos, 2015). Historically many critically ill patients did not survive their time in ICU, and there was a greater focus on end-of-life care rather than rehabilitation, and the patients were usually sedated in order to ease their

pain and anxiety (Marshall et al., 2017). However, the ICU no longer consists of only unconscious ventilated patients, but rather more patients who are awake, alert and those who can actively participate in their rehabilitation (Ntoumenopoulos, 2015). This also has an important impact on the MDT working in the ICU and expands on their role in the decision-making process when it comes to nutritional decisions and deciding on overall care plans for critically ill patients.

However, due to the fact that patients are more alert and aware of their surroundings, many of them may experience depression and high levels of anxiety (Sevin et al., 2018). Many ICU survivors will describe their time in the ICU as an unpleasant experience, where some may say the opposite (Kisorio & Langley, 2019). They experience nightmares, terrors and have concerns of dying and what the future may hold (Kisorio & Langley, 2019). Cognitive impairments, depression, anxiety, physical weakness, lifestyle changes, and medication associated difficulties have also been identified in many ICU patients and therefore also indicate a high need for rehabilitative services in the ICU (Sevin et al., 2018).This is known as post-ICU syndrome, where patients experience psychological responses as a result of their time in the ICU (Flaatten & Waldmann, 2020). Therefore the MDT needs to be aware of post-ICU syndrome and do their best to ensure that patients are reassured during their time in ICU and that the patient can be an active member of the MDT in making decisions regarding their care, when they are able to do so (Sevin et al., 2018). This is another pertinent factor to consider when looking at feeding practices in the ICU, the patient should be included, when possible, as an active member in the decision-making process. When patients are unable to do so, their families and caregivers may need to be responsible for giving consent to certain procedures and operations (Kisorio & Langley, 2019). It is important to keep their families and caregivers as involved as possible, as they can be a helpful source for providing background information and explanations regarding the patient and their condition. Incorporating the family and caregivers in patient care has been linked to improved psychological well-being of

caregivers, less incidence of post-traumatic stress disorder, and an improved satisfaction with patient care (Burns et al., 2018).

Family and caregiver involvement is also an important factor in fostering shared decision-making. Although family and caregivers of patients may not understand the medical aspects of care, it is important that they provide information pertaining to their goals for treatment, preferences, values and cultural beliefs so that the MDT including the family can make holistic decisions of care (Burns et al., 2018). Sharing medical information with families and caregivers and involving them in decision-making has been linked to fostering of better clinical decision-making (CDM), (Burns et al., 2018).

At the time this study was proposed and conducted, COVID-19 had also become challenging for family and caregiver involvement. Due to the need for isolation and quarantining, most hospitals had stopped all forms of visitation, especially during peak infectious periods, and the families had to rely on phone calls and possibly video calls in order to stay informed and involved. Many patients in the ICU require assistance with these tasks and may not even have phones of their own, therefore the MDT were required to provide this kind of assistance over and above their usual duties. These extra tasks added additional strain on the MDT in the ICU, who had to ensure that they assisted their patients and family members remained in touch (Sasangohar et al., 2020). All of these factors had to be taken into account when planning this study and during the data collection phase as these factors all add to the complexity of the decision-making process within the ICU.

The MDT in the ICU

The term MDT, as it is used mostly in this document, refers to the team of healthcare professionals as well as the patient's family and caregivers, working together to provide patient-centred care to the critically ill patient, it refers to the team of multiple disciplines working in the ICU. In the ICU there are generally many different disciplines who will be treating

the admitted patients depending on the patient's presenting symptomatology, clinical signs, requirement for assistance and rehabilitation needs. The professionals expected in the ICU may be doctors (ranging from medical officers to super specialists), nurses, occupational therapists (OTs), physiotherapists (PTs), social workers, dieticians (DTs), STs, psychologists and radiographers, however this is not an exhaustive list and the professionals who may be involved will vary depending on the individual patient's requirements (Ntoumenopoulos, 2015).

The literature also speaks of these three different concepts, multidisciplinary, interdisciplinary and transdisciplinary teamwork. It is important to be aware of the teamwork concept that is at play within the ICU and amongst these professionals (Choi & Pak, 2007). MDT work refers to the different disciplines coming together but remaining within their professional boundaries when making clinical decisions (Bonvento et al., 2017b). Interdisciplinary teamwork refers to the different professionals coming together and combining their knowledge to make clinical decisions in conjunction (Choi & Pak, 2007). Transdisciplinary refers to the different professionals going beyond their professional boundaries, and synthesizing the knowledge from their colleagues to make complex clinical decisions, in essence if one professional is not present, the others who have sufficient knowledge and understanding of that professionals role would be able to make decisions and act on their behalf (Maguire et al., 2019). The use of a transdisciplinary team approach has a positive effect on the functioning of the ICU, this concept refers to all of the medical professionals working beyond their professional boundaries and allowing one another to share their expertise, skills and clinical knowledge in order to make decisions and solve issues regarding their patients (de Bock et al., 2018). Each professional has a specific role with regards to the treatment and assessment of critically ill patients and it is important to ensure all the required professionals are included in the care of critically ill patients in order to ensure optimal patient outcomes (Ntoumenopoulos, 2015). Using a transdisciplinary approach allows the team to combine their roles, knowledge and expertise in order to share the difficult responsibility of making clinical decisions in the ICU (de Bock et al., 2018). In an environment such as the one

which is under investigation in this study, it will be helpful to understand what kind of approach is being used in the ICU when it comes to decision-making, and if this approach influences the decision-making process. Table 1 below provides a brief description of the roles of the different professionals working in the ICU.

Table 1

The MDT Roles

PROFESSIONAL/S	ROLE
DOCTOR	A doctor working in the ICU is responsible for assessing, diagnosing and managing patients who are critically ill and in the acute phase of their illness. They will also provide basic life support to these patients based on individual needs. The doctor should also be involved in ensuring patient safety, caregiver support, ethical treatment and palliative care (NHS, 2021).
NURSE	A nurses role is to evaluate the patient's physical wellbeing, monitor their progress, document any intervention as well as their monitoring of the patient, and they will also assist other team members treating the patient, assist with the patient's daily needs and help to prepare the patient for discharge (Comisso et al., 2018).
REHABILITATION TEAM	The rehabilitation team may include a variety of professionals including OTs, PTs, STs and DTs. All of these professionals have specific roles and responsibilities when it comes to assessing the impact that the patient's illness has on their functioning, help the patient regain their prior level of functioning and assist them in participating in activities of daily living in order to ensure that the patients will be as independent as possible once they are discharged from the ICU (Curci et al., 2020). In recent years there has been increasing support for the role of the allied health professional within the ICU setting as rehabilitative services whilst in ICU has resulted in improved patient outcomes (Berney et al., 2012; Hongo et al., 2022).

Discharge planning also requires an MDT approach in order to ensure the best possible outcomes for the patients and that the patient is ready for ICU discharge (Ward-Wiley & Hornor, 2022). The rehabilitation team works with the patients and in some cases their families and caregivers to optimise independent completion of activities of daily living and independent self-care upon discharge. This initial rehabilitation alleviates pressure on the caregivers and family members once the ICU patient is discharged to a general ward or to home (Ward-Wiley & Hornor, 2022). With the increase in the need for ICU beds during the

COVID-19 pandemic, the importance of the rehabilitation team became even more evident in this setting as the MDT is responsible for getting patient ready for discharge (Grasselli et al., 2020).

Swallowing Challenges in the ICU

The process of swallowing is intricate and relies on the coordination of many different muscles and nerves to function optimally which will be discussed in this section. It is important to understand the swallowing process as there are many aspects of swallowing that may be at risk in a critically ill patient, and it is therefore necessary to keep these possible challenges in mind when working with the critically ill.

Swallowing

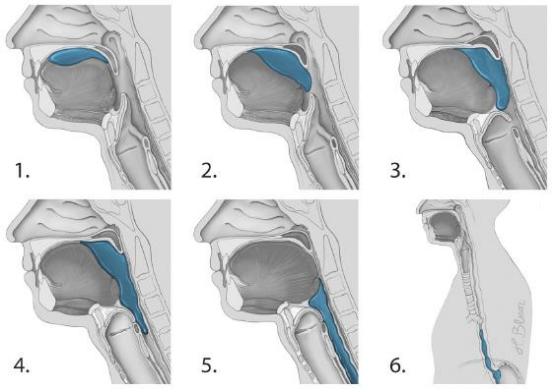

Figure 2

The phases of swallowing

Note. 1 = oral preparatory stage, 2 = oral stage, 3–5 = pharyngeal stage, 6 = oesophageal stage.

Zuercher et al. (2019). [The stages of swallowing]

Figure 2 (The phases of swallowing) above, provides a visual representation of the intricate process of swallowing. Each time we swallow we make use of 50 different muscles, five different cranial nerves with cortical and sub-cortical brain involvement (Zuercher et al.,

2019). When awake, we swallow more than one time every minute. There are four phases of swallowing; 1) oral preparatory, 2) oral transit, 3) pharyngeal and 4) oesophageal (Zuercher et al., 2019). In phase one, the food or drink is formed into a bolus. In phase two, the bolus is moved to the middle of the tongue, pushed up against the palate and then transported back to the oropharynx. A swallow is involuntarily triggered when the bolus comes into contact with the palatoglossal arches (Zuercher et al., 2019). The pharyngeal response is the beginning of phase three where the closure of the laryngeal vestibule occurs, the arytenoids medialize and tilt forward to the base of the epiglottis in order to seal off the glottis, the epiglottis retroflexes and the vocal cords adduct, which seals off the airway and prevents chocking (aspirating). Therefore, in the moment of swallowing, breathing stops. Once the bolus enters the valleculae and pyriform sinuses, it will then pass through the upper oesophageal sphincter and then the final phase has begun and peristalsis takes over, transporting the bolus to the stomach. It is important to have a patent upper airway when swallowing with all sphincters functioning optimally to ensure sufficient closure of the airway as the food enters the oesophagus bypassing the airway. Additionally, once the bolus enters the lower oesophageal sphincter, the sphincter closes, allowing breathing to resume with airflow up the trachea, through the mouth. If necessary, in the case of penetration when one clears their throat (when the bolus enters the airway, above the level of the vocal cords) or aspiration (when the bolus enters the airway and passes beyond the level of the vocal cords) one would cough, which serves as a protective function, which can prevent the bolus from passing below the level of the vocal cords. However, many critically ill patients suffer from weakness and have an inadequate cough reflex and would not be able to clear the airway in the event of aspiration (Fossat et al., 2023). Therefore, it is essential to work alongside the PT who assesses and manages the chest as well as the coughing reflex (Zuercher et al., 2019). Aspiration and aspiration pneumonia are serious complications arising from unidentified or untreated dysphagia, and aspiration pneumonia has been associated with almost 30% of hospitalised patient's deaths (Studer et al., 2016). As is evident in Figure 2, during swallowing the pharynx will alter from an airway to a passage for food. However, this process can become complex in the ICU and

can be hindered as many conditions leading to critical illness will result in respiratory distress, therefore a critically ill patient may have a compromised airway, and they may be connected to a ventilator and have a tracheostomy (Matsuo & Palmer, 2009). The airway is a vital access point to the lungs, especially in ICU patients as they often require intubation via the oral cavity or via a tracheostomy, which can inevitably lead to swallowing challenges and/or an upper airway which is no longer patent, which ultimately compromises a normal swallow (Zuercher et al., 2019). The intricate process of swallowing and the risks of a dysfunctional swallow that may be present in a critically ill patient are vital aspects that need to be considered during the CDM process when it comes to feeding the critically ill.

Respiratory Distress and Oxygen Therapy in ICU

Administering oxygen therapy is one of the fundamental treatment plans for a majority of the critically ill patients in ICU (Angus, 2020). Acute Respiratory Distress Syndrome (ARDS) is a life-threatening condition whereby fluid accumulates in the lungs, preventing them from filling with air which ultimately results in a decreased amount of oxygen delivered to the blood. The brain and the heart need oxygen to function, and if there is not enough oxygen in the blood these organs, which help to sustain life, will stop working (Fan et al., 2018). Respiratory distress is a common occurrence in critically ill patients and in many cases, it is the reason that an individual is critically ill. The causes of respiratory distress may be due to direct or indirect injury to the lungs which can include sepsis, pneumonia, inhalation, drowning, major injury, pulmonary oedema, COVID-19, chronic obstructive pulmonary disease, shock, and drug or alcohol overdose (Fan et al., 2018). The main symptom of respiratory distress is shortness of breath which leads to the need for supplementary oxygen, ventilation and possibly a tracheostomy (Bellani et al., 2016).

There is a high number of ICU patients with respiratory difficulties, it is common to expect patients with complex respiratory needs in any ICU, and it is also common to see

various forms of oxygen therapy including intubated and ventilated patients in the ICU (Bellani et al., 2016). Different methods of oxygen therapy are used to treat respiratory distress and any other form of respiratory difficulties. In essence, oxygen therapy is the process of supplying supplemental oxygen to the lungs and it can be done via different methods based on the individual patient's needs (Angus, 2020). Mechanical ventilation will be used in severe cases when a patient needs the assistance of a machine in order to breathe and fill the lungs with air (Bellani et al., 2016). Mechanical ventilation may be invasive or non-invasive. Invasive ventilation involves inserting a tube into the airway (intubation) whereas non-invasive ventilation is done using a mask that seals around the individuals face or through nasal prongs. Intubation and mechanical ventilation can be done in different ways also depending on the patients need, it may be done orally or via a tracheostomy (which will be discussed in the next section), intubation is known as the process of inserting the endotracheal tube into the trachea via the mouth (orotracheal intubation) or connecting it to the tracheostomy (tracheal intubation) as seen in Figure 3 (Quintard et al., 2017).

Due to the location and nature of oxygen therapy, it can create a barrier to normal communication and eating and at times it can contraindicate safe swallowing (Bellani et al., 2016). Depending on the mode of ventilation and the location of the oxygen therapy, the impact on swallowing varies. Regardless of severity of impact, these factors must be considered by the MDT when making clinical decisions regarding feeding the critically ill patient.

Tracheostomy

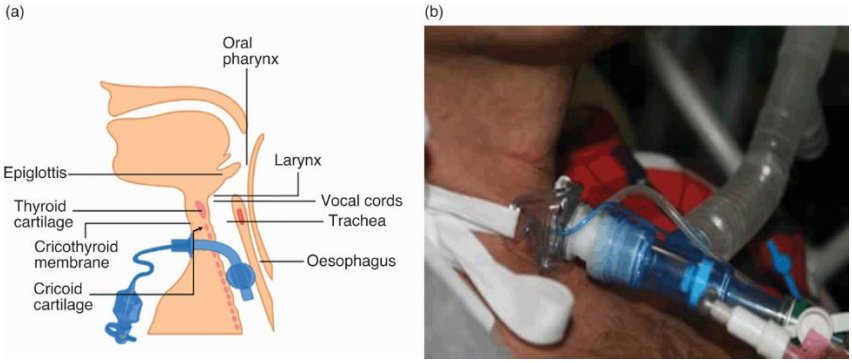

Figure 3

The tracheostomy

McGrath & Myatra. (2020). *Core Topics in Airway Management*. [The Patient with a Tracheostomy & Photograph]

Not all critically ill patients, but numerous patients will need a tracheostomy due to the fact that many of the conditions these patients have will cause complex respiratory problems (Dawson et al., 2021). A tracheostomy is an opening in the neck which is used to create an airflow when there is an obstruction to the upper airway or when a patient is in respiratory distress. In these situations the patient usually requires oxygen to be delivered to the lungs in a more direct manner, it also makes it easier to manage secretions as suctioning can be done regularly at the tracheostomy site (Skoretz et al., 2020). Suctioning is the process of removing thick mucus or secretions from the airway through negative pressure that a patient is not able to clear on their own by coughing (Skoretz et al., 2020). Patients with respiratory distress, infections and a tracheostomy may have excess secretions and mucus which creates the need for suctioning, as their ability to cough and clear the secretions on their own may also be hindered due to multiple factors such as an obstruction in the upper airway, muscle weakness or the presence of a tracheostomy (Fan et al., 2018). A tracheostomy will either be inserted electively or in an emergency. Most patients who have required mechanical ventilation for an extended period of time (10 days or more) will receive a tracheostomy as it will assist in the process of weaning the patients off ventilation, which is quite a common occurrence in the

ICU, due to the high prevalence of patients with respiratory difficulties (Skoretz et al., 2020). In the United Kingdom (UK) around 12,000 to 14,000 tracheostomies are performed annually in the ICU and in Europe around 7-16% of critically ill patients are tracheotomised, there was no recent data on the number of tracheostomies performed in the SA public health sector ICU (Bonvento et al., 2017a).

A tracheostomy can be either cuffed or uncuffed. The cuff refers to the balloon around the tube of the tracheostomy that can be seen in Figure 3. When the balloon is inflated, it is referred to as a cuffed tracheostomy and when it is uncuffed, the balloon is deflated. The cuff is usually inflated while the patient is on more intensive forms of ventilation, to ensure that all the airflows into the lungs with no escape up the trachea and out of the mouth. When patients begin the process of weaning off intensive ventilation, they will also go through a process of deflating the cuff. The presence of a tracheostomy, although necessary, can have some severe complications. It can cause damage to the oesophagus, especially if the balloon (as seen in Figure 3) is over inflated, and sometimes even create a fistula (opening) known as a Tracheoesophageal Fistula (TOF) between the trachea and oesophagus which can have devastating effects if not identified (Skoretz et al., 2020). Another common complication in critically ill patients who are tracheotomised is dysphagia and in some cases a tracheostomy and dysphagia are considered to co-occur due to the nature and location of the tracheostomy (Skoretz et al., 2020). The presence of a tracheostomy can cause dysphagia especially when it is cuffed and there is no airflow via the nose/mouth and the lungs. A patient requiring mechanical ventilation may need a cuffed tracheostomy (as mentioned earlier) in order to ensure more direct airflow to the lungs and that none of the air escapes up past the tracheostomy, thus breaking the seal and causing the ventilator to lose pressure, in which case the ventilator will not be able to work (Zuercher et al., 2019). Although dysphagia is common and can almost be expected in tracheotomised patients (Skoretz et al., 2020), standardised assessment and treatment protocols have yet to be proposed and universally used in the ST profession in the SA public healthcare sector. There is little to no guideline in

place in SA on the STs role in managing tracheotomised patients. Therefore, STs treating these patients must often do case by case research and attempt to develop their own assessment and treatment protocols (Dawson et al., 2021). This is not to say that assessment tools and guidelines do not exist for this population, however, the use of one uniform guideline is not in place. There are a few different options for screening and assessing dysphagia in the tracheostomy population and there often seems to be variation from site to site in the protocols used, however, most of this research has been conducted in developed countries and it is therefore difficult to translate to this setting (van Snippenburg et al., 2019).

The tracheostomy will also have an impact on speech and communication for these patients, as the tracheostomy impedes the airflow from the mouth to the vocal cords (Russell et al., 2017). Normally, when we speak, our voice comes from the vibration of our vocal cords caused by the stream of air that is transported from the lungs, up past the larynx and upper respiratory tract (Russell et al., 2017). Patients who are mechanically ventilated via the tracheostomy or the mouth will not be able to communicate using speech because of this interruption. Therefore, in order to decrease levels of anxiety and depression it is important for the ST to ensure some mode of alternative communication is in place until the patient has a patent upper airway and is able to voice (Russell et al., 2017). Due to all these factors the professionals working with these patients must also consider the psychological aspects of tracheostomy, intubation and ventilation. There is currently limited research on the psychological effects but these patients are often unable to speak and eat which can cause anxiety and a decrease in quality of life (Bonvento et al., 2017a). The presence of a tracheostomy will also be an important factor to consider when making clinical decisions regarding feeding the critically ill patient. The MDT will need to consider many additional factors when making clinical decisions regarding feeding when a patient has a tracheostomy, they need to look at the type of ventilation a patient is receiving via the tracheostomy, whether the cuff is inflated, whether or not the patient is being weaned off of the ventilation and/or tracheostomy. The MDT will need to take special precautions and look out for signs of a TOF

when deciding on enteral feeding as well. The presence of a tracheostomy can also cause overstimulation and thereby, a patient may become desensitized and not show the typical signs of aspiration such as coughing (Kim et al., 2022). Not to mention that the tracheostomy can also cause damage to the vocal cords, and if this kind of damage has occurred, there is an additional risk of swallow dysfunction, all of which needs to be considered when making clinical decisions about how to feed the critically ill patient.

ICU & Dysphagia

As discussed earlier, patients in the ICU often need to be intubated and mechanically ventilated in order to manage their airway due to a high possibility of complex respiratory problems, especially in an emergency situation (Quintard et al., 2017) or following surgery (Bauer et al., 2017). When the patient's respiratory function recovers or once they are stable after their surgery, they will then no longer require mechanical ventilation and can be extubated. Extubation is the process of removing the endotracheal tube from the airway and has been linked to a condition known as PED (Quintard et al., 2017). Internationally, PED has been found to be prevalent in 3% to 62% of patients in acute and sub-acute settings, however it can be transient in nature, therefore early identification and treatment is key in preventing longer hospital stays and other medical complications (Kwok et al., 2013). There are two factors which have been pointed out as the highest predictors of PED, these are the duration of intubation and an advanced age (Christensen & Trapl, 2018). However, PED is poorly understood as a health care problem which may be due to limited awareness of its existence and because it is a recent discovery (van Snippenburg et al., 2019).

Whereas dysphagia in stroke patients or those with brain injuries usually seen in the neuro ICU is more widely known and researched. There have been many tools developed for screening and assessing dysphagia in the latter population, such as the Gugging Swallowing Screen (GuSS) (Trapl et al., 2007), the Toronto Swallowing Screen (Martino et al., 2009), and

the Mann Assessment of Swallowing Ability (MASA) (Mann, 2002), but there are much fewer tools standardized on critically ill patients where PED is of concern (Christensen & Trapl, 2018). Therefore, the more commonly used dysphagia screening tools and protocols may not be applicable to the critically ill population in the medical ICU as PED can be transitory and affect different mechanisms, such as laryngeal trauma, decreased laryngeal sensation, and weakness of the swallowing muscles and increased work of breathing (Christensen & Trapl, 2018). This is in contrast to dysphagia caused by a stroke or brain injury where dysphagia arises from damage in the cortex or brainstem (Shaker & Geenen, 2011).

Dysphagia is understood as a disorder of swallowing, it can involve issues related to the oral cavity, the pharynx, the oesophagus and/or the gastrointestinal tract (American Speech-Language-Hearing Association, n.d.). The common signs and symptoms of dysphagia include drooling, food remaining in the mouth after swallowing, extra time needed to chew, the feeling of food stuck in the throat, changes in vocal quality, coughing after swallowing, aspiration pneumonia and weight loss, to name a few (American Speech-Language-Hearing Association, n.d.). Patients who experience PED due to severe respiratory complications often have the need for prolonged mechanical ventilation, intubation and enteral or parenteral nutrition (Frajkova et al., 2020). PED has also been highlighted as a general area of concern for all intubated patients in recent research, this is because dysphagia in ICU patients can have many adverse effects if not identified early (Christensen & Trapl, 2018).

Many international studies point out the relevance of dysphagia in the ICU, however, the prevalence of dysphagia in the ICU is commonly underestimated and under diagnosed (Altman, 2011; Christensen & Trapl, 2018; Schefold et al., 2017; Zuercher et al., 2019). A recent study by Marian et al. (2018) explained that medical professionals working in the neuro-ICU had a better understanding and awareness of the prevalence of dysphagia than those working in the general medical ICU. This is due to the fact that neurological conditions are more commonly associated with dysphagia (Marian et al., 2018). Therefore, there is a high

indication that critical illness dysphagia is possibly under diagnosed and under treated in the medical ICU as opposed to the neuro ICU.

Dysphagia can be linked to; although not exhaustively, neurological causes, prolonged intubation and/or mechanical ventilation, muscle weakness, altered levels of consciousness, sedation, trauma to the pharynx and/or larynx, age, medication side-effects and reflux (Zuercher et al., 2019). Schefold et al. (2017) found that dysphagia is common in about 12% of ICU patients and it can last for the duration of the hospital stay. Patients (those in ICU or general wards) with a hospital stay of four days or more have been found to have 40% higher rates of swallowing difficulties than those with a hospital stay of less than four days (Schefold et al., 2017). There is also a much higher chance of dysphagia in the geriatric population due to gradual changes in the swallowing mechanism as a result of normal aging (Tulunay-Ugur & Eibling, 2018).

There are many patients in the ICU who are at risk for developing some sort of swallowing difficulty, in fact swallowing difficulty in critically ill patients is highlighted as a major risk factor for adverse medical events such as pneumonia and malnutrition (Marian et al., 2018). An unidentified dysphagia can lead to aspiration pneumonia, the need for tracheostomy and a delay in resuming oral feeding (Schefold et al., 2017), as well as an increased length of stay (ICU or hospital), additional costs, malnutrition, the need for additional examinations and medication, a decreased quality of life and an increase in patient morbidity and mortality (Zuercher et al., 2019). In some cases, the intubation may also lead to the need for a tracheostomy, as a result of the respiratory complications caused by aspiration pneumonia (Skoretz et al., 2020).

Aspiration pneumonia can occur as a result of one or multiple events of aspiration over time, when the food or drink sits inside the lungs it can cause an infection, known as aspiration pneumonia (Zuercher et al., 2019). It is also known as one of the most common types of pneumonia diagnosed in hospitalised patients and has also been noted as the main cause of nosocomial infection in critically ill patients (Christensen & Trapl, 2018; James-Pettway, 2020).

Not all patients with aspiration pneumonia require intubation but research shows that around 50% of patients may require intubation (in some cases reintubation) and around 4-5 days of mechanical ventilation, special attention and a higher need for monitoring (Studer et al., 2016).

In most cases, aspiration pneumonia related to dysphagia could be prevented when there are protocols in place to swiftly identify and treat swallowing difficulties (James-Pettway, 2020). Doctors, nurses and STs are trained in the identification of dysphagia and STs specifically in its diagnosis and treatment. Therefore, ensuring appropriate protocols for the identification of swallowing problems and swift treatment of dysphagia will be beneficial in preventing aspiration pneumonia and its complications (James-Pettway, 2020).

Methods of Feeding in the ICU

The goal for any patient, not only those in ICU, is to ensure that they are eating in the safest and most optimal manner to meet their nutritional requirements. The mode of nutritional intake may be oral, enteral or a dual mode of feeding. In the past, food was withheld from many critically ill patients during their hospitalisation in ICU (Marshall et al., 2017). This was possibly because many critically ill patients were unconscious or sedated and this often leads to poor nutritional intake, weight loss and hunger (Marshall et al., 2017). However, we now understand that ensuring appropriate and adequate nutrition in critically ill patients is actually a form of therapy and can aid in their recovery (Hill, 2015). However, it is essential that nutrition be delivered in a manner that is not only safe but also optimal for the patient. Adequate nutrition in ICU patients has also been linked to a decreased length of stay, lower mortality rates, less infections, reduced duration of mechanical ventilation, improved functionality and lower overall medical costs (Hill, 2015). However, according to Bendavid et al. (2017) ICU patients are still underfed throughout their time in ICU regardless of their mode of feeding, whether it be oral, enteral, or dual. Eating a regular diet orally, may not be possible for many

critically ill patients. Therefore, we need to consider the different modes of feeding. It is pertinent to be acquainted with the different feeding modes for a patient in the ICU as follows:

- The oral route, as it states, simply implies eating via the mouth in a typical fashion.
- The enteral route involves providing nutrition and medication through the mouth or nose via a feeding tube.
- The dual route implies a combination of both oral and enteral routes, usually one route would be natural i.e. via the mouth and the other route could be via a tube inserted through the nose called an NGT for example (Bendavid et al., 2017).
- There are other modes of feeding such as total parenteral feeding, but these will not be discussed as they are not considered part of the ST scope of practice.

Bendavid et al. (2017) found that overall, nutrition in the ICU usually starts late and patients are often not fed during their first twenty-four hours in the ICU, although they do not state the reason for this delayed initiation of feeding. They also found that most ICU patients never meet their total nutritional requirements (Bendavid et al., 2017). Several studies support the benefits of early oral feeding in critically ill patients, as it has been found to improve metabolism and is much more cost effective than other routes of feeding, it is also linked to better patient outcomes and fewer medical complications such as sepsis, when it is done at the right time and in a safe manner (Liu et al., 2019; Seron-Arbeloa et al., 2013; Sierzega et al., 2015).

Managing dysphagia in the ICU

Treatment of dysphagia usually involves a combination of approaches including functional rehabilitation, dietary modification and compensatory strategies (Zuercher et al.,

2019). It may also involve an alteration in the mode of feeding or recommending a change in the consistency of the food if a patient is presenting with signs and symptoms of aspiration and/or dysphagia. Compensatory strategies may include the use of postural changes or specific swallowing techniques depending on the type of difficulty (Zuercher et al., 2019). Finally, functional rehabilitation would focus on rehabilitating the swallow, when possible with the use of exercises and or pharyngeal electrical stimulation (McRae et al., 2020). However, all these treatment options must be carefully selected and applied cautiously, as there is no one size fits all treatment option. Therefore, a ST working with dysphagia should generally possess sufficient knowledge and expertise and also possess critical thinking skills in the area of swallowing when making clinical decisions regarding the assessment, diagnosis and in the development of the combination of treatments that will be effective for each patient (McRae et al., 2020).

The role of the ST in the ICU

According to the Health Professions Council of South Africa (HPCSA) the ST scope of practice includes promotion of adequate communication, and the identification, avoidance, treatment and rehabilitation of a variety of developmental or acquired speech, language, swallowing and/or oral difficulties (HPCSA, 2021).

The role of ST in the ICU has evolved in the past few decades, especially within the ICU setting (McRae et al., 2020). Increasingly current research highlights the impact of dysphagia on ICU patients and the role that the ST can play in the diagnosis and management of dysphagia and its' adverse complications if not properly managed (McRae et al., 2020). According to McRae et al. (2020), in the UK the ST in the ICU should be involved in assisting with the assessment and management of speech and swallowing disorders as well as the process of weaning patients off the tracheostomy (McRae et al., 2020). Taking note that both the presence of a tracheostomy and ventilator puts patients at a higher risk for dysphagia as

discussed, they also specifically recommend that the ST is involved in the care of patients who have a tracheostomy and those who require ventilation (McRae et al., 2020). Just as early mobilisation through physiotherapy is prioritised in the ICU, research consistently advocates that the ST should be involved from early on to decrease the possibility of aspiration due to unidentified dysphagia and to ease patient anxiety through alternative communication devices (McRae et al., 2020). A study conducted by Russell et al. (2017) indicates the increasing number of tracheotomised patients in the ICU is due to medical advancements and patients surviving their critical illness. This same study also proved the effectiveness and benefits of having trained STs in the ICU who can assist in the assessment and management of patients with tracheostomy. Although there have been no studies of this kind done in the SA context, it is likely that the outcomes would be similar in this context as well. Tracheostomy management does not only involve the maintenance of the airway, there is an impact on speech and swallowing as well, as previously discussed, therefore it is necessary for a ST to be involved in the management of the patients in ICU (Russell et al., 2017).

However, some international studies from the UK and Australia indicate that there is currently little to no involvement of the ST in the ICU (Cardinal et al., 2020; McRae et al., 2020). A study conducted by Hill (2015) which aimed to investigate the nutrition support practices in the SA ICU, shows that in SA there is no mention of the ST l in the decision-making process regarding the route of nutrition for ICU patients. In this study the decision was made solely by doctors and DTs, although nurses were also mentioned as having a small role in the decision-making process (Hill, 2015).

There has also been recent efforts to highlight the importance of routine dysphagia screenings and systematic clinical swallowing evaluations by the ST within the first 24 hours of admission into an ICU to decrease dysphagia related complications (Zuercher et al., 2019). It has also been shown that there is limited consistency of routine dysphagia screenings within the first 24 hours of admission in multiple countries including the United States of America (USA) and the Netherlands (van Snippenburg et al., 2019). In a country like SA, where there

are additional pressures on the healthcare system, the proper identification and management of dysphagia is even more essential to limit the risk of medical complications due to swallowing difficulties, costs linked to increased (but likely preventable) length of admission and development of co-morbidities. Therefore, it is important to advocate for the role of ST in the ICU setting to assist in decreasing patient length of stay and relieve some of the pressure on our healthcare system. The STs should also advocate for their role in this setting, the ST needs to be present in the ICU, and be more involved in ward rounds and decision-making activities regarding their patient's management. In order to function as an integral part of the MDT in this setting, it is necessary to be present and available to other members of the team. Considering the limitations of this setting, it is also important to consider the benefits of transdisciplinary teamwork in the ICU, in cases where a doctor may take on the role of the ST, this should be seen as a necessary advantage, if the professional who is taking on the role of the ST has the necessary knowledge and expertise to do so.

Theoretical Framework

Clinical Decision-Making (CDM)

CDM is understood as the thought process happening in the minds of medical and allied professionals as they integrate and take into account the contextual, theoretical, personal, and medical factors of their patients, and then come to logical decisions regarding diagnosis and treatment (Kozlowski et al., 2017). Therefore, the CDM process is the way in which professionals process all relevant information pertaining to their patient and then come to a decision regarding their management (Kozlowski et al., 2017). CDM has been defined as a rational and purely cognitive process, however in recent years the understanding of the CDM process has evolved and there is better comprehension of the factors that may impact the CDM process and f the complexities involved in making decisions that are not only rational but are also humane (Kozlowski et al., 2017).

It is also important to understand that emotion can impact CDM for any professional (Kozlowski et al., 2017). Clinical decisions are often made in environments that may be emotionally challenging, such as the ICU, and research has shown that when emotion influences CDM it can impact the safety of patients (Heyhoe et al., 2016).

In any ICU or high care facility there is a lot weighing on the decisions made by the professionals who work in these environments, wrong choices can have devastating effects for the patient, which can lead to negative outcomes, such as an increased length of stay, malnutrition, intubation, tracheostomy, additional medical costs, and an increased chance of patient morbidity (Zuercher et al., 2019). Professionals may need to make transdisciplinary decisions due to increased time pressures in the ICU, therefore a doctor or nurse may need to decide on the safest route of feeding and medication administration before a ST has had a chance to assess the patients swallowing ability (de Bock et al., 2018).

The unique contextual factors related to the SA public healthcare sector ICU, such as a lack of resources and decrepit infrastructure may also impact on the decisions that need to be made regarding nutritional factors and the way in which international guidelines are put in to practice, therefore, it is important to take these factors into account when applying international guidelines in the SA public healthcare sector ICU (Hill, 2015). With a shortage of ICU beds and potentially high numbers of patients who may require intensive care, there are additional factors that need to be considered for professionals working in the SA ICU within the public healthcare sector. Some of the factors they would need to be considered include ICU bed shortages, lack of staff and resources, patient prioritisation and inadequate medical equipment (Maphumulo & Bhengu, 2019). In terms of deciding which route to use for feeding, the doctor and ST should work together to make appropriate clinical decisions on the safest option, a DT will then be responsible for making the clinical decision on the nutritional aspects in order to ensure the patient receives adequate nutrition regardless of the mode (Hill, 2015).

With this unique context in mind, we also have to consider not only the contextual factors playing a role in the CDM process in the ICU, but also consider the emotional impact

on the CDM process on the professionals working in this environment, and the pressures of understanding the consequence that each decision may bear (Heyhoe et al., 2016). The professionals working in the ICU must make decisions on a broader level, considering the vulnerability and fragility of their patients as well as the impact that any one decision can have (De Beer et al., 2011). Therefore, it is beneficial to understand the CDM process that is currently taking place in the SA ICU and perhaps gain some insight into what factors are being considered and how these factors influence the CDM process of the professionals working in this context.

Additionally, CDM in dysphagia management has become a new area of interest in recent years. Humbert (2015) describes the dual process theory in clinical practice, in which she explains the two systems of information processing. The first system is associated with our intuition and these kinds of decisions are made more automatically (Bate et al., 2012). Whereas the second system makes use of more analytical and rational evidence, in order to come to a well thought out conclusion, which we can look at as CDM (Bate et al., 2012). Humbert (2015) goes on to explain that system one is a skill developed over time and through experience, and system two is a process that should be taught (but often is not) in formal training. Swallowing is a complex process, as discussed earlier, and sound knowledge of normal and abnormal swallowing is essential for any ST practicing in dysphagia (Humbert, 2015). Actually, any professional making decisions regarding the safest mode of feeding for a critically ill patient must take all the relevant factors into account, and this kind of thinking (CDM) is a skill that should and must be taught (Vose et al., 2018). Therefore, it is necessary to explore the current critical thinking and decision-making process (or lack thereof) with regards to mode of feeding in critically ill patients, in order to further our knowledge of the factors that professionals working in the SA ICU consider when making clinical decisions.

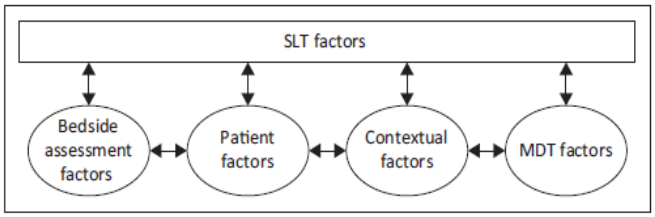

Figure 4

CDM in Dysphagia

Coutts & Pillay. (2021) *Decision making and the bedside assessment: The Speech Language Therapists' thinking when making a diagnosis at the bed.* [CDM in Dysphagia].

A recent study by Coutts & Pillay (2021) points out the limited research on the topic of how clinical decisions are made with regards to dysphagia in the complex SA context. This study identified specific factors (as seen in Figure 4) which have been found to have an impact on the CDM process for STs when assessing swallowing, these factors include bedside assessment information, the patient, the MDT, the context and the ST (Coutts & Pillay, 2021). It was also noted that the ST feels more confident in making decisions when there is more information available and that better clinical intuition is developed over time through experience and observation (Coutts & Pillay, 2021). Consequently, this theoretical framework will be relevant and applicable to the current study, as it will allow the researcher to delve into the deeper clinical thought process that takes place in the minds of the professionals working in the ICU when they make decisions regarding how to feed their critically ill patients in an environment that is complex and challenging with many factors that need to be taken into account.

Rationale

Literature shows that safe early oral feeding can improve patient quality of life, outcomes and even decrease their length of stay in the ICU (Sun et al., 2019). In a study conducted by Levy et al. (2020) they showcased a decreased length of stay in the ICU from

11 days to 6 days on average, using a model for safe early oral feeding and ventilator weaning along with the help of the ST. Altman (2011) showcases the importance of ensuring safe oral feeding for the public sector, as their study concludes that dysphagia and its' adverse effects impose a huge burden on the public healthcare system and is related to around 10 billion dollars in healthcare costs annually in the USA. Although there are studies that highlight the importance of the ST in the ICU, research does also highlight that there is variability in the assessment, diagnosis and treatment of dysphagia as well as speech disorders in the ICU (McRae, 2018). Research has highlighted that there is often a gap between theoretical guidelines and practice in everyday life (Bendavid et al., 2017). It is evident in ST practice and in the feeding practices of critically ill patients that literature and guidelines are not always practical or in some cases, possible. For example, literature states that early involvement of the ST can lead to better outcomes for patients, but studies have found that the ST is usually only involved at a later stage in the patients care and often only after aspiration pneumonia is diagnosed (Prohaska et al., 2019). When it comes to the commencement of oral feeding in critically ill patients there is a decision-making process which must take place for the MDT, many factors must be considered in order to determine if it is safe for the patient to begin eating orally, while taking into consideration the risk factors at play for each individual patient (Brodsky et al., 2019). Some of the factors which must be considered include the reasons for ventilation of the patient, any adverse events that may have happened during the hospital stay, the diagnosis, the prognosis, placement of the endotracheal tube as well as its specific characteristics, medication, and the level of alertness (Brodsky et al., 2019). The ST and the MDT should take all the previously listed factors and more into account when making decisions regarding the commencement of oral feeding for their patients in the SA public healthcare context. A few international studies highlight the causes and treatment of dysphagia but there is little information on the actual hospital practices regarding swallowing difficulties, and some studies also note that dysphagia is still largely under recognised in the ICU (Altman, 2011; Schefold et al., 2017).

There is also a need for more research on the role of allied health professionals within the critical care setting and the impact of their services on patient outcomes (Twose et al., 2022). There is also a need for more in-depth research on the CDM process of the MDT or transdisciplinary team working in the ICU, looking at how decisions are made. Due to the pressures of the ICU environment, research has shown that in some cases, transdisciplinary decisions have to be made to ensure timely intervention (de Bock et al., 2018). Therefore, more information regarding decision-making in this setting and whether or not it is transdisciplinary, will be important for researchers to understand how we can better assist and prepare the professionals working in the ICU.

Although many of the studies mentioned in the literature review point out the high risk of dysphagia in critical illness, it is evident that there is limited research on a successful and concrete way of diagnosing and managing dysphagia in critically ill patients (Marian et al., 2018). This study addresses the lack of information regarding the feeding practices in the ICU and will provide information on how dysphagia is currently being identified, diagnosed and treated in the public sector ICU. McRae et al. (2020) points out the lack of research on the practices of the ST in the ICU in the UK. Oral feeding practices and the role of the ST in the ICU also appear to be understudied in the SA ICU setting. Despite extensive searches on various search engines such as Google Scholar and Microsoft Academic, no published literature was found on the topic of how this decision-making process is currently being made and to what extent the ST is involved in the ICU in this setting. Due to the limited research on the topic, gaining more knowledge on this topic, which is the aim of this study, will assist not only the ST but the MDT in understanding the decision-making process with regards to feeding the critically ill patient in ICU in the SA context. Once there is more information available on current practice, we can create opportunities to improve protocols and guidelines. Currently, there is also no national policy available on the assessment and management of dysphagia in the ICU specifically, however there are a few guidelines (Pillay & Seedat, 2020). This study highlighted current methods of practice between ICUs in the public healthcare sector and

showcased the need for a national guideline to underpin assessment and management of dysphagia in critically ill patients, both those who are intubated and those who are not but who still may present with swallowing challenges. This study has showcased how the unique contextual factors, such as limited ICU beds, high patient to healthcare worker ratios and the lack of specific guidelines for practice in this setting impacts on the decision-making process.

Therefore, the aim of this study was to describe the current feeding practices and protocols in the ICUs at two hospitals within the public healthcare sector, with a special interest in the decision-making process that leads to the start of oral, enteral, or dual feeding. Local teaching guidelines for practice and research in feeding the critically ill patient could be improved if this study provides an in-depth description of current practice.

Methodology

This chapter provides the reader with an understanding of how the research topic was explored. The chapter will explain the research design, sites, participants, instruments, data collection, reliability, validity, rigor, trustworthiness, member checking, data saturation, ethical considerations and the emic position of the researcher.

Research Questions

What is the decision-making process of the MDT regarding the choice of a feeding mode for critically ill adult patients in the public sector ICU in Gauteng?

What factors impact the decisions around the choice of feeding mode in the public sector ICU in Gauteng?

Aims and Objectives

Main Aim

To describe the current decision-making process of the MDT in terms of feeding practices in the ICU in Gauteng within the public healthcare sector.

Sub-Aims

1. To explore the CDM process of the MDT in ICU with regards to the choice of mode of feeding.
2. To explore the CDM process of the MDT in ICU with regards to current protocols which may be used to select a mode of feeding.
3. To identify the factors which impact on the CDM process for the MDT when making decisions regarding feeding of the critically ill in the public healthcare sector in Gauteng.

Research Design

A qualitative, descriptive, observational study design with either focus groups or semi-structured individual interviews was used (Kisorio & Langley, 2019). Qualitative research designs are often used in health sciences when the topic proposed aims to describe issues related to a specific context or environment and when individual stories or experiences need to be shared (Cresswell & Cresswell, 2017). Qualitative descriptive research findings can be presented in a straightforward manner and allow the researcher to clearly describe the phenomenon at hand (Colorafi & Evans, 2016). The advantages of using a qualitative research design was that the researcher was able to gain more in-depth information which was the principal objective of this study, the researcher was able to give a full description of current practice without using filters or a set of predesigned answers (Cresswell & Cresswell, 2017).

The participants were able to speak from experience and give detailed answers, which ultimately strengthen the data obtained. Although, the downfall of qualitative research is that it can be time-consuming to collect data, the outcomes are generally more in-depth and provide more detailed information.

Ethnography seeks to learn about the participants through submersion rather than simply studying the participants from afar, which is conventionally done through observation (Jones & Smith, 2017). Through submerging themselves in the context of the research, the researcher is able to produce an in-depth analysis of the environment and gain greater understanding of the context and what it means to be a participant in such a context (Jones & Smith, 2017). Site observations are often used in ethnographic research and their place is grounded in theory, observations can allow researchers to gain in-depth information about the participants and their natural setting which aids in the validity of the information obtained (Bonner & Tolhurst, 2002). Post-observation discussions and interviews are an essential tool for relating the observational data back to lived experience and also gives the participants an opportunity to articulate their individual experiences (Jones & Smith, 2017). Focus groups are also a useful tool used in health science research when a researcher has questions pertaining to a specific topic but still aims to obtain information that is comprehensive (Saks & Allsop, 2012). This specific research design was used as it allowed the researcher to provide a clear in-depth description of the current feeding practices in the ICU as experienced by the individuals working in this context.

Research Sites

The research sites were two hospitals with medical ICUs two medical ICUs in the following hospitals in Gauteng:

- Helen Joseph Hospital (HJH)
- Charlotte Maxeke Johannesburg Academic Hospital (CMJAH)

These two hospitals are both public facilities located in Johannesburg, SA. HJH is a tertiary level hospital and CMJAH is a quaternary level hospital.

HJH is a tertiary hospital located in Johannesburg, Gauteng, it has a bed capacity of approximately 636 (Mafata, 2022). It is a teaching facility for the University of the Witwatersrand. The hospital offers a range of medical as well as allied health services to in- and out-patients (Mafata, 2022). The ICU at HJH has 10 beds, which made it a suitable research site for this study.

CMJAH is a large hospital, one of the biggest in SA, with a bed capacity of 1 088 and a staff compliment of more than 4000 individuals (Parliament of the Republic of South Africa, 2022). It is one of the main teaching facilities for a few local universities, The University of the Witwatersrand being one of them. The hospital offers all levels of treatment and services from basic medical care to specialised services (Parliament of the Republic of South Africa, 2022). It is also one of the referring hospitals for 14 other hospitals and various clinics within Gauteng and its neighbouring provinces. The hospital also offers out-patient services with a wide range of clinics under all specialities as well as allied health services for in- and out-patients. The medical ICU at CMJAH is combined with the surgical ICU (Karrim, 2020). It has 29 beds and is divided into two sides, a north and a south side. The unit was recently renovated in 2020 in preparation for COVID-19, with a generous donation from the FirstRand SPIRE Fund (FirstRand's SPIRE Fund Provides Additional ICU Capacity to Charlotte Maxeke Hospital - Rand Merchant Bank, n.d.). The unit is updated and has been fitted with the latest in ICU equipment. The ICU has a turnover of approximately 2 500 critically ill patients yearly (Karrim, 2020). Therefore, CMJAH was selected as a suitable site for data collection.

Participants

Sampling

A nonprobability purposive sampling strategy was used, because this study focused on a specific context and cohort of individuals who needed to have knowledge in this area (Cresswell & Plano Clark, 2017). Purposive sampling strategies are often used in health research as the researcher requires information that is specific to a certain group of individuals who can provide information on the specific phenomenon being studied (Palinkas et al., 2015). This sampling strategy was necessary as it allowed the researcher to collect information regarding feeding practices from qualified/trained individuals working at the sites where the study was conducted. Obtaining this information from individuals currently working in these contexts also aided in ensuring that the information obtained was relevant and true to current lived experiences.

Non-randomised participant selection was used. The participants selected had to be able to inform the subject matter at hand and help the researcher to better understand the answer to the research question being asked (Sargeant, 2012). Therefore, the participants were all members of the MDT working in the ICU in the public sector at the sites from which permission to conduct the research was obtained. Participant inclusion criteria is as shown in Table 2. Please also see attached participant information sheet (Appendix G).

Table 2

Inclusion Criteria

Inclusion criteria for the participants was as follows:
Must be able to understand and speak English.
Must work at an ICU at one of the HJH or CMJAH or have a family member admitted in the ICU.
Professionals must be registered with the HPCSA and/or the SA Nursing Council (SANC).
Must be a member of the MDT, namely an OT, PT, ST, doctor, family member of a patient, nurse, DT, and/or any member directly involved in feeding practices.

Recruiting

The recruitment of participants was done in person. The researcher arranged a time with the manager of each ICU to drop off participant signup and information sheets, explain the study and answer any questions regarding the research. This was done in the morning, during the announcements which take place at shift change. The participants were given time to then decide if they would like to participate in the research to not coerce them into participation. The signup sheets which were dropped off required one form of contact information (cell phone number or email address) and the individual's profession. A box was placed in the ICU department where the participants could drop their sealed signup sheet and consent forms. All personal information was used strictly in line with the Protection of Personal Information Act (POPIA) regulations as seen under the ethical considerations section of this document. The researcher required contact information in order to arrange the focus groups and individual interviews and to ensure that the date and time set would accommodate all the participants and not interfere with their daily tasks. The researcher also required the participant's profession to ensure that each focus group included a range of MDT professionals. The researcher then contacted the participants individually in order to set up a suitable time for the focus group and individual interviews to take place. For those who were willing to participate but could not attend at the time of the focus group, individual interviews were conducted.

Sample Size

It has been suggested that qualitative studies require a minimum of 13 participants to reach data saturation (Fugard & Potts, 2015). Therefore, a proposed sample size of 13 participants would have been considered sufficient for the current study. All individuals who met the selection criteria and were willing to participate in the study were included. The participant group at each hospital included a variety of participants in order to ensure rigor and trustworthiness of the information obtained (Shenton, 2004). In total, 15 participants were included in the study while ensuring a variation of MDT professionals (as listed previously).

The split between the two sites was six participants from HJH and nine participants from CMJAH. Three individual interviews and three focus groups were conducted which came to a total of 6 data collection events, not including the site observations. One focus group had six participants and the other two had three participants each. Although most focus groups guidelines suggest six to eight participants should be included, in healthcare research where purposive sampling is used, smaller groups of even two or three participants is considered sufficient as the group members must be able to inform on the subject matter at hand (Gundumogula, 2021). Therefore, the concept of saturation is more important in this type of study than the number of participants per group which is why the researcher employed prolonged engagement (Shenton, 2004).

Participant Description

The participant population was not gender balanced, although this is reflective of most of these professions in SA. However, the population was ethnically diverse, various in terms of age and the participants formed a well-rounded group of all the MDT working within the ICU as seen in Table 3 (Participant Information) and Figure 5 (Description of the MDT Variation).

Table 3

Participant Information

Participant	Age	Gender	Years of experience	Profession
P1	61	M	17	Nurse
P2	28	F	5	Doctor
P3	31	F	7	Doctor
P4	61	F	12	Speech Therapist
P5	32	F	10	Dietician
P6	41	F	15	Nurse
P7	25	F	3	Physiotherapist
P8	26	F	3	Physiotherapist
P9	29	F	7	Speech Therapist
P10	32	F	9	Dietician
P11	29	F	8	Occupational Therapist
P12	28	F	5.5	Speech Therapist
P13	32	F	5	Nurse

P14	31	F	8	Doctor
P15	32	F	-	Doctor

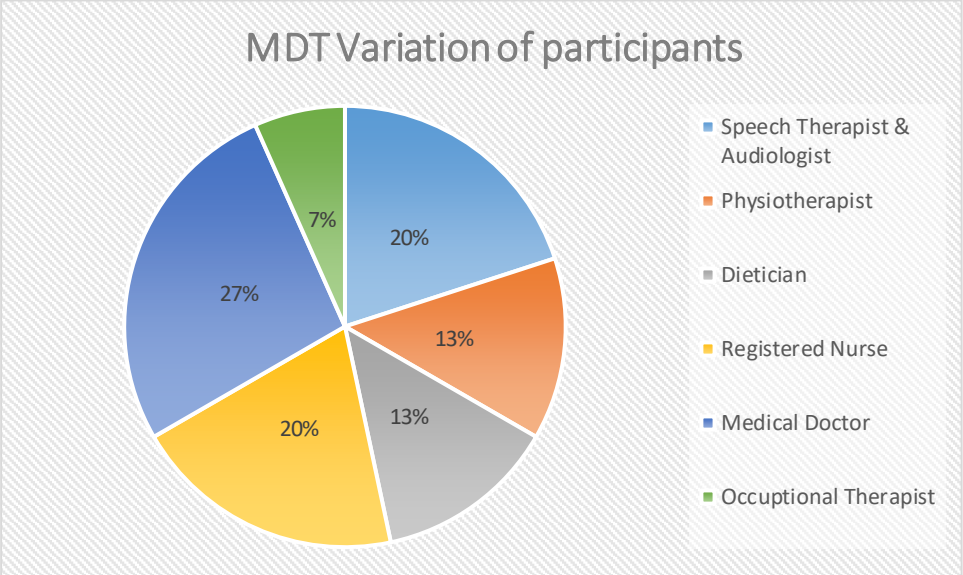

Figure 5

Description of MDT variation

Most participants were medical doctors (*n* = 4; 27%). The remainder of the 15 participants were equally spread across the various MDT professions. Speech Therapist & Audiologist: 20% (3), Physiotherapist: 13% (2), Dietician: 13% (2), Nurse: 20% (3) and Occupational Therapist: 7% (1).

The mean age of participants was 34 years (Range: 25 – 61; ± 10), with the overwhelming majority female (93%). There were six participants between the age of 20-29, six between the age of 30-39, one between 40-49 and one between the ages of 60-69. The mean years of experience was 8 years (Range: 3 – 17; ± 4).

Data Collection Procedures

Data collection commenced in June 2022 after approval letters from the hospitals research committees were obtained (Appendix B & C). Once ethical clearance was obtained from University of the Witwatersrand Human Research Ethics Committee (HREC - Medical) the researcher contacted the ethics committees at the hospitals as well as the Manager of the medical ICU at each site to obtain site permission (Appendix D & E). The researcher also obtained consent from the patients admitted in the ICU at the time of the observations, where the patients were not able to provide written consent, their families or caregivers were contacted.

Consent for research was also obtained from the National and Provincial Health Research & Ethics Committee. Hospital consent could only be obtained once the study had received ethical clearance from the University of the Witwatersrand Human Research Ethics Committee (HREC - Medical) and consent had been obtained from the National and Provincial Health Research & Ethics Committee. The ethics certificate number of this study is M220126 (Appendix A).

The researcher used multiple data collection methods, as is often seen in qualitative research (Cresswell & Cresswell, 2017). The methods as previously discussed, included site observations followed by focus groups with the addition of individual interviews where focus groups were not a possibility. The reason behind the use of multiple sources and data collection methods was in order to ensure data triangulation and to enrich the outcome of the study (Noble & Heale, 2019). The advantages associated with data triangulation include an increased level of authenticity and validity, it also assists the researcher in providing findings that are consistent and allows the researcher the opportunity to limit some of the potential threats that may influence the outcomes (Noble & Heale, 2019). Investigator triangulation was also achieved by the combination of two or more researcher's participation in the planning, implementation and write up of the study (Santos et al., 2020). In the current study the researcher has been guided by two supervisors who have contributed to the creation and

completion of the study. The benefit related to investigator triangulation is that it maximises on the use of multiple perspectives in order to minimise the risk of personal bias which can arise when a researcher works in isolation (Santos et al., 2020).

During the data collection phase, the researcher remained cognisant of the evolving COVID-19 situation in the country. All lockdown restrictions were adhered to, and the appropriate infection control procedures were maintained throughout the data collection phase. While conducting observations, focus groups and interviews, the researcher also observed site specific protocols with regards to infection control and PPE (Department of Health, 2020).

The data was collected through observations in the ICU and followed by interviews and focus groups, which are described below.

Data Collection Instruments

The tools that were used included a site observation tool and the focus group questions. The focus group questions were used during the focus groups and individual interviews (Appendix O & P).

Qualitative data consists of information gained from observations in the different sites which were conducted using the site observation schedule as described below. The information gained from the observation tool was then later used in the focus group and interview stage as additional points of discussion. The main source of qualitative data was gained from focus groups and individual interviews with different professionals working in the ICU, the focus groups and individual interviews consisted of semi-structured interview questions and also allowed for professionals to share their own experiences with feeding the critically ill patient in the ICU.

Step 1: Observations

The first phase of data collection was the ethnography. The ethnography included site observations of the ICU (Jones & Smith, 2017). The site observations were conducted according to the observation schedule below, with the use of reflective accounts and note taking as well.

The head of the ICU informed the staff on the day of observations that the researcher would be observing the ICU. The researcher did not obtain any identifying information of any of the individuals that were present during the observations. Therefore, all the staff and patients remained unnamed, in this sense they were passive participants of the observation. The researcher did not video record the ICU, but rather took notes only. The researcher did however obtain consent from the patients who were willing to allow the researcher to take note of their medical condition, Glasgow Coma Scale (GCS) score, mode of feeding and oxygenation. If the patients were not able to give consent, the researcher obtained consent from a family member or a caregiver. Patients from whom consent could not be obtained, or who were not willing to participate were excluded.

The aims of the site observations were as follows:

- To gain a better understanding of the context (ICU in hospital)
- To describe the ICU in as much detail as possible
- To create a starting point for the focus group discussions and allow the researcher to gain an understanding of each professional's role. The observation tool will be discussed in detail below.

The observation schedule was not piloted in order to ensure that the researcher's first impression of the research sites was not distorted. The risks of conducting a pilot study on the observation tool was the possibility of the researcher having a preconceived idea of the outcomes of the observation before collecting the final data, as the researcher already has an emic position, the decision was made not to pilot the observation tool (Fraenkel et al., 2006).

Observation Schedule

Site observation of each ICU was conducted before the researcher began with the focus groups and individual interviews. The observations were useful in giving a robust description of the context of the current study which was important for ethical considerations (Shenton, 2004), discussed in detail below. The observation schedule was used to guide the researcher on what to focus on during the observation phase of data collection.

When observing the ICU, the researcher took note of the following aspects:

- Describe the general environment in terms of available resources, the set-up of the ICU and the number of people in the ICU at the time including who these people are.
- Identify the kinds of patients in the ICU in terms of diagnosis, describing their level of alertness, mode of feeding and any other relevant observations such as mode of ventilation and presence of tracheostomy.
- Discuss the role of the people in the ICU and describe the activities that these individuals undertake as well as the interactions and communication they have.
- Describe the information seen on charts, in books, files and notes on the walls.
- A description of the patient's rooms, the equipment used, the settings of the oxygen, pumps, etc.
- Report on any impact on feeding noted due to COVID-19.
- Sketch the layout of the ICU.
- Draw the current organogram in the ICU.
- Patient to healthcare worker ratio.
- Report on information regarding feeding that is discussed during ward rounds.

Step 2: Focus groups

The second phase of data collection procedures were discussions in the form of focus groups. Focus groups are one of the most popular forms of data collection in health research as they yield detailed information while maintaining a natural dialogue between the researcher and participants (Bonner & Tolhurst, 2002). The focus groups were conducted face-to-face, while monitoring and adhering to the current lockdown restrictions at the time. The researcher made provision for individual interviews as some of the participants were unable to partake in the planned focus groups, due to timing conflicts, emergencies in the ICU and staffing compliment at the time of the focus group. As previously discussed, the focus groups consisted of a range of professionals with a minimum of 3 from each site, depending on who was available on the day and willing to participate, all of which was arranged once consent to participate had been obtained. As to not interfere with the clinical work of the participants, the focus groups took place during lunch time when the participants would not have been working or during a time that was most suitable for them. The participants were specifically informed that they did not need to cease eating for the focus group to be conducted. Additionally, the researcher supplemented their lunch/tea with snacks to ensure a continuous flow of conversation, comfort and relaxation from the participants during the discussion.

The ideal number of participants in a focus group varies in the literature but some state that five to eight participants is sufficient as this number of individuals can be easier to control than a large group and it will allow enough time and opportunity for each person to share their own experiences and partake in the discussion (Gundumogula, 2021). Recruiting participants who work in a hospital can be challenging, especially those working in the ICU, as it was difficult for multiple staff members to leave their patients at the same time to join a focus group. Therefore, accommodations had to be made in order to increase study participation (Baillie, 2019). In one instance, there were only 3 focus group participants as there was a medical emergency at the time of the focus group and those who had committed to join were no longer able to participate.

The demographic information included age, gender, years of experience, and profession which was obtained before the focus group discussion (Appendix P). It is important to gain this kind of information in order to understand the demographics of those working in the ICUs which are being observed and to give an in-depth description of the data that was obtained (Miksza & Elpus, 2018). The demographic information obtained provided valuable information with regards to the current demographic of professionals currently working in the ICU in the SA public healthcare sector. However, the researcher maintains all POPIA regulations with regards to personal information (page 64). The following topics were discussed in the focus groups:

- Professional roles with regards to feeding the patients in the ICU.
- Dysphagia in critically ill patients.
- Deciding on a mode of feeding.
- Monitoring if a patient is tolerating the selected mode of feeding.
- Factors that impact on this decision-making process.

The focus groups were conducted in English as this is the most widely used language within the ICU, all documentation used in the ICU is in English, and the ward rounds are all conducted in English; therefore, it is generally accepted that any person working in the ICU will have a good understanding and ability to converse in English.

Research participants are sometimes compensated in acknowledgement of the time given to participate in any given study. In the current study, the participants were provided with snacks during the focus group and individual interviews, this was an appropriate form of compensation as the discussions mostly took place during lunch or a break time. All focus groups and individual interviews took place at the participants workplace therefore, no additional costs were incurred on the participants (such as transportation) in order to take part in the research study. Therefore, monetary compensation would not have been appropriate. The snacks were not used in any way to entice the participants to take place in the study, they

were only used as a form of compensation. The participants were not aware that they would be compensated in any way when they agreed to participate.

The Focus Group Guide

The focus groups were conducted with questions that were prepared in advance as a baseline for the discussion to create a flow for conversation between the researcher and participants. Focus groups have been used widely in healthcare research and are considered reliable sources for gaining perspectives of healthcare professionals (Tausch & Menold, 2016). Each participant answered the demographic questions individually and then some general, open-ended questions were used to facilitate a discussion regarding the feeding practices and contextual factors within the ICU. Some of the questions were derived from the observations and others were prepared in advance. A pilot study was conducted in order to ensure that the questions used would yield valuable responses on the topic at hand (page 49).

Once the focus group began, the researcher briefly explained the research project and ensured informed participant consent (Regmi et al., 2017), asked the demographic questions and then moved on to the open-ended questions, finishing up with questions derived from the site observations. The researcher was a part of the discussion but also acted as a moderator, facilitating a discussion between the participants.

Throughout the discussion, the researcher used prompts to encourage the participants to expand on certain topics, such as: “please explain” or “can you expand on that statement?” or “please describe what happened” or “what did you do in that situation?” The researcher also encouraged the participants to explore the topics in detail and to provide in-depth information, when the participants got off track, the researcher reminded them of the discussion topic at hand or the current question that was asked (Tausch & Menold, 2016).

The open-ended questions were derived from the literature review as well as the theoretical framework and directly address the aims and objectives of the current study

(Tausch & Menold, 2016). The focus groups took between 30-40 minutes to complete. The focus group guide was trialled during a pilot study to ensure the questions were reliable and the timing stated was valid. Please see the 'Pilot study' section on page 49 for more information. The focus group guide was as follows:

Demographic Questions:

1. Age
2. Gender
3. Years of experience
4. Profession

Open-ended Questions:

1. Please describe your professional role.
2. Please describe your role with regards ensuring that the patients in the ICU eat.
3. Please tell me about your experiences with dysphagia or swallowing problems in critically ill patients.
4. How do you decide on the mode of feeding (for example NG vs oral)? Explain the decision-making process.
5. Are there any protocols in place when deciding on the mode of feeding in the unit?
6. Tell me how you monitor if a patient is tolerating the selected mode of feeding.
7. Discuss the factors that impact on your decision-making process with regards to feeding critically ill patients.

Additional: Individual interviews

Individual interviews were planned as an additional option during the time that this study was proposed. At that time, it was difficult to predict whether the focus groups would be viable due to the state of the COVID-19 pandemic and lockdown restrictions that were in place.

The additional individual interviews were planned to ensure that face to face interviews could still be conducted regardless of the lockdown measures that were in place. The same questions that were used for the focus groups were used for the individual interviews. At the time of data collection, it became necessary for the researcher to use the individual interviews. This was done to ensure that all the participants who were willing to participate in the study had the opportunity to do so. At the time of the focus groups, some of the members of the MDT who had agreed to participate, were unable to do so due to emergencies in the ICU, timing conflicts and staffing compliment. Therefore, they were given the option of doing an individual interview at a time that was convenient for them. Individual interviews and focus groups are different in the sense that the individual interviews would not have the same kind of interaction between participants. In view of this, individual interviews can also assist the researcher to gain information regarding participants understanding, ideas and experiences of any given topic within their environment (Ryan et al., 2013). The participants in the interviews were the same individuals who would have been in the focus groups except they were interviewed individually due to unforeseen circumstances.

Individual interviews are one of the most popular forms of data collection in healthcare research as they are able to yield detailed information in a space where participants usually feel comfortable to share their experiences (Ryan et al., 2013). Interviews are also useful in initiating a dialogue between the researcher and participant (Ryan et al., 2013). The interviews included the same open-ended questions, comments and probing that were used for the focus groups, while following a flexible interview schedule, the researcher could also ask for clarification on any matters that arose during the interview (Ryan et al., 2013). Consequently, the individual interviews are different from focus groups, the researcher also highlighted information that came up during the focus groups, to ensure there was good carry-over of what would have been discussed as though those participants were included in the focus groups with all the other participants.

The Individual Interview Guide

The interviews were conducted according to the guide (Appendix P) which allowed for a natural flow of conversation between the researcher and participant (Ryan et al., 2013). As the interviews were designed to be an additional option when focus groups were not possible, the questions were the same, in order to ensure that similar information was obtained regardless of the mode of data collection. Therefore, the researcher asked some demographic information and then proceeded to the questions regarding feeding practices in the ICU, as stated above the researcher was able to probe, comment and ask for clarification on any matters that arose during the interview.

The interview questions were tested in a pilot study before the actual interviews took place as described in the 'Pilot Study' section below.

Pilot Study

Prior to the semi-structured observations and focus groups, the researcher conducted a pilot study. A pilot study is a small-scale study that is conducted before any data collection procedures commence and it is beneficial in ensuring that the research protocols, instruments and design is appropriate and specific to the aims of the study (Monsen & Van Horn, 2007). In health research, a pilot study is essential in order to improve the proposed study design and methodology (Monsen & Van Horn, 2007). For the purpose of this study, the pilot study was used in order to test if the observation guide and focus group interview questions would yield the appropriate information and if they need any revision before they were used in the data collection (Monsen & Van Horn, 2007). This was helpful in identifying any areas of concern that could be amended and adjusted before the actual observations and focus groups took place. The pilot study was also beneficial in familiarising the researcher with the instruments and protocols, which aided in a smoother and more prepared data collection phase (Fraenkel et al., 2006).

It was also important to understand how to ensure the most convenient and reliable data collection procedures due to the fast paced work schedules of the participants and limited time availability (Fraenkel et al., 2006). The pilot study also ensured content validity of the focus groups and confirmed the intended duration of the focus group interviews (Fraenkel et al., 2006).

The nurse who participated in the pilot study was given the necessary participant information and consent sheets. After the participant agreed to participate in the pilot study, an interview was conducted, and the responses recorded. The researcher also obtained feedback from the participant upon the completion of the interview. Table 3 below provides a summary of the results from the pilot study.

Table 4

Objectives, results and outcomes of the pilot study

Objectives	**Results**	**Outcomes**
To determine the appropriateness of the selected research protocol and design.	The research protocol and design are appropriate in that it gives an overview of the events which take place daily in the ICU as well as the decision-making process of the individuals working in this environment.	No changes were made to the research protocol and design.
To ensure the selected data collection procedures were convenient considering the setting.	The pilot study participant mentioned that the data collection procedures were convenient seeing as it is aimed to take place during a teatime when those individuals would not be working in any case.	This made the researcher more aware of ensuring that the data collection would not interfere with the daily activities of those working in the ICU. In order to accommodate this, more individual interviews were conducted than originally planned as it was easier for

		certain participants. For example, some of the Doctors opted to do individual interviews outside of their shift.
To determine the feasibility of the research instruments, and to confirm if the questions proposed will yield relevant information. To confirm content validity and reliability of the research instruments, in terms of the fairness and stability of the research instrument's ability to yield appropriate data.	The original questionnaire made use of the term feeding, in many of the questions. For example: "Can you describe your professional role and your role with regards to feeding the patients in the ICU?" and "How do you decide on the mode of feeding? Explain the decision-making process." However, the term feeding appeared to be misleading and resulted in the participant thinking that it meant NG feeding only, not all modes of feeding.	To overcome this confusion, the researcher reworded the questions as follows: "Please describe your role when ensuring that the patients in the ICU eat?" and "Please tell me about your experiences with swallowing problems in critically ill patients?"
To confirm the duration of the focus group or semi-structured interview.	The pilot study interview took roughly 20 minutes to complete. However, it was only conducted with one person and not in a group which would of course, increase the length of the focus group time.	The researcher was hereby able to confirm that the focus groups or individual interviews would take roughly 30 minutes to complete.
To familiarise the researcher with the data collection protocols.	The researcher was able to get more familiar with the data collection protocols.	This made the final data collection procedures

		slightly easier as the researcher was prepared.

Data Recording

It is important for the researcher to keep a record of raw data during the data collection and analysis phase of the research. Keeping raw data will also be important for ethical considerations (Shenton, 2004).

The researcher chose reflective accounts and note taking for the observations, as this allowed the researcher to capture the essence of the environment while also being able to keep notes of those events and experiences that cannot be captured in a picture (Glaw et al., 2017). Making use of these methodologies in research can enrich the data and is beneficial in adding validity to the data and can assist in creating new knowledge (Glaw et al., 2017). Ethical considerations regarding trustworthiness and confidentiality were maintained and are discussed in detail below.

The researcher chose digital video recording for the focus groups and interviews, as this method allowed the researcher to give full attention to the participants during the focus groups rather than focusing on trying to write down everything they were saying (Gundumogula, 2021). Using this method also allowed the researcher to engage fully in conversation with the participants. Having a complete recording of the interviews was also beneficial during the data analysis phase, as the researcher was able to go back and listen to the responses at any time (Gundumogula, 2021). When transcribing the interviews, the video recording made it possible for the researcher to know which participant was talking at any given time, which made the transcription of the interviews clear and concise as it was easy to know which participant was speaking (Gundumogula, 2021).

Another benefit of using digital video recordings is that it creates more of a natural environment for the participants, recordings were captured on a mobile phone with a recording

application (Gundumogula, 2021). Using a small device, that the participants are familiar with, which was placed in the corner of the room, out of the participants line of sight also made the situation more comfortable for the participants and allowed them to almost forget that they were being recorded. The use of video recording also helped to speed up the interview process as there was no need for extensive note taking (Gundumogula, 2021).

The researcher also took notes during the focus groups, however, note taking was kept to a minimum as to not disrupt the flow of conversation and where possible, it was kept to the end of the discussion. Note taking focused on any new topics that arose or themes that appeared to reoccur throughout conversation (Gundumogula, 2021). The recordings were transcribed by the researcher on a password protected laptop, the participants were given pseudonyms and their responses were taken down word-for-word in a Microsoft Word document. After the transcriptions were complete, the researcher used member checking (see page 69 for more detail) in order to reduce bias and ensure that the transcription accurately represented the data collected (Naidu & Prose, 2018).

Thematic Data Saturation

Data saturation is a concept which researchers use in order to ensure that the data collected is valid and to attempt to measure the end point of data collection, essentially it is a guide to assist the researcher in estimating when data collection is complete (Saunders et al., 2018). Saturation implies adequacy in research terms, the researcher has reached data saturation when they find the information obtained answers the research question at hand and it is also useful in authenticating the sample size in different type of qualitative research studies (Saunders et al., 2018). In this sense, having collected all the relevant information pertaining to the topic, and having reached a point where no new relevant information is emerging, one is able to answer their research question with confidence (Guest et al., 2020). The final research report proved that the sample size was sufficient in providing new and relevant

information pertaining to the research topic (Malterud et al., 2016). Data saturation can be quite conceptual, therefore in the current project the researcher employed principles found in current literature to assist in measuring data saturation for qualitative research studies (Fusch & Ness, 2015; Guest et al., 2020; Malterud et al., 2016; Saunders et al., 2018).

In qualitative research, it can be challenging to determine if data saturation has been reached before the data analysis phase. During the data analysis phase, the researcher looks at all of the data collection events (in this case focus groups and individual interviews), once they have been coded and then begins to put all of the information into themes. During this phase the researcher attempts to assess at which point no new relevant information is being obtained. At the beginning of data analysis, new information is constantly emerging, and many new themes begin to generate. As the data analysis continues, similar themes can be seen emerging throughout the data collection events and eventually no new themes will emerge, but rather each events information will fit into the themes that were generated from the start of data collection (Saunders et al., 2018). With the guidance of this principle, the researcher was able to assess at which point during data collection that new and relevant information had stopped emerging. After 8 data collection events, which comprised of a combination of individual interviews and focus group discussions as well as two observation sessions, it was evident that no new and relevant information emerged. Therefore, the researcher terminated data collection. Most qualitative researchers find that up to 92% of the new information collected during research is obtained within the first 6 interviews (Fusch & Ness, 2015). For this study, it is important to remember that a smaller sample size was expected as the number of individuals who would have knowledge on the topic is smaller than one would usually expect (Sargeant, 2012). This point is especially valid when using non-randomised participant selection, as mentioned earlier, which was necessary for the current study.

Data Analysis

Preparation for Analysis

Before the data was analysed the researcher transcribed all the information collected during the observations focus group discussion and interviews. All the information collected was transcribed into a Microsoft Word document on the researcher's laptop. The researcher coded all identifying information, for example, site names were not used but replaced with pseudonyms such as "Site A" and "Site B". Participant responses were also replaced with a pseudonym in the same way, for example, "Participant 1", "Participant 2", "Participant 3".

Descriptive Statistics

There is an amount of quantitative data which was gained during data collection, descriptive statistics were used to analyse this information (Miksza & Elpus, 2018). The researcher used Microsoft Excel to analyse the quantitative data. This data was minimal but includes items such as age, gender, years of experience, and profession which were obtained during the interview process (Appendix P). It is important to gain this kind of information in order to understand the demographics of those working in the ICUs which are being observed and to give an in-depth description of the data that was obtained (Miksza & Elpus, 2018). The demographic information obtained provided valuable information with regards to the current demographic of professionals working in the ICU in the SA public healthcare sector and therefore strengthen the information obtained. However, the researcher maintained all POPIA regulations with regards to personal information.

Thematic Analysis

The information from the focus groups and individual interviews were transcribed and thematic analysis as well as reflexive thematic analysis was performed in order to look for

themes that developed throughout the data which allowed the researcher to make associations between the information collected (Holloway & Galvin, 2016).

Thematic analysis is often used when analysing data in the form of interview transcriptions or narratives. It is useful in summarising common elements found in the transcriptions as well as analysing personal accounts and perspectives (Holloway & Galvin, 2016). A deductive latent approach to thematic analysis was used, in which the researcher approached the data in a top down manner with a set of preconceived ideas based on current knowledge on the topic and the researcher attempted to understand the meaning behind the responses and how they were affected by the context (Holloway & Galvin, 2016). Therefore, with the concept of CDM in mind, the researcher aimed to construct themes according to the principles of how the participants make decisions regarding feeding the critically ill patient and what factors in their context impact on their decision-making process (Vose et al., 2018). In qualitative research, researchers will always have expectations regarding the data, therefore it is important that the researcher practice reflexive thought throughout the data analysis phase. The researcher kept a journal throughout data analysis and consistently reflected on her assumptions and beliefs surrounding the data and investigated whether those assumptions and beliefs held meaning within the data (Braun & Clarke, 2019).

There are six steps developed by Braun et al. (2019) which the researcher followed when conducting thematic analysis, all of which will be explained further:

Step 1: Familiarisation.

In this step the researcher read through the data thoroughly, transcribing any recordings and taking notes about the data. Before analysing, it is important for the researcher to have a good overview of all of the information that has been obtained. This process made it much easier for the researcher to identify general themes and common ideas that appeared in the data (Braun & Clarke, 2006).

Step 2: Coding.

In this step the researcher focused on simplifying the information that was obtained so that it was easier to analyse. Coding implies that the researcher generates initial codes to the data which commonly appears (Braun, Clarke, & Hayfield, 2019).

Step 3: Generating Themes.

Once the information had been familiarised and coded, the researcher began to search for common themes. A theme can be defined as an important piece of information that is reoccurring and prevalent throughout the data, and also has a direct relation to the research question (Braun & Clarke, 2019). This process requires the researcher to arrange the labels into a set of themes (Braun & Clarke, 2006). It is important that the researcher understands that themes are the stories of shared meaning which are unified by a core idea that reoccurs throughout the data (Braun & Clarke, 2019). A deductive approach to thematic analysis was used, this approach required the researcher to have an idea of the themes that may come up during analysis, and often these themes are obtained from current knowledge on the topic. (Braun & Clarke, 2006). In this case, the themes that were anticipated were those identified in current research on the topic of CDM in dysphagia. The anticipated themes were regarding CDM in dysphagia (Coutts & Pillay, 2021), the role of the ST in the ICU (McRae et al., 2020), challenges in the SA public healthcare sector (Maphumulo & Bhengu, 2019), a lack of set protocols and guidelines for assessing and managing dysphagia in the ICU (Dawson et al., 2021), and the limited awareness of dysphagia as a problem in critically ill patients (van Snippenburg et al., 2019). A thematic map was used at this stage which allowed the researcher to address relationships between the different over-arching themes (Braun, Clarke, & Hayfield, 2019). A thematic map is a visual representation of the reoccurring data that is found, lines are used to represent relationships between main themes and sub-themes (Braun & Clarke, 2006). At this stage, there was some data that did not fit into any reoccurring theme, however it was important for the researcher to store this data and group it together under a 'miscellaneous' theme which was explored further at a later stage (Braun & Clarke, 2019).

Step 4: Reviewing Themes.

At this step, the researcher ensured that the themes accurately represented the information collected and portrayed a clear picture of the data that is easy to understand. Essentially, the researcher took the themes and compared them with the original set of data, ensuring that all of the information was included and that the themes were valid (Holloway & Galvin, 2016). It was also important to make sure that the themes included the correct information, and that the labels were accurate in their description (Braun & Clarke, 2006). At this stage, themes that were similar were merged into one larger theme or the researcher decided to relabel a theme if the descriptor did not accurately describe all of the information under each theme (Nowell et al., 2017).

Step 5: Defining and Naming Themes.

Once the thematic map was completed, step five began. All of the information under each theme should be clearly explained and refined (Holloway & Galvin, 2016). At this stage, the researcher was able to identify the core of each theme. It was important for the researcher to simplify the data while giving a detailed explanation of what was found (Braun, Clarke, & Hayfield, 2019). The researcher considered how each theme related to the research question and how the themes related to one another (Nowell et al., 2017). The researcher, at this stage consulted with the research supervisors who are experts in the field to decide whether the themes and their descriptions accurately represented the data in relation to the research question, this is known as peer debriefing (Nowell et al., 2017). Theme names will also often reflect the questions asked during the data collection phase (Braun & Clarke, 2019). The researcher allowed sufficient time for this step, defining and naming of the themes was not considered complete until the researcher had gone through all of the data at least twice (Holloway & Galvin, 2016). This process was important in ensuring that the findings of the analysis were credible and could be trusted (Nowell et al., 2017).

Step 6: Writing Up.

Finally, the researcher wrote up the findings of the analysis. The write-up was done in a logical manner, while including all of the important information and engaging the reader (Nowell et al., 2017). The report portrays the information obtained as a true reflection of the data. However, the report also provides an argument that directly relates to the research question and in fact, answers the question at hand (Braun & Clarke, 2006).

The Emic Position of the Researcher

The researcher is a ST, working in a similar context to the research sites. Therefore, the researcher would be considered to have an emic position which must be considered during the data collection, analysis and write up of the results. When a researcher is also someone who is directly involved in the context being examined it is important that they put themselves in the role of a researcher and remove themselves from their usual role (Yanto et al., 2023). During site observations, it is best for the researcher to be almost unidentifiable to those being observed as the presence of the researcher may alter participants behaviour (Bonner & Tolhurst, 2002). When the researcher is considered to have an emic position this can be of benefit to the study, as the researcher will have in-depth knowledge on the context of observation and therefore greater understanding of the information which can be obtained through observation (Yanto et al., 2023). Therefore, throughout the data collection phase the researcher did not conduct observations or interviews as a ST but rather took on the role of a researcher and aimed to maintain the most professional manner as possible. ‘The researcher also made use of member checking (page 69) to reduce bias. Where possible, data collection was done in ICUs where the researcher wasn’t currently working, and interviews were conducted with staff members who the researcher was not currently working with in order to ensure that there was no previous rapport or familiarity between the researcher, site and participants.

In order to minimise the effects of the researcher's emic position, the researcher also used reflective journals. This was done in order to critically examine the researcher's previous relationship and familiarity with the research context and to ensure that these familiarities did not interfere with the research process. In the reflective journal, the researcher kept detailed notes of her previous knowledge of the context and any familiarity she had with the staff members or patients. The researcher was also careful to note her reaction to the observations and interviews as well as her emotions during the process, while also describing the decision-making process taken during the data collection phase (Bonner & Tolhurst, 2002).

Ethical Considerations

Before conducting the research, ethical clearance – medical was obtained from the University of the Witwatersrand Human Research Ethics Committee (HREC - Medical). All ethical considerations were based on the World Medical Association's (WMA) Declaration of Helsinki (WMA, 2013). When conducting research with human participants there are certain considerations that must be made in the following parameters; informed consent and voluntary participation, non-maleficence, anonymity as well as confidentiality (Leedy & Ormrod, 2010). Additional ethical considerations should be made with regards to qualitative research in healthcare, as researchers can often open windows of knowledge that were previously unknown on sensitive topics (Peter, 2015). Therefore, additional consideration was made in the following areas; the vulnerability of the participants, autonomy, justice, naturalistic observation, and potential for identifiability of the results (Peter, 2015). It was of utmost importance that this research project caused no harm to any of the participants and sites which agreed to participate, therefore extra care and consideration was made in all of the areas listed and in additional areas explained below.

Informed Consent and Voluntary Participation

This study aimed to include observations of sites as well as interviews with stakeholders at those sights, therefore, informed consent was obtained before any data was collected and analysed and each participant had the option to participate in the research study or not. Consent for site observations was obtained from the hospital CEO and head of ICU at each respective site. Informed consent for the focus groups or individual interviews was obtained from the participants. Participation was not mandatory and there were no penalties for choosing to not participate. Participants were also able to choose to withdraw from the study at any point in time. Informed consent is a process whereby the researcher clearly explains the role of each participant as well as the risks and benefits of partaking in the study (Regmi et al., 2017). At this stage, the researcher explained that the participants would receive snacks during the focus groups as a form of compensation for taking up this time during their day. The researcher was required to discuss the compensation with the participants during the informed consent process, while ensuring that the compensation was not used as a way of persuading the individuals to partake in the study (Shrestha & Dunn, 2020). A consent form given to each participant also had contact information should the participants have felt the need to report any concerns regarding the research. All information pertaining to individuals as well as the sites has been kept private, no personal or site-specific information was shared in the results of the study. A signed informed consent document was required from each participant (Appendix L).

Non-maleficence

This is a fundamental ethical principle in any research study, the researcher must not do harm. The principle of non-maleficence reminds the researcher to keep their participants well-being in mind throughout the study (Lawrence, 2007). This has been taken into account throughout the research process, from observations until the write up of the project. The researcher maintained the highest standards of ethical practice and ensured no conflicts arose that could jeopardise any of the sites or participants. The well-being of participants was

ensured throughout the data collection phase as well, by ensuring that all regulations with regards to COVID-19 were met but also by ensuring that the data collection did not cause any additional stress to the participants. In this manner, the researcher was careful in accommodating all participants and ensuring that the data collection was conducted at a time that was convenient for all and did not disrupt the normal activities and flow of the workday. This was done with the help of the parameters that will be discussed throughout this section.

Anonymity and Data Management

In this study, the researcher ensured that the participants and sites right to privacy was maintained. All data collected including the recordings, transcripts and notes from the observations, will be securely retained for two (2) years, if a scientific publication arises from the study and six (6) years, if there is no publication.

Confidentiality

Due to the nature of the focus group discussion, confidentiality could not be guaranteed amongst the participants. Therefore, the participants were asked to sign a non-disclosure agreement before the start of the focus group (WMA, 2013). The non-disclosure agreement requested participants to respect one another's privacy and to not share any of the information from the focus group interviews with any outside individuals (Appendix L).

The researcher also encoded all identifying information, for example, site names were used but replaced with identifiers such as "Site A", "Site B", and "Site C". Participant responses were also encoded in the same way, for example, "Participant 1", "Participant 2", "Participant 3".

Ensuring the privacy of patients as well as their diagnosis is a non-negotiable, information pertaining to health is considered one of the most sensitive topics and the

researcher must ensure that this information remains private and confidential (Bhattacharya, 2014).

With regards to COVID-19 regulations and confidentiality considerations, the focus groups took place in conference rooms located within the respective hospitals. Therefore, to ensure privacy doors and windows which were close to high traffic zones or the possibility of outsiders being able to hear what is discussed were kept closed.

Protection of Personal Information Act

The POPIA Act came into commencement on the 1st of July 2020 and the deadline for compliance came into effect on the 30th of June 2021 (Parliament of the Republic of South Africa, 2019). The Act was updated in order to ensure that personal information of individuals is protected, especially with regards to information being processed by private and public entities. According to the SA constitution, every individual has the right to privacy, which includes protection against the unlawful collection, holding, distribution and use of personal information (Parliament of the Republic of South Africa, 2019). Therefore, the POPIA Act was created as a guideline to ensure that personal information is processed within justifiable limitations, while maintaining the protection of such information and the rights of the individuals in question.

Therefore, in the current study the researcher maintained the regulations set out by the act and ensured that all personal information was treated with the utmost respect. Where and when personal information was required, the researcher stated explicitly the reason for obtaining such information and took every measure necessary to ensure that information was used only for the purposes laid out in this document (Parliament of the Republic of South Africa, 2019). The researcher also obtained permission from the individuals in question when personal information was required and explained these reasons to the individuals. Finally, all

personal information that was obtained throughout this study was collected and stored in an ethical manner, the information will not be distributed or used for any other purpose than is stated is this document.

Vulnerability

Vulnerability in research is in essence the way in which the researcher puts ethical considerations into practice when conducting their study (Gordon, 2020). All risks to human subjects who may be involved in the research must be limited. This concept is especially relevant when it comes to vulnerable populations, such as critically ill patients in the ICU (Gordon, 2020). In the current study, sufficient consideration has been made with regards to the vulnerability of the ICU patients at each site. Considerations have been made in the following aspects:

- The timing of the data collection procedures: The focus group discussions took place at a time (e.g., during lunch) when the participants would not have been working and thereby, they did not affect patient care.
- Small participant numbers: The focus groups included one or maximum two participants of each profession to ensure that there was little to no effect on the number of staff available in the ICU at the time. The staff usually take their breaks in intervals and the focus groups took advantage of these schedules.
- No direct patient involvement: The researcher has specifically not included patients in the data collection procedures to not add any additional strain to these patients. Providing they gave consent, only their medical information was used.
- Family members of patients: The researcher obtained written consent from the patient's family members where the patients were not able to give consent for themselves.

Rigor and Trustworthiness

Trustworthiness and rigor are understood as the qualitative aspects of reliability and validity (Shenton, 2004). In order for research to be deemed trustworthy and rigorous, the researcher must prove that the topic has been explored in a manner that is succinct, reliable, and thorough (Nowell et al., 2017). The researcher must also explain the data collection and analysis process in detail, in this way the reader will be able to determine whether the research was conducted thoroughly (Nowell et al., 2017). The use of descriptive aids, such as observation reports, in research report writing has also been known to support the validity of research (Glaw et al., 2017). Research will be deemed trustworthy when it adheres to four main concepts; credibility, transferability, dependability and confirmability (Shenton, 2004).

Credibility

Ensuring the results are credible is an essential aspect of trustworthy qualitative research (Shenton, 2004). Credibility is concerned with the internal validity of the research design. To ensure credibility prolonged engagement has been used, in which the researcher asked several different questions during the data collection phase and also ensured that the participants provided examples to support the statements made during interviews or focus groups. The researcher also ensured honesty on behalf of the participants by giving them the option to withdraw from the study at any point without a reason, making it possible for them to be truthful and honest throughout the interview process. Another means of ensuring credibility is to make use of a research assistant. A research assistant transcribed the audio in the video recordings of the focus group interviews in order to avoid any bias during the transcription phase (Shenton, 2004). Finally, to establish credibility, the methodological triangulation theory was also used.

Triangulation

Triangulation is concerned with the believability and the authenticity of the research (Noble & Heale, 2019). Making use of triangulation methods in research will assist in making sure that no biases arise during the data collection and interpretation phases and that the information gained includes a wide variety of experiences, knowledge and contextual data (Noble & Heale, 2019). Triangulation can be used in qualitative research in order to ensure that the data obtained is in-depth (Noble & Heale, 2019).

In the current study, Denzin's multiple data source triangulation approach has been used whereby data was collected from more than one method (Denzin, 2017). Step one of the data collection strategies included observations of the research sites. Observations yield contextual information which was a valuable asset to the researcher in the second step of the data collection phase (Denzin, 2017). Step two of the data collection strategy included focus groups and individual interviews with ICU staff, in this phase the researcher could explore her findings from the observations and discuss particulars relating to the context with the participants. Interviewing a variation of staff also allowed the researcher to obtain a range of personal accounts and expertise and therefore yielded more credible and valid results (Denzin, 2017).

Investigator triangulation has also been achieved in the current study which is the concept of using multiple investigators (the researcher and two research supervisors) to answer the research question at hand (Roulston, 2018). Investigator triangulation has been used in order to overcome the intrinsic bias that would be present when one researcher works alone (Denzin, 2017). This method also improves the validity and credibility of the research study outcomes (Roulston, 2018).

Transferability

As the name implies, this aspect is concerned with how well the current research results could transfer to another setting or context (Shenton, 2004). Transferability is also concerned with the external validity of the research design and whether or not the results could be considered generalizable (Cypress, 2017). In order for the research to be considered transferable, the researcher must describe the context and ethnography in as much detail as possible (Shenton, 2004). Due to the nature of the research context, the reader may not be able to generalise the results to other settings, however they may be able to apply some of the results in a justifiable manner with a great understanding of the research context and how the context has impacted the results (Shenton, 2004). This has also been achieved by conducting observations at more than one site in order to ensure some variation in data collection and some level of transferability to the larger SA context (Shenton, 2004).

Dependability

The qualitative counterpart to reliability is dependability (Shenton, 2004). In order for the results to be considered dependable, the researcher must account for the ever changing research context and be sure to document any and all changes in the research setting and describe how these changes have affected the researchers approach to the study (Shenton, 2004). The results of the research should also be repeatable, meaning that if another researcher were to analyse the raw data, they would come to the same or similar conclusions (Shenton, 2004). This has been achieved by providing a detailed and thorough methodology which has helped to reassure the reader that all research methods have been adhered to with the highest ethical practice and that no biases were present during the data collection phase (Shenton, 2004). The process used when analysing the raw data must also be captured in a detailed manner, which could then be repeated by any other individual (Shenton, 2004). To ensure the results are reliable and valid, the researcher also conducted a pilot study

beforehand with a nurse working in the same setting as described above. The use of a pilot study assisted the researcher in ensuring the data collection tools would obtain the accurate information and it also allowed an opportunity for adjusting the tools if need be (Abu Hassan et al., 2006). The researcher also used member checking to ensure that the results obtained were reliable, valid and credible. Member checking is often used in qualitative research as a method of validating the raw data obtained (Candela, 2019).

Member Checking

Researchers will often use member checking to verify the information obtained during data collection. It is important for the researcher to ensure that they are being accountable to their participants throughout the data analysis phase and beyond, member checking can assist the researcher in this sense (Naidu & Prose, 2018). Member checking is part of the iterative process in research, which is the process used to build, refine, and improve the study throughout its development (Candela, 2019). In the current study, member checking was done after data collection and once step one and two of the thematic analysis was completed.

During this process, the transcribed and coded interviews were sent out to all of the participants via email. They were asked to read through the interviews and to verify that the transcribed data accurately captured the message they were trying to get across during the interviews and that the data was transcribed correctly, according to how the participants remembered the interviews (Naidu & Prose, 2018). The researcher also used member checking to obtain clarity on certain areas in the transcribed data where she felt unsure of what the participants were saying. This process was done in order to strengthen the accountability of the data obtained and is also an important step during reflective thematic analysis (Candela, 2019).

Member checking is also useful in ensuring that the participant's point of view and lived experiences are accurately expressed during the write-up of the research, which in turn

strengthens the validity of the research project (Candela, 2019). In the current project, the transcribed and coded interviews and focus group discussions were emailed to the respective participants.

Confirmability

Confirmability is the qualitative counterpart to objectivity, however, research explains that complete objectivity is not achievable in qualitative research as every researcher approaches the research topic with their own unique perspective (Shenton, 2004). Although this may be true, in order for the research results to have confirmability, it is the researcher's responsibility to ensure that personal biases are removed and the report is based only on the participants responses (Shenton, 2004). To ensure this, the researcher has included quotes from the participants in the reporting of results. The researcher has also kept an audit trail, which is a step-by-step account kept by the researcher during analysis which explains the decision-making process that was taken (Shenton, 2004).

After the observations took place, the researcher also made use of reflective journaling, to describe what it was like to be in the setting of the study and recall any important information (Jones & Smith, 2017). The researcher kept a record of what she did, thought and felt throughout the data collection and analysis phase in the reflection journal. This was helpful in providing a rationale behind the researcher's perceptions and thoughts of the data collected and aided in removing any preconceived assumptions that the researcher may have had regarding the data (Russell & Kelly, 2002).

Autonomy and Justice

Respecting the participants' autonomy and justice is an integral part of maintaining ethics in any given research study. In order to maintain autonomy, the researcher must obtain

informed consent from all participants (Lawrence, 2007). The principle of justice entails that each participant must be treated in an equal and fair manner. These principles have been maintained in the current study by providing all the participants with a study information sheet as well as informed consent sheets for participation in the focus group. The researcher has also obtained permission for observation from the head of each unit, who ensured that all individuals were made aware of the observations taking place. An important aspect to note regarding the intention of observations is that the researcher was not assessing the participant's knowledge but rather attempting to gain insight on their thought processes and how they make decisions regarding their patients. It was important for the researcher to remain neutral in all aspects and not attempt to make any analysis or evaluation of the services provided. The researcher observed the daily activities happening in each unit in order to gain a better understanding of how these activities can inform and strengthen the information obtained. These observations were then used as discussion points in the focus groups and interviews (Lawrence, 2007). The researcher also obtained consent from the patients in the ICU in order to access their medical information. In this regard, the researcher has respected the autonomy and justice of each participant.

Results

This chapter will provide the reader with a list of all the themes that came up throughout the data collection phase. Each theme will be presented in detail, with supporting quotes and data obtained during the observations, focus groups and individual interviews.

Themes

With the use of Braun & Clarke (2006) six steps of thematic analysis as well as Campbell et al. (2021) reflective thematic analysis guide, the researcher was able to identify six clear themes that came up throughout each interview and focus groups. The themes identified, were as follows; decision-making in the ICU, non-patient related impacting factors, feeding the ill patient, tolerance versus *tolerance*, the MDT in the ICU and finally, the role of the ST in the ICU. The themes will be discussed in more detail and supported by quotations obtained during the focus groups and interviews as well as information gained during the observation of the ICUs.

In this study, the researcher observed the ICU and then conducted interviews and focus groups in order to better understand the process of feeding critically ill individuals. The main aim of this study was to describe the current decision-making process of the MDT in the ICU in SA within the public healthcare sector when feeding the critically ill patient. The themes generated help to achieve this aim while also delving deeper into the current feeding practices in the ICU.

Through the analysis phase it became evident that the themes and sub-themes which emerged in the data linked with one another. For example, when choosing a mode of feeding, the participants look at the clinical factors of the patient, which emerged as a theme. While at the same time, there are external factors which also impact on that decision, and those factors then emerged as their own theme. In this section, each theme will be discussed in detail, with

reference to current literature on each topic, and the links between each theme will also be explored. Below in Figure 6 (Relationships between themes) is a graphic representation of how the themes and sub-themes link with one another.

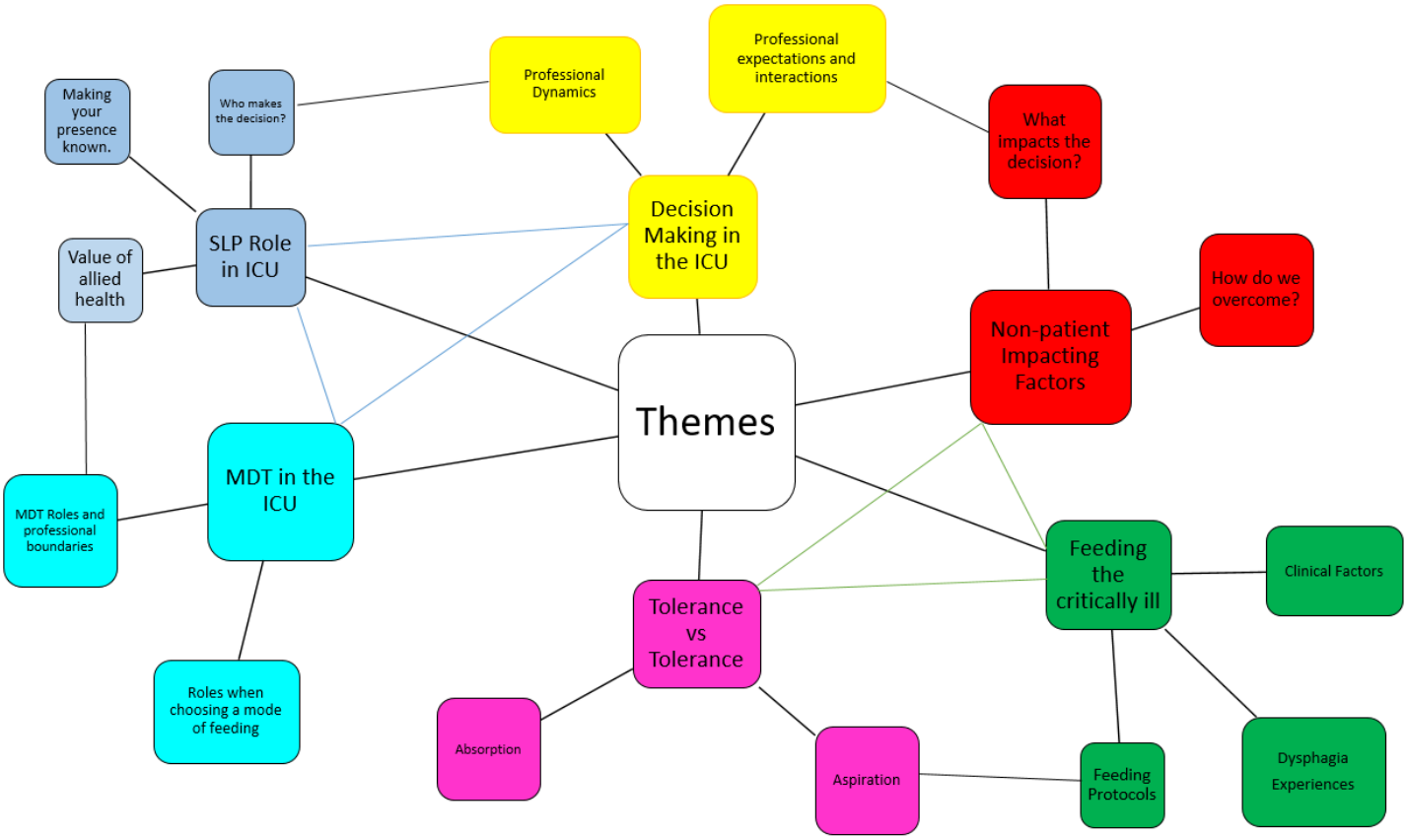

Figure 6

Relationship between themes

The first sub-aim of this study was to explore the CDM process with regards to feeding the critically ill patient, while the second sub-aim was to identify the factors that impact on the decision-making process. The themes have been separated under these two aims and will be presented in this manner in order to explore how the aims of the research study were achieved. The themes that represent the CDM process include decision-making in the ICU, the MDT in the ICU and the role of the ST in the ICU. The themes that describe the factors which impact on the decision-making process include feeding the critically ill, impacting factors and

tolerance vs *tolerance*. Although the factors are represented separately from the decision-making process under the results section, they ultimately guide the MDT in making the final decision. The process of decision-making is a combination of professional knowledge and experiential knowledge as well the factors that are identified in each case which are all used in combination to make a final decision regarding a patient's mode of feeding. Figure 7 (Theme separation) below provides a visual of how the themes have been split in order to answer the research aims.

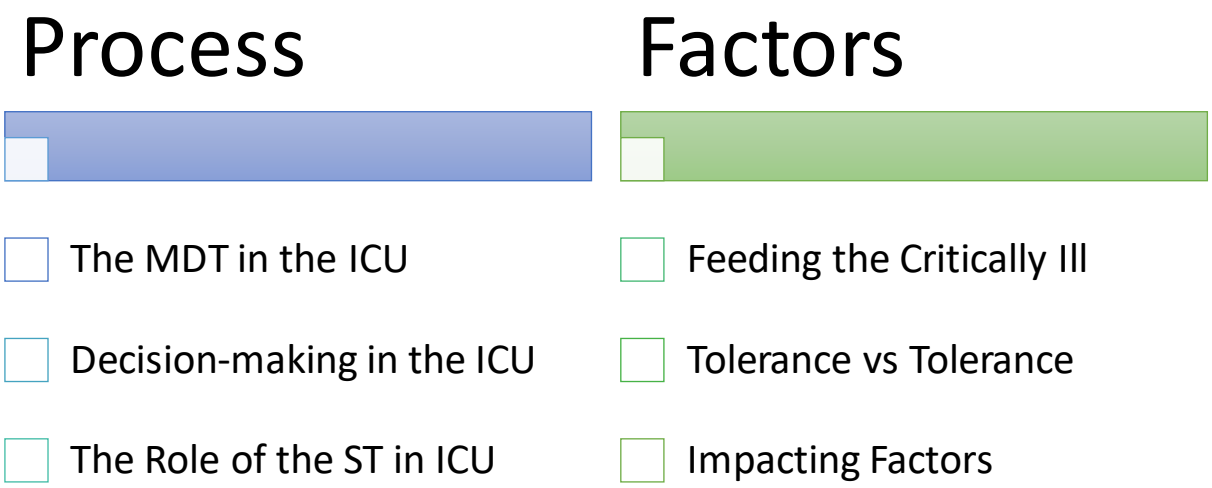

Figure 7

Theme separation

Theme 1: The MDT in the ICU

The process of deciding on a mode of feeding begins with the professionals who are treating the patient. The different members of the MDT each have their own set of knowledge and experience which they must use in order to make the decision on the mode of feeding for the critically ill patient. The first theme that emerged from the data was the MDT in the ICU, which has been divided into the overall professional role of each member and then goes into detail on the different roles of each member when selecting a mode of feeding. The involvement of the MDT in the ICU is a valuable addition to the ICU team and the literature

supports this (Hongo et al., 2022). In both ICUs in this study, there is involvement of most members of the MDT, and it was evident through the interviews and focus groups that each profession has a specific role in patient care and in decision-making around feeding. This theme evolved through the discussions with each professional on their role in the ICU and then more specifically, their role with regards to selecting a mode of feeding.

- **Sub-theme 1: The different roles of the MDT and profession boundaries.**

Each professional working in the ICU has a specific role to play for the ICU to function optimally. The participants described their varying professional roles and what they feel their responsibilities are in the ICU. However, it was evident that the different professionals are there to collaborate (work with one another), support and guide one another. With the concept of transdisciplinary care in mind, these responses were unexpected, as it appeared that the MDT working at these two sites preferred not to cut across profession boundaries and they also preferred not to have their professional boundaries invaded at the same time. This can be seen in more detail below:

Doctors

According to the medical doctors, they are responsible for the overall care of the patients in the unit, and they will see to all the medical needs of the patients.

P14 (Doctor): "*I am a medical officer, we are involved in accepting patients, reviewing patients for ICU placement and once they are in ICU, we attend to whatever medical needs they have until they are fit to be discharged to the wards."*

Nurses

The nurses explained that they are also responsible for the overall care of the patients, but they will be more involved in acting on decisions which are made by the doctors and monitoring the patients throughout the day. The nurses also make recommendations based on the information they gain from caring for the patient.

P13 (Nurse): "*I am the nurse, so I am basically just carry out the orders, and oversee the overall care of the patient."*

P6 (Nurse): "*I advocate for the patient to all the MDT, make sure that the quality nursing care is done and also check who is coming to the patient. That they don't fiddle with any of the lines, they also ask who are you, why are you coming to see the patient, you must ask permission first to ask if you can go to the patient*."

Speech Therapists

The ST is responsible for issues related to swallowing, but they also have other responsibilities when it comes to communication, cognition and voice.

P4 (ST): "*To come in and check the patient's mode of feeding and their communicative abilities. Are they communicating or not? Can we assist with any devices to help them communicate? Or are they verbal and don't need our assistance."*

Dieticians

The DTs explained their role as mainly ensuring that patients in the ICU remain well-nourished and they will implement nutritional plans for most of the patients in the ICU.

P5 (DT): "*My role is to feed the patients, either orally, via the NGT or via the central line just to make sure our patients are adequately fed as nutrition plays and important role in the recovery of the patient*."

Physiotherapists

The PTs described their role in the ICU as mainly supporting the patient's mobility but in the early stages it is ensuring that the patients maintain a clear chest.

P7 (Physio): "*Making sure that our patients are mobile, getting them to move. Clearing their chest, making sure that the patients are able to clear their own secretions. Preventing contractures and getting the patient to move*."

P8 (Physio): "*Chest in the acute phase and once they are a bit better, then mobilizing and maintaining their range of movement if they are sedated."*

Occupational Therapists

The OT involved in this study explained that they do not primarily work in the ICU but when their services are required, they mainly assist with functional independence and in the prevention of contractures forming in the patient's hands and feet.

P11 (OT): "*As an OT, I'm not really based here but I do help out quite a bit of the time. We don't get a lot of patients referred to us because we are more involved with splinting of hands and feet and stuff like that. But I suppose anyone who needs help with ADLs, so they are almost too critically ill but if there are those patients who are awake and responsive and can engage, we can try help with hand function and ADLs."*

This sub theme has provided and explanation of the overall roles of each member of the MDT working in the two units that were involved. These quotes describe the dynamic in the ICU as more of a multidisciplinary working concept as opposed to trans- or interdisciplinary concepts. However, this will be discussed in more detail under theme two.

- **Sub-theme 2: Roles when choosing a mode of feeding.**

Decision-making is an important part of any patient management. The participants all shared information about the decisions that they need to make daily when it comes to feeding their patients. From choosing the correct mode of feeding to deciding the consistency of the meal there are many decisions to be made. The MDT in the ICU have different roles when it comes to selecting a mode of feeding for the critically ill patient, and all their roles are directly linked to that individual's professional role and responsibility. What was clear, is that each professional knew their role in this decision-making process and how they fitted in to the overall process of ensuring that the critically ill patient gets nutrition. Supporting quotes from the interviews are discussed below. The roles of the different members of the MDT will be discussed per profession. Alternatively, to what was seen under the overall roles, it did seem as though there was some form of transdisciplinary care when it comes to deciding on a mode of feeding, this was seen mostly on the part of the doctors, who at times took on the roles of other professionals in this process.

Doctors

The responses from the doctors revealed that they assess the patient's medical status and then decide if the patient can eat or not. This can be seen in the quotes below:

P1 (doctor): *"I essentially assess the patient's background history, and need for admission to ICU and then their current issues and then in those three ways I try to see if there are any absolute or relative contraindications to oral or parenteral feeding and then making a decision for each particular patient at that specific point in time."*

P3 (doctor): "*From our point of view, we have to make sure that an NG tube is not contraindicated."*

Nurses

The nurses explained that they are responsible for the overall care of the patient, which includes making sure that the patients eat. They usually act according to what has been directed by the doctors, but they might make recommendations based on what they observe and assess when caring for the patients, which will be discussed further under the clinical factors sub-theme.

P13 (nurse): *"I am the nurse, so I basically just carry out the orders, overall care of the patient. Just make sure that the patient has a prescription for feeding to begin with, so if there isn't a prescription, if there's a new patient, we would usually start them on Fresubin original so usually making sure that we have stock for that."*

Speech Therapists

STs assess the swallowing function and will provide information on what consistency is safe for the patient. They also work closely with the MDT to ensure the patient is fed safely.

P4 (ST): "*For us, that can be done subjectively or objectively. You will start subjectively and then you may move on to an objective assessment such as a video swallow to decide and to assess if the patient can swallow, once they can swallow, we then pass it on to the DT to decide what type of feed, the rate of the feeds and how much of the feed. From our side it's not about how much goes in but how it goes in*."

P12 (ST): "*I am the ST in ICU, my main goal is to assess safety on oral feeds, so I often get referrals from the dietician, doctor or nursing staff*."

P9 (ST): "*Make sure that the patients are swallowing safely, dealing with HOW you swallow. The swallowing physiology. Recommend if the patient should be fed orally, via NGT or with a PEG. Also helping with their communication."*

Dieticians

DTs assess the nutritional needs of the patient, look at the clinical factors and decide how best to meet those needs. Once they prescribe a certain diet, they will then monitor that the patient is getting what has been prescribed.

P5 (DT): "*What we choose to feed depends on each specific patient, the disease condition, weight, biochemistry, we look at everything holistically. Then we decide on a feed and a rate whether it's NG or TPN.*"

P10 (DT): "*My role in the ICU, I'm the dietician. Every day I have to see whether the patients can or cannot eat orally. I need to make sure that in the ICU the patients are fed optimally. Normally in critical care patients they have a lot of protein requirements. In a critically ill state, they lose a lot of muscle mass during the first week in ICU, they can lose up to 400g per day of lean body mass if not fed accurately. So, my first thing is to follow guidelines, we do have different guidelines. We will follow acute phase management of the patient. We will see whether or not, if the patient is ventilated or not, if there is an NG tube or gastric tube inserted. We will go through there. If the gut isn't functioning, we will use TPN. And if it's a patient that has for example, came in not ventilated, then we will see if they are not eating orally. But if it's a patient that has been extubated then we will call ST to assist and see if the patient can swallow. But my main goal is to make sure that I meet the requirements of the patient*."

Physiotherapists

Physiotherapy explained that they do not have a direct role when it comes to choosing a mode of feeding.

P7 (PT): "*In terms of PT, I don't think we have much of a role*."

Occupational Therapists

The OT noted that they would assist in the action of feeding and help the patients relearn how to feed themselves.

P11 (OT): "*If they are awake and alert then we can teach them to whole act of feeding or adapting, let's say if they are using the left now instead of the right hand. We will be involved in retraining in the meantime. It's more the function of feeding*."

In summary, the ST assesses and treats issues related to swallowing physiology and communication. The ST is the professional who should have the final say on the mode of feeding once they have assessed the patient. The DTs responsibility is to ensure that the patients get adequate nutrition through the mode recommended by the ST. The nurses are responsible for the general care of the patient and act on instruction from the doctors, they are usually the ones feeding the patients and may also be the first to notice signs of dysphagia. The PT ensures that the patient's mobilize and assist in clearing the chest which is necessary for safe oral feeding. Doctors attend to the patient's medical needs; they evaluate and treat the patients and will often have the final say when it comes to choosing the mode of feeding. The OT is responsible for assisting the patients to regain their previous level of functioning and helping them to become more independent as they transition out of the ICU into the general ward and then finally to home, they may be involved during feeding times while assisting patients to relearn to feed themselves.

From the quotes above it was made clear that each professional was responsible for their own role, with nurses taking their lead from the doctor. Whilst it could be seen that each professional worked independently from each other, they each contributed individually toward the decision on which mode of feeding was best for the patient. Aspects concerning

transdisciplinary patient management or lack of, are highlighted during the discussion as the concept of transdisciplinary care materialised in the quotes from the doctors.

The discussions revealed that while each profession has an individual role, there is ultimately overlap in certain areas of patient care where different professions may be responsible for different aspects of the same area which can be seen in the Figure 8 below (Overlap of MDT responsibilities).

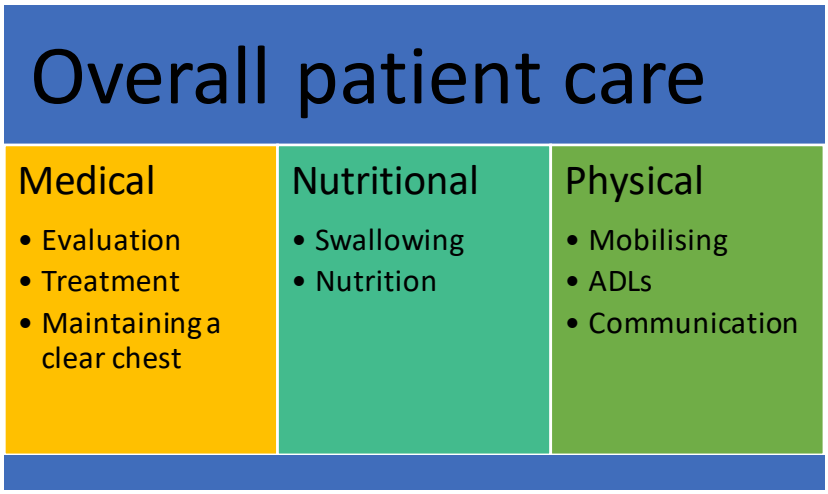

Figure 8

Overlap of MDT Responsibilities

The overall care of the patient appeared to be divided into three areas, medical, nutritional and physical. The medical needs include aspects involving the assessment, treatment and management of the medical condition. In this area of care, all the professionals play a role. The doctors would be involved in assessing the medical condition, while a physical therapist would also be involved in maintaining a clear chest. Under the nutritional section, the ST and the DT each have a role in deciding what and how the patient will eat. The doctors, nurses and even OTs may get involved here too. Under the physical area of care, the physical therapist assists the patient with mobilizing and the OT would also be involved here. The ST may need to assist with cognition and communication difficulties as well.

Theme 2: Decision-making in the ICU

Throughout the discussions and observations, I noticed some reoccurring underlying themes in the data. While the members of the MDT were able to explicitly articulate their roles and responsibilities, they were not always able to explicitly describe the teamwork concepts of the ICU in terms of interprofessional relationships, expectations and interactions. However, through my observations and focus group discussions, one was able to see how the different professionals interacted and what the dynamics were. Even in the individual interviews, the participants made suggestions as to how the ICUs function as a unit.

I gave attention to the concept of multi-, inter- and transdisciplinary care while attempting to understand the data. The ICUs that were studied appeared to use mostly an MDT work approach to patient care where each member acts within their role. There was some evidence of interdisciplinary care amongst the allied health professionals as well, where the DT and the ST would discuss their assessment and treatment plans and come up with plans of care together. In some cases, the doctors also suggested that they will seek counsel from allied professionals such as the ST when making decisions regarding feeding.

However, one of the more prominent teamwork concepts that came up was that the transdisciplinary concept, this was seen when one profession would take on the role of another profession, especially at times when that certain profession was not available. Where the final say in many decisions is often taken by the medical doctors rather than any other member of the team, the doctors used knowledge which went beyond their general scope in order to make decisions that would generally be made by other members of the team. Therefore, it appears that transdisciplinary care is used most often by the doctors while the rest of the MDT use more of a multidisciplinary and interdisciplinary teamwork approach. Supporting quotes and evidence from the observations will be presented below.

- **Sub-theme 1: Professional dynamics.**

Both ICUs in this study presented with aspects of multi-, inter- and transdisciplinary collaboration and each professional gave some insight into what they do in the ICU. The transcriptions below represent the participant's views on how they work together with the MDT to make decisions regarding feeding the critically ill patient.

The doctors explained that they are involved in deciding when, how and what the patient's eat.

P14 (doctor): "*My role is to assess patient's readiness for possible feeds and making a decision whether is it NG feeds or are they ready for oral feeds? I also decide on whether to hold the feeds or to decrease the feeds based on the patients' needs and clinical status and then if I need a DT to add more protein or less sugar or less glucose, those I'm involved in the decision-making process."*

P3 (doctor): *"From our point of view, we have to make sure that if an NG tube is not contraindicated we insert an NGT if they are intubated. Then we prescribe their feeds, especially over the weekend if there is no dietician, just to continue with the feeds that they were given. Otherwise, if it's still in the early phase, wait until the dietician comes to prescribe their feeds.*" P3 (doctor): *"Basically just to monitor if they are able to tolerate the feed and then possible, so there is one experience where the patient developed a TOF. So then we (referring to the doctors) had to make the decision that he should rather get a PEG and feed that way. So just the adjustment of feeding methods."*

One nurse explained that they do not act on their own, but they take the lead from the doctors, however, when they feel it is necessary, they may discuss the current treatments plans with the doctors and suggest changes that need to be made.

P2 (nurse): *"We don't do our own thing here, it's always according to what has been scripted. You can make suggestions and ask, because often the patient will communicate with you and say "I'm hungry." If nothing is scripted and they are NPO, you can ask when the*

patient is going to theatre, the sugars are dropping, and the glucose is dropping. You can get involved and request from the Drs, can we do something here. Can the situation change?"

STs expressed that they work closely in the MDT to ensure the patient is fed safely. P12 (ST): *"My role would be a lot of collaboration and MDT work as well, so when I assess the patient it won't just be to see if the patient can or can't swallow a specific consistency. I also have to look at the realistic side of it, whether the patient can actually finish an entire bowl of porridge or an entire feed. So whether they are able to sustain their alertness through an entire meal or whether they fatigue quite quickly. Those are the kinds of things I look for in ICU specifically, if they can't tolerate having the oxygen mask off for too long. It's then collaborating with the doctors to try nasal prongs or something like that to ensure that they finishing their food. And again collaborating with the dietician, I will rely on the dietician to let me know if a patient is getting enough in. Especially if we are going the conservative route of dual feeds first. So if we have an NGT patient with a severe dysphagia and we can see there's progress on to oral feeds, I'm more reluctant to take out the tube until we are sure that the patient is finishing the feed and that she is happy from a dietician's point of view."* P12 (ST): *This is why this relationship is great, because I feel like this is why I love having this specific dietician in ICU. She has great experience but also, to work in an MDT, you need to have an understanding of what you do and what the role is of others. So that's what makes it so much easier for us to manage our pts because even if I have done my assessment, I also rely on the dietician a lot to figure out, if we should do exclusive NG, or dual feeds, do we take out the tube and go completely oral. It's almost a discussion that we would have post my assessment as to what she needs in terms of nutrition, especially for patients that have more nutritional needs."*

DTs explained that they usually make sure the patients are safe for oral feeds by checking with a ST first before they prescribe any feeds or specific diet.

P10 (DT): "*For me, it's more about; is the gut working? And also if they are awake and alert, then I will always ask for a ST to assess if they are safe for oral feeds.* P5 (DT): *"If speech*

tells us after a swallow assessment that the patient is not safe for oral feeding and we need to insert an NG, then we would prescribe NG feeds."

PTs explained that they would refer to a ST and/or DT if they notice that a patient was not eating well. They noted that they were responsible for maintaining a clear chest which in turn, ensures oral feeding can commence.

P7 (PT): *"In ICU, I think our role would be, if we get a patient in the ward who isn't eating well then we would discuss with you guys (pointing to ST and DT)."* P8 (PT): "*With regards to chest physio, maintaining a clear chest means extubation can happen earlier and in turn oral feeding can commence earlier."*

The discussions above show evidence of MDT work as well as transdisciplinary team work in both ICUs. It seems to be that the allied health professionals work more as with a multi- and transdisciplinary concept while the doctors are more likely to take on the roles of the allied professionals and work more in a transdisciplinary manner, they often seem to take on the role of the ST and DT when it comes to decision-making regarding feeding. This was described as a necessary action in some cases when the ST or DT were unavailable, but the discussions also made it clear that the doctors in these units felt that they have just as much of a role or possibly more of a role than the ST when it comes to selecting the mode of feeding for a critically ill patient.

- **Sub-theme 2: Responsibility and communication.**

The greatest concerns that came up during the interviews and discussions were regarding the consistency of care and a lack of effective communication between the professions. However, while the participants highlighted issues with communication, they also showed how effective communication between the professions can benefit the patient. Therefore, it appears that the communication between the professions in the ICU is inconsistent and it seems as though the carry-over of instructions can also be. Importantly, participants who

communicated well with one another had better teamwork, and better interpersonal relationships than those who did not. The data below, illustrates some quotes which support this.

One of the participant's spoke about their concern with regards to the consistency of the feeds and the monitoring of NG tubes.

P2 (Doctor): "*In this ICU, I don't think our NG tubes are very well monitored. Once we put them in-situ I don't think that they stay in as long as they should and could, compared to other units I've worked in. So that makes me worry about the consistency of the feeds that we write up for the patients because sometimes I wonder with certain patients if bolus feeding would be a better option as opposed to hourly feeding*."

This raises concern for patients with dysphagia as well, in some cases a patient may have an NGT purely because they are intubated but for those patients with dysphagia, ensuring that the NGTs are well monitored and that they stay in-situ for as long as necessary could be a matter of life or death.

Another participant discussed that when treatment plans are changed, they must determine why things have been changed and who made the changes once they are at the bedside with the patient.

P5 (DT): "*Check to see if the feed is running, checks to see the rate it is running at and if it is at the goal rate for optimal feeding. If not, then why is it not, are they not tolerating, did the nurse forget to change it, did the doctor say it shouldn't change?"*

A lack of clear communication could be seen as a hindrance to patient care, it is important for the patient and the professionals working in the ICU to have clear channels of communication. In the case where a doctor or a ST has made an alteration to the mode of feeding, it may also be necessary to check with the DT first as they may require a certain mode of feeding for specific reasons that the doctor or ST is not aware of. The MDT should

try to communicate with one another before changes are made rather than having to find out what has happened after the fact.

Once again, this participant relayed experiences where changes were made with regards to feeding before the entire team was made aware and was given the opportunity to agree with the decision or not, or at times the participant felt that their advice was ignored.

P5 (DT): "*Just one set back is that sometimes if you want to dual feed, if they on NG and they see the patient is tolerating trial oral feeds quite well, but they really only took a few spoonful's of something. Then they sometimes remove the NG too early. In that way I don't have much of a say. Sometimes they listen and say ok we will keep it in for a day but then a lot of the times when you come back the next day it's out. And then you still struggle with getting the patient to feed enough orally because the patient could be so katabolic that a full ward diet is not enough, you still need supplements. Studies have shown that up to 2 years after ICU admission, they are still katabolic. So full ward diet after removing the NG is generally not enough.*"

P9 (ST): "*What I am also finding is, like with my patient, we moved from liquids and then nobody was ordering food for the patient, even though I said the patient could have food. So, it took a few days to say look, this patient can tolerate. I have assessed. Despite me writing. So, I think one of the things we need to do, which we do sometimes, is to actually put a chart on the wall. To say please ensure that day staff, please handover to night…"*

Once again, this inconsistency or lack of follow through with treatment plans can be problematic as the patients may struggle, for example like in this case to maintain proper nutrition if the guidelines of the entire team are not taken into consideration.

This excerpt from the data provides a good example of how effective and efficient clear communication between professions could be for the patient.

P9 (ST): "*Once we've done the swallowing assessment and we decide on the best consistency, we can liaise with the DT for the feed, because they deal with what the patient*

swallows. Then we will work with the nurses and give advice on how to feed. For example, if the patient is getting NG feeds, they should keep the patient elevated because if they are flat and they reflux then they can aspirate. We can also involve PT and OT to help with positioning or making things to help the patients eat independently. And you may need to explain to the doctors why you have made a suggestion such as a PEG or an NG. Our role is to also make sure that we communicate with the MDT to make sure that the instructions you gave have been understood."

What stood out to me in this discussion was how the participant felt that communicating with the MDT was part of their role and it is an essential aspect to ensuring appropriate care for the critically ill patient. When communicating with all the team members in this manner, the professional can have more certainty in their decision-making process.

This same participant also mentioned that the way the message is conveyed can be just as important as what is being conveyed.

P9 (ST): "*And also, I think the way you communicate with everyone that is here."*

I think this is an important aspect to be aware of, because even if a professional is trying to communicate with the other team members, the message needs to be conveyed in a way that will ensure it is received. Clear and concise communication channels could assist in ensuring that these kinds of messages are received properly.

Even though communication appears to be strained at times and some treatment plans are not always carried over, it was evident that the allied health professionals still felt that their opinions were appreciated.

P9 (Physio): "*I think in ICU, also I find that there's better MDT collaboration compared to the wards. So, it's a lot easier to reach out to the ST or DT if you see a problem. Compared to the wards*."

P5 (DT): "*They value allieds*."

P6 (Nurse): "*They do*!" P5 (DT): "*A lot more than the wards."*

From these quotes it is evident that when changes happen with regards to patient's treatment, the MDT are not always aware, or they may find that the changes are in contradiction to what they have suggested. However, it appeared that while the medical doctors usually make the final decisions regarding a patient's mode of feeding, the other members of the MDT are more likely to collaborate and have discussions with one another and then make decisions together. Verbal communication and having discussions also appears to be more effective than only writing recommendations on the chart. Nevertheless, the allied healthcare professionals working in these units do feel valued and when the entire team's suggestions are considered, it can result in the best possible care of the critically ill patient.

Theme 3: The Role of the ST in the ICU

The final theme that emerged from the data around the process of decision-making was the role of the ST in the ICU. Having ST so involved in the ICU is a relatively new concept in SA but also globally, as the scope of practice for the ST has evolved over the years and with more research we are learning the value of having ST services involved in the care of critically ill patients (McRae et al., 2020). One of the participants recalled the ICU setting about 30 years ago, when asked if there were STs that they could refer to.

P1 (nurse): "*Not in that setting, you know it's the early, I'll tell you exactly when it was. It was in 1988/1989. It was in my student years. And there probably were speech therapists but they didn't come around. I don't know if there were speech therapists. And we thought their role is for cleft palate or that type of thing, not concerning swallowing."*

The information below provides some excerpts from the data to support this theme. During the observations, the researcher also listened in on patient discussions, ward rounds and handovers. Unfortunately, the researcher did not observe the ST in the wards therefore,

it could be assumed that the ST does not partake in these decision-making activities, however the doctors did seem to be aware of referring to ST, in one patient handover discussion a doctor said; "*…the patient is not yet talking, so I didn't try the full ward diet so I think we should get an ST assessment."*

The MDT in the ICU's appear to have a lot of respect for the ST and noted the contributions made by the speech therapy profession.

P1 (Nurse): "*At this case, now and I must tell you where you (speaking to the ST) add a lot of value and make a contribution and it's not to make you feel good. It's research. You are on the floor, you are visible, we know your role and you engage with us so in the past we wouldn't have thought of it. We would have done an X-ray first to look and see what's wrong, we would have done an X-ray and we wouldn't have considered speech at that point because for us and for me with my years of experience. I always think that speech therapy is specifically pronunciation and pathology around appearance, physical appearance, that pathology. I wouldn't have imagined it to be with swallowing and yet your role is so significant so now we will refer and say speech therapy because we know the service is available and it is your visibility and you are here*."

P5 (DT): "*I think why it's also good to add ST in when we have patients that have been intubated for long periods of time. Often they have swallowing issues, and possible TOFs. It's helpful to have ST input from the beginning. Instead of having problems with oral feeding and then wasting a whole week, when the patient is not tolerating and then going back and forth. So to have your input from post extubation, that's also helpful*."

These extracts support the concept of the ST being an active member of the MDT in the ICU and shows how important it is for the ST in the ICU to make their presence known.

Some of the STs themselves shared information about their role and what they feel is their most important responsibility in this setting.

P4 (ST): "*One of our biggest roles is doing a bedside swallowing assessment and seeing if the patient needs any other assessments in terms of subjective or objective assessments. We decide if the patient is swallowing safely, see if they are aspirating or not. Then liaise with the DT to decide on a mode of feeding*."

This ST takes ownership of their role when it comes to swallowing assessment and treatment in the ICU, this kind of belief is important if the ST profession wants to be taken seriously in this setting. The ST needs to advocate for their profession and their professional opinion.

Another ST shared some information pertaining to their role in the ICU.

P9 (ST): "*…we make sure that the patients are swallowing safely, dealing with how you swallow. The swallowing physiology. We recommend if the patient should be fed orally, via NGT or with a PEG. Also helping with their communication. Once we've done the swallowing assessment and we decide on the best consistency, we can liaise with the DT for the feed, because they deal with what the patient swallows. I think, if a patient, needs an NG. You must involve ST. Because we work hand in hand with the DT, because if they are not awake. That's fine. But if they are awake. Maybe we can come up with strategies for them to swallow. So if you feel you have to put an NG, just refer to ST. Even if we monitor them until they are awake. I think it's nice to work with that patient until they are able to swallow.*"

This participant took the opportunity to advocate for their profession during the focus group discussion and explained how all patients with an NGT should be evaluated by the ST before they change the mode of feeding.

This participant explained why the ST should be involved with critically ill patients.

P12 (ST): "*Just because we know that patients who are post extubation are at extreme risk for aspiration. Or for some form of dysphagia, so it's a lot of dysphagia rehab. The assessment, treatment and management of those patients. And then a lot of these patients can have tracheostomies and can be exposed to diseases that would cause vocal fold issues.*

So with the tracheostomy patients we will do blue dye tests for them, voice rehabilitation and tracheostomy weaning. And voice restoration if possible and then some speech and language. Depending on the rate and the level of arousal of the patient. If they are very critically ill we may do some AAC or we might try and get some communication skills for them."

An example of what the charts look like can be seen in figure 9 (Example of the medical chart), this example focuses mainly on the section where feeds/nutritional information is written for the patients. I took this example down while doing my observations of the units as it was interesting to see which members of the MDT made notes about feeding.

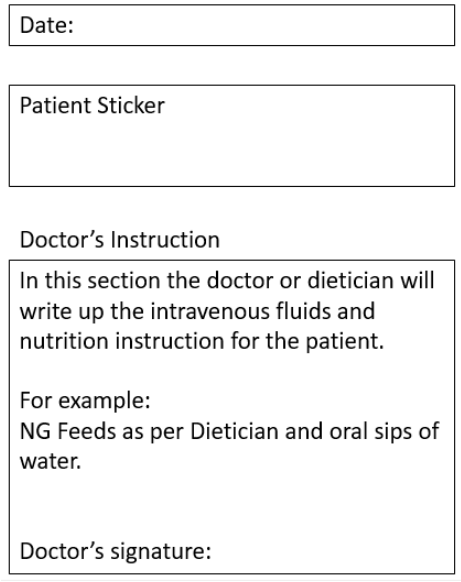

Figure 9

Example of medical chart

When reviewing the medical chart and feeding instructions, it was apparent that this responsibility was taken by either the medical doctors or the DTs. Nutritional instructions were also completed by the doctor or the DT for each patient. Questions arose as to why the ST was not included in this responsibility/task.

When queried with the doctor, they explained that they may also take on allied professional roles when necessary (transdisciplinary care). Thus, they would make decisions regarding feeding for a patient. As noted earlier, this is usually the role of the ST. Some concern over the response from the doctors was noted. During one of the individual interviews, a doctor was describing their experience with a patient who had dysphagia and needed a PEG. The doctor described that the patient was not tolerating oral feeding and that they were struggling to maintain the nutritional requirements with NG feeds, so they had decided that a PEG would be the best option for feeding.

I then asked if the patient had even been referred to the ST and the doctor responded, "*Actually yes, he was (referred to ST) at the beginning, he was seen by ST and the reason being is as part of general surgery opting to do the PEG we had to have an ST assessment, so it was part of our workup. So ST had come initially, and that was the same day we had ENT to do the DL so that we could confirm that there was this likelihood of this diagnosis (dysphagia) so that we could persuade general surgery to give us this long term option for him*."

From this discussion, it was apparent that the ST was seen as a box that needed to be ticked off in order to get the patient a PEG, rather than the ST being seen as the individual who would diagnose, treat and manage dysphagia. Considering the limitations in this environment, one can understand that the doctors may be looking for a quick and easy solution in order to get their patients ready for discharge. Dysphagia can be a time-consuming issue and, in some cases, the treatment and management can take months or even years.

This theme described the role of the ST in the ICU according to the STs themselves and according to the other members of the MDT. The data revealed that the allied professionals appear to have better understanding and respect for the ST than the doctors.

For the second half of the results the researcher will present the themes that answer the final aim of this research study. The last aim was to identify the factors that impact on the CDM process, and the themes below identified these factors and how they impact on the decision-making process as well.

Theme 4: Feeding the Critically Ill Patient

The main topic of this project was CDM around the feeding of the critically ill patient. The theme feeding the critically ill patient is a collection of the patient related factors that appear to have the most impact on this CDM process. These concepts include clinical factors (of the patient), dysphagia experiences and feeding protocols.

- **Sub-theme 1: Clinical factors.**

An important theme that emerged was that of specific factors that assisted a professional in making the clinical decision of how to feed the patient. Each professional listed common factors, which were patient specific and linked to their underlying medical diagnosis and condition, when considering how a patient should be fed. These clinical factors were the foundation underpinning the decision-making process of how to feed a critically ill patient. There was some similarity of clinical factors across the professions. Figure 10 provides a summary of the clinical factors considered. In this sub-theme I will discuss these factors and provide quotes from the focus groups and individual interviews to support the data I have presented.

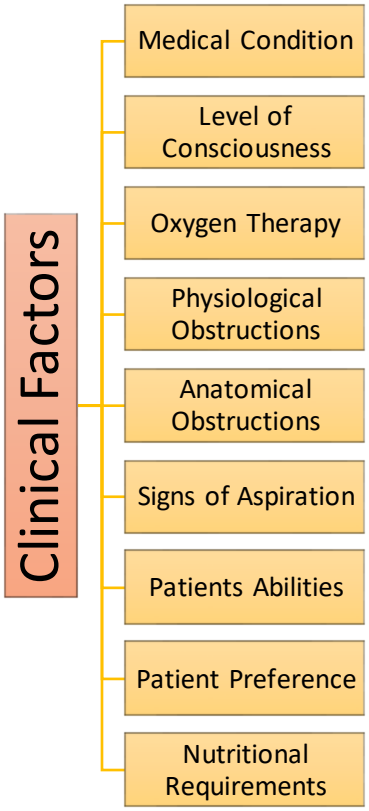

Figure 10

Summary of clinical factors when deciding a mode of feeding

While observing the ICU I also took note of the different medical conditions of the patients as well as factors such as their GSC level, if they were given any form of oxygen and what mode of feeding, they were on. The medical condition and oxygen dependency were raised by the participants in the focus groups and interviews as important deciding factors used when making the clinical decision of how to feed the critically ill patient in the ICU which will be discussed in detail below. For the purpose of understanding these quotes, the term level of consciousness (LOC) is often used interchangeably with GCS. In essence, the GCS score of a patient is a measure of their LOC and it can be understood as such in this document.

Table 5

Patient Observations

Patient	Medical Condition	GCS score	Oxygen	Mode of feeding
#1	Stab Neck Haemopneumothorax Thoractomy	15/15	Nasal Cannula (NC)	On SWD Query need for NGT in notes.
#2	Craniopharyngioma D23 post resection Suspected meningitis	10/15	CPAP+PS	NGT
#3	Status Epilepticus Aspiration Pneumonia Herpetic Lesion	7/10T	CPAP+PS	NGT
#4	ADHF Ventricular Heart Disease	5/15	VCAC	NGT
#5	Newly Dx RVD+ TBM Bacterial Meningitis	5/10T	CPAP+PS	NGT
#6	Ludwig's Angia DM AKI	7/10T	CPAP+PS	NGT
#7	OPP NOS Ethonol	7/15	CPAP+PS	NGT
#8	Status Epilepticus RVD + Eclampsia	14/15	NC	NGT
#9	Status asthmaticus Requiring intubation Acute Kidney Injury	10/15	CPAP+PS	NGT
#10	GBS – Bckerstoft Severe HL	15/15	RA	Dual: Oral and PEG
#11	OPP	15/15	RA	FWD
#12	TBM Hydrocephalus NOS	10/10T	CPAP+PS	NGT
#13	OPP NOS AKI	14/15	CPAP+PS	NGT
#14	AI Disease ?Scleraderma Status Epilepticus	15/15	NC	FWD (Renal)
#15	Poly Pharmacy OD Aspiration Pneumonia Folliculitis	10/10T	CPAP+PS	Dual: NGT + oral

Table Key:

D23: Day23, ADHF: Acute Decompensated Heart Failure, Dx: Diagnosis, RVD: Retroviral Disease, TBM: Tuberculous meningitis, DM: Diabetes mellitus, AKI: Acute Kidney Injury, OPP: Organophosphate Poisoning, NOS: Not otherwise specified, GBS: Guillain-Barré Syndrome, HL: Hearing Loss, AI: Autoimmune, OD: Overdose, CPAP: Continuous Positive Airway Pressure, PS: Pressure Support, VCAC: Volume Control/Assist Control, RA: Room Air

In Table 5, one can see a summary of the patient's that were in the ICU at the time of observation. The table includes information regarding the medical diagnosis, GCS level, mode of oxygen and feeding.

Some quotes from the participants during the interviews and focus groups confirming these clinical factors that were important to consider in the decision-making process for feeding can be seen below:

The ST explained that they need to consider the **patient's abilities** in a realistic manner, their **level of consciousness**, **anatomical obstructions, signs of aspiration** and **oxygen therapy** when deciding on the best mode of feeding.

P12 (ST): "*I also have to look at the realistic side of it, whether the patient can actually finish an entire feed. So, whether they are able to sustain their [level of] alertness through an entire meal or whether they fatigue quite quickly. Those are the kinds of things I look for in ICU specifically if they can't tolerate having the oxygen mask off for too long. It's then collaborating with the doctors to try nasal prongs or something like that to ensure that they finishing their food."*

P9 (ST): *"I think part of our role is to, we see the LOC, is the patient actually awake to be able to eat, and is the patient following instructions, for them to swallow when I tell them to swallow. Sometimes the patient can't swallow because everything is swollen due to the intubation. So,*

we can help them and also like you mentioned, they could have a TOF. We can do a blue dye test and see if they fail, then we recommend a barium and involve ENT [Ear, Nose and Throat specialist] to see if there is a TOF."

P9 (ST): "*So like from oral to NG, is the patient aspirating? And it's not just about them coughing. We look at silent aspiration. Are their eyes watery? Do they have a runny nose? Are they wheezing? Is their colour changing? So, we have to look at the silent aspiration as well. Are their SATs coming down when they eat? Is their LOC changing when they eat? And if all those things are happening then it's probably best to go back to NG because they don't always cough. So that can be missed. You have to look at the silent aspiration, I think that's really important."*

The DT explained that they look at **oxygen therapy, patient preferences, nutritional requirements** and other clinical factors when deciding what to feed the patient.

P10 (DT): "*Basically, it depends if you see the patient, they are ventilated and have an NG tube in place. My first reasoning will be, I look at the different clinical signs as well before I actually start the feeds*."

P5 (DT): "*Obviously, a lot of ICU patients are ventilated, sedated. So, then they would need alternate modes of feeding like NG or TPN…I think it's sometimes though, because you are that ill, you just really don't want to eat. And then, I think that some of the time, why we do then ask for NGs…Also, if they are not eating enough orally. If they only have like 2 spoonsful of cereal or a spoonful of rice or yoghurt. It's really not enough, because they are usually so katabolic that their requirements are so much higher… Also, if the patient is previously malnourished then you would also want to feed them more intently and more aggressively than waiting longer*."

The doctors look at factors like the **medical condition, physiological issues, and anatomical obstructions, level of consciousness** and **nutritional requirements** of the patient.

P14 (doctor): "*I also decide on whether to hold the feeds or to decrease the feeds based on the patients' needs and clinical status and then if I need a dietician to add more protein or less sugar or less glucose, those I'm involved in the decision-making process."*

P15 (doctor): "*Assess a patients needs but we don't actually calculate the caloric needs, the DT, we get collaboration from them for that. And we would also take things into account like electrolyte disturbances or needing a high protein or low protein diet, so we would advise on that. So, we get collaboration from the dietician on things like that. Importantly it's about whether or not the patient is able to take feeds orally or if we need an NGT and to monitor tolerance of those feeds as well*."

P3 (doctor): "*Number one, if they are intubated, obviously if it's an ET tube they won't be able to feed. We do move towards feeding patients orally if they can tolerate it, if they are awake and co-operating, even if they have tracheostomies…If they have a tracheostomy, they are awake, they are co-operative and they can maintain their muscle tone, we tend to give them small morning feeds and monitor how they go."*

P2 (doctor): "*For me, coming from surgery it's quite well illustrated in my head in a very mechanical sort of way. So, I think about if there is any reason why the patient may not be tolerating from the mouth, so is there something obstructive blocking the patient? Is the patient having ongoing nausea, vomiting, do they not like the taste of what they are having if its oral feeds? And then, as you move down, when you think about NG feeds. NG feeds are great. Medi-feeds are great but for more of a short to medium term, in my head. If you are trying to, obviously oral is always best, so if you are able to feed orally but you looking at that sort of time frame. But if the patient is going to need sort of a longer time frame, PEG feeds are much*

better because you are delivering the oral feeds directly to the stomach. So that is always a great option, especially from that perspective…"

The OT indicated that the patient's **physical abilities** are an important factor to consider.

P11 (OT): "*My role is a little bit more difficult because we obviously are doing the ADL itself of actually feeding and the hand function of manipulating the utensils and stuff like that so they have to be of the right GCS level, they have to be able to follow instructions, they have to try physically and that also depends on their condition and what level of functioning they on*."

Nurses listed the **medical condition, anatomical obstructions,** and **oxygen therapy** as some of the factors they consider.

P6 (nurse): "*The patients come in and the condition of the patient will determine the mode of feeding but usually it is NG the first time*…"

P1 (nurse): "*There are certain indicators that show us if a patient is a candidate for TPN that excludes, he cannot be fed nasogastircally, and he certainly cannot have sips of water. Often, they are intubated*…I think we look at the clinical indicators."

These quotes are a few examples of the common factors listed by the different professionals who are part of the MDT in the ICU. There were many factors that were listed by multiple participants but there were also some factors that only one participant or profession looked at. Figure 11 (Clinical Factors by Profession) provides an illustration of the factors listed by each profession from least to most common.

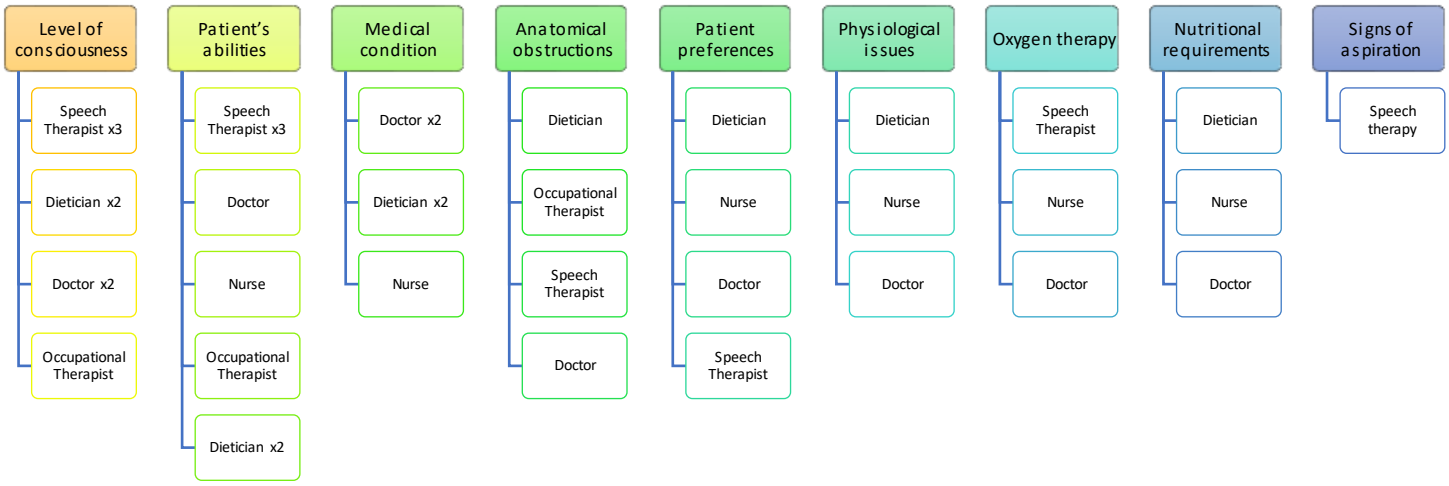

Figure 11

Clinical Factors by Profession

This figure provides an illustration of which factors were considered by the various professionals in the ICU. While all professionals highlighted several factors such as the level of consciousness and the patient's abilities, only the ST considered signs of aspiration when deciding on a mode of feeding.

- **Sub-theme 2: Dysphagia.**

Working in the ICU, dysphagia is a condition that one should expect to come across from time to time. Almost all the participants, except for two (a doctor and an OT), had some experience with dysphagia and they shared their experiences. Since the OT is not usually involved in swallowing assessment and treatment, this finding could be expected but it was unexpected to find that a doctor working in the ICU had no experience with dysphagia. The participants were all asked if they had ever had experience with dysphagia, these responses can be seen below. The one participant who had been working in the ICU for four months who reported that they had not had any experience with dysphagia in critically ill patients, explained

that they had never had a patient with dysphagia. This was an interesting finding as it differed from all the other responses, every other person in the ICU reported some experience with dysphagia in critically ill patients. The reason behind asking this kind of question was to try and see how the participants had dealt with patients with dysphagia in the past and to attempt to see them describe their decision-making process in real life situations.

One of the nurses who was the participant with the most years of experience explained that they had multiple experiences with dysphagia.

P1 (Nurse): "*Yes. Often and many times. Difficulty in swallowing. Where I was sometimes the first one to pick it up. Where a patient will try to have sips of water and they will struggle and you can see the pain in their face. Dysphagia comes with so many other symptoms, they try to swallow, it's painful, and it's incredibly painful when they can't swallow. And they feel that they have failed or they have disappointed because it's happened for the first time or something*."

The nurse also noted how they are often the first one to notice signs of dysphagia, which makes sense because the nursing staff are usually the ones who assist the patient's during mealtimes.

Two of the participants illustrated a personal experience with a patient who had dysphagia and was presenting with some of the clinical signs listed above.

P10 (DT): "… *I give her the yoghurt and I stand and watch her and she legit aspirates on the yoghurt. So you can obviously see there is a dysphagia problem."*

Researcher: "*Please elaborate on what you mean when you say she aspirated. How did you know?"*

P10 (DT): "*…So after a few seconds she started coughing profusely and she couldn't clear it from her chest. And I know you check the SATs, her saturation dropped from like 90 something to about 70 and then eventually she got it down and it cleared. So I took the yoghurt*

away and I informed the ST that I think this patient is aspirating, can you please come and assess this patient? So she did come and see the patient and said that the patient is not for oral feeds, please insert the NGT. And the next day when I got there, the NGT was still not inserted. So I happened to catch the doctors on the ward round during their consultation and this specific doctor, also while I was there I just stood one side because I was still busy with my assessment. Then I hear them say, the patient can eat and I stopped them and asked them, are you guys not going to insert the NG? And they said no, the patient can swallow and I told them no she can't swallow. Read ST notes. And they kind of just ignored it, so I told them, listen here; I saw the patient aspirate with my own eyes. And then after that, they were like oh really!? And I said, yes! That is what ST told you yesterday. So eventually after a long 2/3 days, then they managed to put in the NG tube again. Also, in the ward round, they were questioning it. But why is this patient not improving? Because she was aspirating. So that was an experience. I don't know if you can remember that patient?"

(Looking at ST) P12 (ST): "*Yes, it was a fight! Because the thing is, your nursing staff are reporting that the patient is eating right? And there is evidence on the BALFEC chart that the patient is eating, but eating and eating safely are two different things. So the DT and I found ourselves having to basically say look, it's not safe eating. If you are clearing the patient to eat without our consent then if anything further happens, unfortunately then that's not on us."*

This discussion supports most of the information that was presented in earlier themes. The participants mentioned factors that they look at when deciding on a mode of feeding, they highlighted the MDT collaboration between the allied healthcare professionals and how the doctors appear to make their own decisions regardless of what the ST and DT have recommended. It also shows that there can be inconsistencies in care, as they mention that an NGT was requested but it took time before that instruction was followed. However, it also highlights the need for the ST to be represented in decision-making activities such as the ward

round and that there is a need for the ST to develop clear and concise communication lines with the doctors who are responsible for making the ultimate decision regarding feeding.

- **Sub-theme 3: Feeding protocols.**

The units involved in the study appear to have protocols in place for progressing feeds, but they did not seem to have protocols in place for deciding on a mode of feeding. Progressing feeds is the process of increasing the volume of the feeds over time, while monitoring the tolerance of the patient. As we have seen from the literature, selecting the appropriate mode of feeding for a critically ill patient is an immense decision to make. Being in a teaching environment, protocols should be developed to ensure that the best decision is taken every time. The participants were all asked if they knew of any protocols in place when it comes to deciding on a mode of feeding. Only one participant was aware of a feeding protocol, but this participant could only provide limited information about the protocol. The discussion on this topic can be seen below with direct quotes from the interviews and focus groups.

P1 (Nurse): "*I don't think there is a, to my knowledge, I don't think there is an SOP [Standard Operating Procedure] or a protocol on the feeding things, we will just state what we already know clinically and we apply that. But I don't think there is a document that guides us, I think we lean on our clinical expertise, on our years of exposure, but I don't think there is a document that says these are the guidelines*."

This participant explained that they lean on their clinical expertise and years of experience. However, for a newly qualified professional this would mean that they then lack the skills needed to make the decision.

P2 (Doctor): "*That's a good question, I actually haven't, in my month and a half, been exposed to any particular protocol. I just know in general, based on my discussions with other*

DTs here at this hospital, sort of what parts of the Aspen guidelines they like which is more sort of just through my own personal discussions. It's not really something that prof has said X, Y and Z. So it's definitely something that we as a unit should improve on. I definitely know the guidelines that we all have to keep in mind but I don't know what our department policy is." This participant explained that they have had personal discussions with DTs when it comes to progressing feeds but there was no mention of the ST and how they would decide on a mode of feeding.

P3 (Doctor): "*No, none that I am aware of."*

P5 (DT): "*There isn't a specific one to choose the type of feeding, but we have one to tell you about how to progress enteral feeding. So once you start, there's a gastric feeding, what rate do you start at, how to progress feeding and it helps you get to the goal rate of feeding. There is an enteral feeding protocol but there isn't one to decide on the route of feeding. I think we just use discretion. Ja, it's different for everybody. We just use our own discretion*."

Once again, another participant spoke of a protocol for progressing feeds rather than a protocol for selecting the mode of feeding. This finding highlighted the lack of awareness around feeding as well and how most of the ICU staff think about nutritional aspects when it comes to feeding but they often left out considerations with regards to swallowing, unless they were specifically asked about it.

Some of the participants explained that there is no protocol specific to the ICU but that there are protocols specific to the speech therapy or dietetics department.

P10 (DT): "*We have our own protocol, but it's not ICU related specifically. We have a protocol for how we decide a mode of feeding and an SOP with ST on who decides what and how to go forward etc. But I haven't seen one specifically for ICU or for the hospital."*

P12 (ST): "*No, we use our standard dysphagia protocol*."

P10 (DT): "*I think it's more departmental*."

The one participant who was familiar with a protocol for deciding on the mode of feeding gave some information about it.

P13 (Nurse): "*We do have, when a patient is intubated they need an NGT, that's standard, that's part of standard of care. Then they receive their feeding from there. It varies when a patient is now extubated, because now it's all dependant on what they tolerate. If they are intubated and their procedure hasn't affected the bowel then it's strictly NG. If they are intubated and it's affected the bowel then we need to consult with the surgeons, would you prefer TPN, is it safe to feed to the bowel and we take it from there. If they are extubated, it also depends on if there is anything affecting the bowel and it would either be oral based on their tolerance or they will carry on with the TPN*."

This protocol appears to be a basis for the decision-making process, but it is lacking in terms of issues specific to swallowing function and it seems to be more concerned with the gut.

Another interesting finding with regards to this issue was the organogram of the ICU (Appendix S). Only one site had the organogram visible in the ICU and the organogram was not clear as to who one should go to if there are uncertainties or questions that need to be asked. There also appeared to be confusion between the progression protocol and a protocol for selecting a mode of feeding. Which indicated to me that there is a better understanding and awareness of progressing feeds then there is around the decision of selecting a mode of feeding. One of the participants spoke about using their own discretion when making this decision which raised some concerns for me as the researcher, the decision should be based on specific factors, and it needs to be standardised. This decision cannot be made, according to the individual's judgement at that point in time, it needs to be done in a structured way and it should be guided by literature and current evidence-based practice.

Theme 5: Non-patient related impacting factors

When deciding how to feed a critically ill patient there were external factors which were not related directly to the patients that were also found to impact on the CDM process. There were both positive and negative factors and these factors were either environmental or personal (to the professional) and were just as important to consider as the patient related factors when selecting a mode of feeding for the critically ill patient. Within the theme of non-patient related factors, a hidden theme emerged which related to how the professionals would work around the external factors that would have had to change their final decision. This developed as an additional point to note in the decision-making process because the professionals would identify an external factor that might have changed their final decision, but they would then try to come up with a plan to work around the external issue and still end up with the best outcome. These external factors and accommodations arose during the interviews and focus groups. The sub-themes that emerged include external factors that impact the decision, and how they are overcoming these factors. Each sub-theme will be discussed in detail.

- **Sub-theme 1: Non-patient related factors.**

Figure 12 (Non-patient Related Factors) below provides a summary of all the factors which arose during the interviews and focus groups.

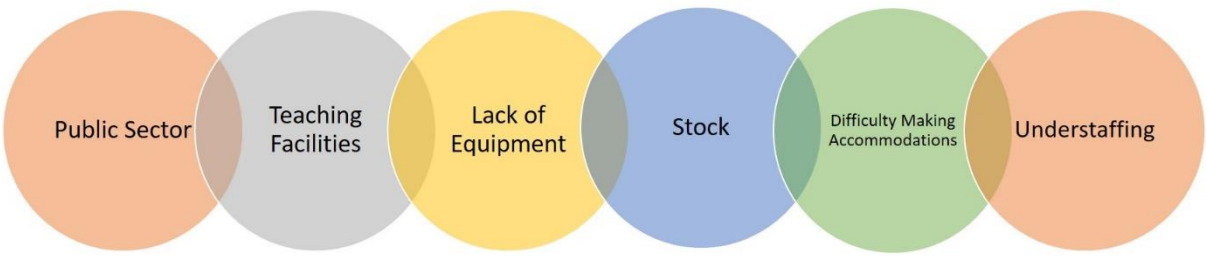

Figure 12

Non-patient related factors

Each factor will be presented below as they arose during the interviews and focus groups with supporting quotes:

- ***Public Sector***

In response to the question on which factors affect their decision-making with regard to feeding the patient, the responses from participants are reflected below:

P12 (ST): "*So I can compare government to private in that government is great that we have our doctors here, there is a doctor's room and everyone is around so that makes our decision-making process so much easier because you are actually able to have that face-to-face discussion with the doctor."*

P10 (DT): "*From my side, I also appreciate compared to private. Here in government, I have the opportunity to screen every patient in the ICU. I don't need a referral from a doctor to see a patient, just for NGs. A lot of the times that I screen patients in the ICU, not because I can see they have an NG in place but because I can see they are generally malnourished, and they will need the help in the future."*

The participants who have had the opportunity to work in both the private and public sector were able to make a positive comparison and commented on the fact that interprofessional communication is easier in the public healthcare setting. This is an interesting finding as a previous theme describes issues with communication, however here it is mentioned in a more positive light.

- ***Teaching Facilities***

The participants were then probed on the factors relating to working in a teaching environment. Responses were as follows:

P10 (DT): "*I do have a negative, the negative thing is that some of these doctors are still training. So, they still have a lack of experience, so they will go over and above your scope of practice and change things that they don't understand*."

P12 (ST): "*I think it's great that we have an academic environment and the potential for research, to screen patients and to learn as professionals, because you may see something super rare come through and you not sure what's happening and you get to continuously learn."*

The participants here have differing opinions about working in a teaching environment, on one hand it can be difficult to work with medical professionals who lack experience. While on the other hand it can be a positive for the participants when they get exposure to rare conditions.

- ***Lack of Equipment***

  The participants were encouraged to discuss factors relating to the equipment that is available and if that ever impacts on their decision. Their responses were as follows:

  P10 (DT): "*Recently we had a challenge with equipment, in ICU a lot of these patients are on NGT, and the issue is that we don't have feeding pumps, which is one of the challenges we have at the moment. So, we don't have any of our own feeding pumps, all the ones we have are on a loan basis. But the problem is, if the companies are not getting paid, they will take the pumps back. So, our current issue is that we don't have enough pumps to feed all the patients in ICU with a feeding pump, so that's an equipment challenge*."

  P1 (Nurse): "*The only problem here is sometimes we do not have the giving sets for the NG bags. I have found that to be a weakness, that sometimes we don't have that. It will*

impact on the decision to give NG feeds, because if we don't have the giving set for the NG feeds then we can't give the NG feeds."

Following this response participants were then probed on access of altered diets.

P10 (DT): "*We don't have a blender for puree. Because our diet options were only liquids, thickened liquids, like mixed fluids diet with or without porridge, soft ward diet and full ward diet. So, if your patient was aspirating on liquids but couldn't cope with solids, then you had to keep the patient on an NGT. Or if the patient was on a mixed fluid diet but they wanted to eat food but weren't at the level to eat a SWD [Soft Ward Diet], then they were stuck on that mixed fluid diet for weeks until we could make a plan."*

P12 (ST): "*That kind of affects what kind of a diet you putting a patient on. It can be the extreme sometimes, if you put a patient on the soft ward diet, sometimes the soft ward diet is just not soft. There's no two ways about it. Then we have to communicate and say out of this entire plate for example, the patient can only eat the vegetables. Which for the DT can obviously be a problem, because the patient isn't getting enough protein which is very important."*

P5 (DT): "*I think just another thing to mention, was that the other thing is, if we choose for example the puree diet or a softer diet. That is not always available at the hospital. Because we don't have access to it all the time from the kitchen. So, because of that, that could be consider an environmental or financial factor. Sometimes we will have to contact the family and ask them to bring A, B and C. So that the patient does have food to snack on or eat."*

The issues related to a lack of equipment here have a direct impact on the CDM process. In a typical scenario, the ST would assess the patient and based on the clinical factors they would decide on a mode of feeding. However, once they get to the point of providing the selected mode, they then face these obstacles and will then need to figure out how to ensure the patient is going to actually get that mode of feeding.

One of the participants also described how the equipment related factors can also delay the process once the mode of feeding has been selected.

P2 (Doctor): "*So I think sometimes our environment definitely plays a big part of that decision-making…even just availability of equipment to confirm things. So, if we are putting in an NGT and you need an X-ray so you can start feeds, it's actually so hard to get that X-ray, and if it's not them struggling to come on time, it's actually PACS [the system the hospital uses to view results] not being online. So there are a lot of factors that affect timeous feeding and initiation of feeding."*

A lack of the necessary equipment was raised by three of the participants and appears to be a serious issue when it comes to the decision-making process regarding feeding the critically ill patient. Of all of the non-patient related factors it appears to have the biggest impact on the decision-making process, and it requires additional decision-making once the issues have been identified.

- ***Stock***

The participants were asked to discuss factors related to the availability of stock and whether that impacts on their decision-making process. Their responses can be seen below:

P10 (DT): "*The only problem is that sometimes we don't have enough food in the kitchen, I don't do the orders, but we don't always have yoghurt and custard available. We don't always have a certain type of vegetable or meat available to accommodate all the different types of diets. For example, if there is no soft porridge then the patients on the SWD will get spaghetti or macaroni. Sometimes they will even get bread if there is no other starch options available*."

P13 (Nurse): "*I know there are some feeds that are out of our price range because the lack of resources…I think, even the NG feeds. I'm sure we could get something better. That would give a better result because for the life of me, I have never seen a patient actually gain weight from the feeds that we get. I have seen patients waste away. We giving plenty of feeds,*

so I don't know if we are really serving the purpose, to be honest with you. So, I think we are kind of restricted in that."

P5 (DT): "*I think with the DT, some of it depends on what types of feeds we have available to us. We don't always have all the types of feeds available to us."*

In terms of stock availability, the main concern was food availability. The participants have explained that they do not always have access to the type of food that they would prefer to give the patients.

- ***Difficulty Making Accommodations***

The one participant also discussed how difficult it can be to make a specific accommodation for one patient who requires a special diet. These discussions can be seen below:

P10 (DT): "*I think in terms of resources that does constrain your ability to accommodate a patient. I think also time resources, if we could be in ICU all the time, training the doctors and nurses, doing proper in-service training. But in terms of staff compliment and the amount of pts it's just not possible."* "*Just to add to the STs frustration about the SWD not being that soft, if you think about how the kitchen operates. They have to feed 600 patients, so they can't really make specific accommodations for a certain patient. They try and do the best they can with the resources that they have but they can't cook a small pot for just a few patients, so they have to think about what they can do in bulk."*

This participant also explained how they will personally go to the kitchen and look at the plates and try to ensure that the patient is getting something that is not only appropriate for their selected mode of feeding but that they will also get some nutritional value out of it.

- ***Patient monitoring***

The participants also expressed that there are challenges related to the proper management and monitoring of ICU patients.

P1 (Nurse): "*If I can give my own opinion, where there is sometimes a problem in the ICU, in many ICUs and especially here. The patients that are meant to eat a full ward diet, don't often have the nurse standing there helping them to eat so nurses must come back to the bedside and feed patients and in ICU they very difficult because we don't always have patients needing us to help them with the porridge or to feed them*."

The researcher then probed to try and see if the issue was related to the number of staff.

P1 (Nurse): "*There is more than enough staff. I think it's a misconception that there is no hands. The government hospitals are very well staffed, very well staffed. It's 1:1. You don't get those ratios in private, in private the ratio is 1:2 and they accept that because it's private and its profit making...There are more than enough hands. Our hands are sometimes not on our patients, they are on our phones."*

P3 (Doctor): "*I feel that you need, especially with your ill patients that possibly do have dysphagia, the risk of them aspirating and having dire consequences thereof like cardiac arrest or aspiration pneumonia. You need a bit closer nursing monitoring or one on one or one to two type nursing monitoring, to try and prevent that."*

This factor does not necessarily impact on the decision-making process, but it may play on the minds of the professionals when they make the decision, and it will impact on the outcomes and carry-over of the decision.

- ***Ward Rounds***

During the observation of the ICUs the researcher took note of the environment in general as well as the happenings within the ICU. During the time of observation, the researcher was able to observe the ward round in both ICUs. During the ward round the doctors, nurses and some other allied professionals were present. As noted earlier, the STs working in these units did not appear to be involved in the ward rounds. During the ward round they went to each patient as a group and discussed the current status of the patient, any new

developments, and results from allied assessments or recommended a referral needed. When issues regarding swallowing came up, they would recommend a referral to speech therapy for an assessment or if the patient was already being seen by the ST, they would read the notes written on the chart by the ST (if there were any). There was collaboration and sharing of knowledge amongst the professionals present.

Figure 13 (Layout of the ward round) provides an illustration of what the ward round looks like at a patient's bed. These kinds of teaching ward rounds take place at both sites and usually happen twice a day, in the morning and afternoon. There were no family members present at the rounds, the family members were seen waiting outside the ICU. The nurses explained that the MDT will usually meet with the family members after the rounds are done. During the ward round, the more junior doctors such as the interns or community service doctors would be taking down notes. The more senior doctors such as the registrars would be talking about the patient's condition, asking questions to the more junior doctors and making recommendations about treatment plans, medications and dosage, referrals, tests which need to be done, etc. The fact that the ST was not observed as a member of the ward round could be considered a disadvantage, however the reason as to why they were not present was unclear. It could be due to high patient load and a lack of time to be involved in these activities, I did observe that the rounds did not always take place at the stipulated time, therefore this could also make it difficult for the ST to be involved. The allied professionals working in these hospitals also see out-patients at specific times, if the ward rounds do not run on time, they may not be able to attend.

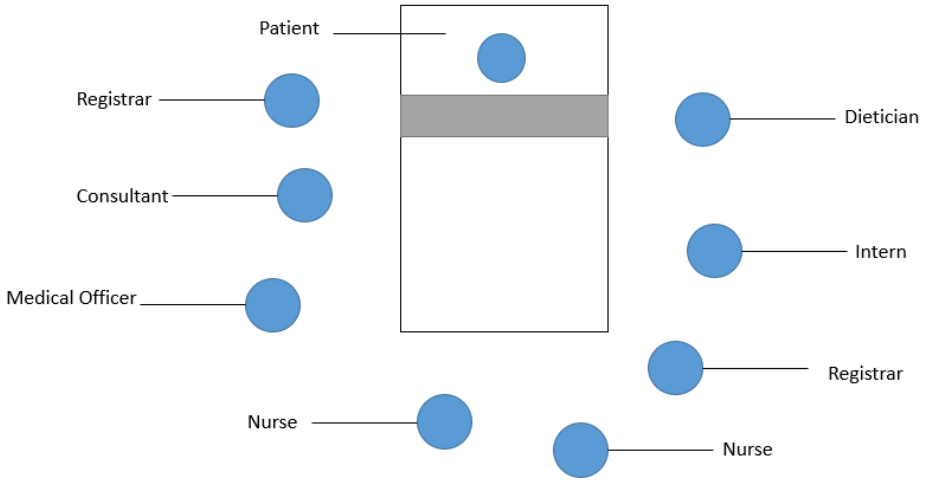

Figure 13

Layout of the ward round

- **Layout of the ICU**

The layout of both units can be seen in the appendices (Appendix Q & R). During the observations, I noted the layout of both units and whether they appeared to have any impact on the decision-making process. Although both units are laid out quite different from one another, they are both open plan with only one or two isolation cubicles in both units. A possible change that can be noted due to the COVID-19 pandemic, was the addition of cubicle dividers between each bed in both units, to create more separation between the patients. However, the dividers do not provide as much privacy as a wall or separate rooms would and therefore it is still quite an open plan in both settings. When walking around the ICU it is easy to see each patient, the professionals who are with the patients and what the different members of the MDT are busy doing. Although none of the participants commented on the layout as an impacting factor when making clinical decisions, from my observations it was obvious that the environment could impact on the decision-making process. The openness and busyness of the ICU could make it difficult for a newer member of the MDT to focus, especially if one is not accustomed to the ICU setting. It can also be intimidating to work in a

busy and open plan environment, with many different patients and professionals around, which could impact on the CDM process. Current literature speaks of different factors that impact on CDM, even just noise can take a toll on the thought process and impact on how decisions are made (Sheng et al., 2022). Therefore, it would not be wrong to assume that the busyness and openness, as well as the many other factors of the ICU environment, could easily impact on the decision-making process for any professional working in the ICU, especially those who are not accustomed to this type of environment.

- **Sub-theme 2: Overcoming the non-patient related factors.**

The non-patient related factors that emerged from the data were likely to adversely impact patient management and decisions taken. However, in some cases, some participants found solutions and strategies to overcome these challenges. These will be listed below and supported by quotes from the interviews and focus groups.

- ***Overcoming the difficulties with lack of equipment, stock and making accommodations*:**

Two of the participants described a scenario where they had to make a plan due to lacking specific equipment. They also reflected on how this issue impacted on the decision-making process and how they manage to overcome.

P12 (ST): "*That kind of affects what kind of a diet you putting a patient on…Then she [the DT] has the struggle of going to the kitchen to see what she can put on the plate for this patient. And sometimes the communication with the kitchen staff bringing a specific plate for a specific patient and then the nursing staff knowing that that plate is for a specific patient. There was a period of time that we didn't have a puree diet in the hospital."*

P10 (DT): "*Yes, we didn't have a blender*." P12 (ST): "*Yes, so that's why we came up with the purity hack."*

Other participants also explained that even though there are some limitations in this setting, they make the best of what they have available and always provide the best options for their patients.

P1 (Nurse): "*We work in an environment with limited resources and we maximize the outcomes. I must honestly say between private and government, we have adequate resources here. It is sometimes not always of the best, but when it comes to, for example, coming back to your question, NGT feeding or TPN. They are available. Remember the patients have the same exposure that they would be given in private, so service wise, we will render an equally efficient service. They will get absolutely the best NG feeds, shakes, TPN, whatever we getting in private they will get that here as well*."

P5 (DT): "*So then we make do with what we have. With TPN as well, we use what we have on tender. Even though, sometimes it's not what I would ideally use. We use what we have and manipulate the feed to suit us and the patients requirements. In terms of our equipment, in ICU, I make sure that we always have our feeding pumps and our sets to feed. Because in an ICU setting it's impossible to feed manually*."

One of the STs described that they will also reach out to the patient's families when they need something that they do not have access to.

P4 (ST): "*Sometimes we will have to contact the family and ask them to bring A, B and C. So that the patient does have food to snack on or eat. Also sometimes, one of the factors that I notice with patients and is very dependent on the patients is that sometimes a patient will only eat with certain people. So sometimes calling the families is something we have to do. We then make a decision with the nursing staff if they will allow the family to come in and assist with feeding the patient*."

These quotations provided evidence of how the participants managed to overcome the external factors that may have adversely impacted the patients. This shows the resilience and passion of the staff working in the public healthcare sector.

Theme 6: Tolerance

An interesting theme that emerged pertained to how the word tolerance is used and understood in the ICU. Interestingly, the word tolerance has a different meaning when you are speaking to a ST versus speaking to a DT or a doctor for example. Theme six will discuss this in more detail. This theme has been sub-divided based on these two meanings: tolerance meaning absorption and tolerance meaning swallowing functionally. One of the participants noted the difference in what this word could mean as well; P12 (ST): "*I feel like tolerance could be interpreted in two ways, tolerating in terms of being able to swallow vs tolerating in terms of a nutritional point of view."*

The term absorption which was often used when asked about tolerance refers to the process of digestion, when assessing tolerance in this manner it pertains to the body's ability to digest the food that has been prescribed by the doctors and DTs. This concept is relevant in the ICU as many critically ill patients present with gut involving conditions which could lead to an inability to digest food (Tatsumi, 2019).

- **Sub-theme 1: Tolerance (absorption).**

The nurses, doctors and DTs in this study generally refer to absorption when asked, "How do you monitor if a patient is tolerating the selected mode of feeding?" Their understanding of the word tolerance pertains to absorption. They do not consider aspiration when asked about tolerance, this can be seen in the quotes below.

P1 (Nurse): "*First of all, there is no nausea or vomiting, he takes it with enthusiasm, you can see that he is really, and it's a natural way of eating*."

P2 (Doctor): "*I look at the obvious intolerance features, such as nausea, vomiting, diarrhoea, abdominal distention, cramps, abdominal pain, and all of those general signs and then in terms of whether if it's helping me with my nutritional goals, is another thing. If I look at a patient that has these massive ongoing losses, then if you look at the fluid balance and you realise that you aren't staying on top of this loss and the patient is also looking more wasted, then I know that we are not really winning from that perspective."*

P6 (Nurse): "*Mostly, here in this ICU we use nasogastric aspirates. She (pointing to the DT) will come and prescribe the minimal feed to start and then you just increase the feeds when the patient tolerates. If you see there is minimal aspiration, you just increase. That is how you can see if the patient is tolerating*."

P6 (Nurse): "*So maybe the goal is 60, you can just increase to 20, then 40, then 60. And then you aspirate again. After an hour you can see if the patient is tolerating, your minimal aspirates. Means the patient is tolerating the feeds."*

P5 (DT): "*You should do the aspirates and look at signs, like if they are vomiting. That's also a sign on of aspirates. Abdominal distention. That would need further investigation. That's basically what we use. If there is blood in the aspirates. Then also that's a problem, we need a stool cause then there's possible GI bleeding going on. Then obviously we can't just feed them. If there's a fistula patient or a high output stoma, high output fistula. That just shows the patient is not really absorbing the feed so we would then change the feed or change the route*."

Here it is obvious to see that the doctors, DTs and even nurses put a lot of their focus with regards to tolerance of feeding on the absorption of the food. They assess tolerance from a gastro-intestinal perspective, and they did not mention any considerations which would involve poor tolerance from a swallowing perspective.

However, one of the DTs did consider tolerance from a swallowing perspective and when asked how they monitor if a patient is tolerating the selected mode of feeding, this was the response:

P10 (DT): "*I don't decide if a patient is tolerating, but like I said, if I do see a patient is eating and I can pick up on any obvious signs like coughing whether it's delayed or immediately after swallowing. I have experienced pts who's had SATs dropping in the ICU, another thing is hoarseness of voice that the ST told me. Those are the obvious things that I can pick up on and then I will straight forward refer to ST*."

I then went on to ask this participant how they interpret tolerance from a nutritional perspective, and this was their response:

P10 (DT): "*Ok then I have to add to that. If I have a patient on NG feeds, for me tolerance has a different meaning in terms of nutrition. When it's an enteral feed, we look at different clinical signs for example vomiting, diarrhoea, gastric residual volumes, so when they aspirate, the content that's been sitting there in the stomach that's not moving, whether or not the patient is passing stools would also be one of the signs. Then we also look at external factors, understanding of predicting possible intolerances in the future that could cause them to not absorb the food properly, that's what our tolerance means, its actually absorption of the food...There's a lot of things that we look at, but it all has to do with the clinical signs that we see from the chart. Then if the patient can't tolerate any of the modes of feeds that we've given them, then our last resort would be TPN, but we don't give it to patients with a poor prognosis. Because it's very expensive. That's my tolerance*."

According to these discussions, it appears that tolerance of the selected mode of feeding refers to the patient coping physically and medically. The doctors, DTs and nurses look for certain clinical factors such as vomiting or nausea to assess whether the patient is coping with or tolerating the mode of feeding that has been selected.

- **Sub-theme 2: Tolerance (not aspiration).**

The STs in this study generally refer to swallowing function when asked, "How do you monitor if a patient is tolerating the selected mode of feeding?" The ST is not referring to

absorption, although one of the STs did highlight that the term tolerance can have two different meanings. This distinction can be seen below in the quotes.

P12 (ST): "*From our side we rely a lot on the patient report, if they are awake, alert and responsive, to ask how it's going. If they're reporting that they are still hungry, I will communicate with the DT to see if she can supplement or grade up a diet to see if we can meet those appetite requirements. Then, also the nursing staff, I will ask how easy was it to feed the patient? Did they finish their food, get the report on how the patient is doing. I think when you assess a patient for the 1st time, it's important to assess them realistically. You can't give them a small amount of water or purity or custard and make a decision off of that, you need to give them a good amount to see if they will be able to sustain themselves, if they are able to not fatigue throughout, or to see if the muscles become weaker as they go, if there is tons of anterior spillage, or if the patient is not actually tolerating the feed at all.*"

One of the nurses responded as follows to the question; "How do you know when the patient is tolerating?"

P1 (Nurse): "*You need to look at him and see that he is swallowing, he needs to be able to swallow comfortable, and he is not coughing. There is no coughing when he swallows. He is not chocking, or he is not asphyxiating on what you have just given him. So make sure he is not coughing and that he is swallowing it clearly."* This response shows that there is some awareness of both interpretations of the word tolerance.

One of the doctors responded as follows.

P3 (Doctor): "*First of all, we would monitor if there are any vomits after the feed. Any associated complaints of shortness of breath or aspiration of fluids from or the meal, from their trachy [tracheostomy]. That's it*."

This participant appears to consider both interpretations when considering the concept of tolerance.

This kind of tolerance referred more to swallowing ability and whether or not the patient is able to tolerate oral feeds or swallow functionally without aspirating on their food. This tolerance also referred to the patient being able to complete meals and gain adequate amounts of nutrition. These two concepts of tolerance and their vastly different meanings was a novel finding in the data and will be discussed further in the discussion.

Summary of Results

The main aim of the current research topic was to describe the current decision-making process of the MDT in terms of feeding practices in the ICU in SA within the public healthcare sector. The sub-aims were to explore the CDM process of the MDT in ICU with regards to the choice of mode of feeding and current protocols which may be used to aid this process, as well as to present the factors which impact on the CDM process for the MDT when making decisions regarding feeding of the critically ill in the public healthcare sector in Gauteng.

The results were able to describe the CDM process by providing a description of the factors that the MDT consider when making their decision. The results also gave an explanation on the different roles of the MDT when it comes to deciding on the mode of feeding and who is responsible for implementing the decision that has been made.

The results also identified a lack of ICU specific protocols to assist in the decision-making process when choosing a mode of feeding for a critically ill patient. The process of making clinical decisions around feeding critically ill patients was displayed as a combination of experiential and professional knowledge which is combined with all of the factors that need to be considered, which ultimately aids the MDT in deciding on a mode of feeding for the critically ill patient. An unexpected finding was related to the different understandings of the word tolerance which was discussed in theme four.

The factors that need to be taken into consideration when making decisions were also identified. Additionally, the MDT presented the ways in which they have learned to adapt and overcome some of the challenges posed in this environment.

The results also showed that most of the participants working in the ICU had some experience with dysphagia. The roles of the MDT were also identified and the way in which they work together was also explained. Finally, the data provided a description of the role of the ST in the SA public health sector ICU.

Finally, I was able to take all the information and use it to develop a model of how clinical decisions are made with regards to feeding the critically ill patient. Figure 14 (The process of decision-making regarding feeding) shows the process of how the decision is made, it begins with the professional, which in most cases should be the ST. They begin the process with their experiential and professional knowledge in mind. They will then assess the patient and consider all the patient related factors. Once they have assessed the patient, they will then have to take into account all of the environmental factors such as a lack of equipment or stock and they may also come up with accommodations to overcome the challenges at this stage. In some cases, they will then discuss their decision with other members of the MDT to come to a final decision as to how to feed the critically ill patient. The last step in the CDM process will then involve electing the mode of feeding and implementing it.

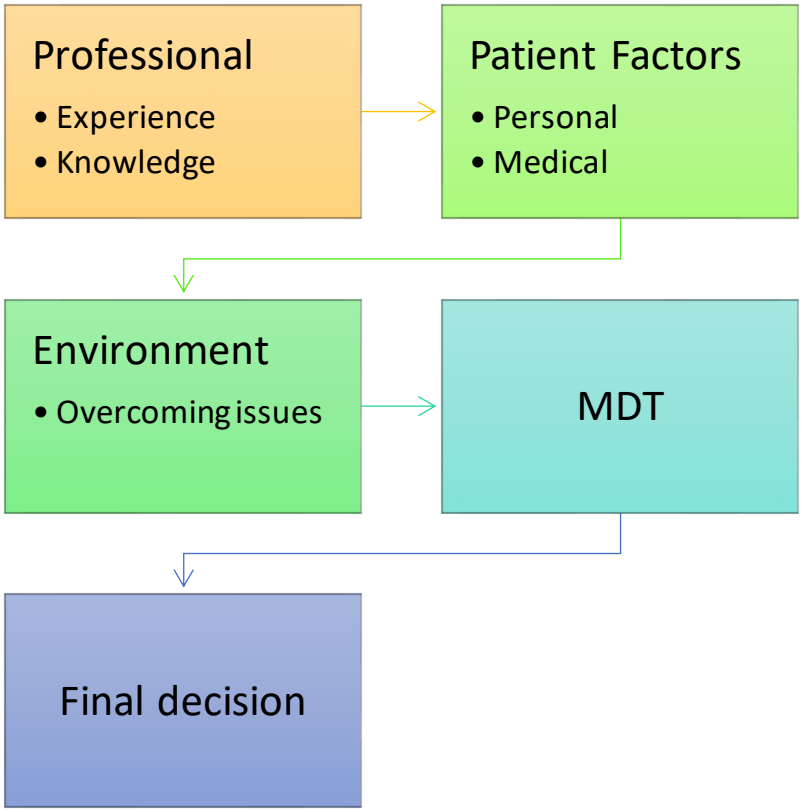

Figure 14

Process of decision-making regarding feeding

Discussion

The discussion will delve deeper into the literature and links will be made between the emergent themes and current research on the topic. The data obtained in this study will be compared with current literature on the topic, looking for similarities, differences and perhaps even, gaps in current literature. The aim of this discussion is to provide an in-depth review of the data obtained and in doing so, to dissect the current feeding practices of the MDT in the ICU within the public healthcare sector in SA, while paying special attention to the CDM process.

Clinical Decisions are Made According to Professional Roles

The participants from both sites tend to work within their professional boundaries when it comes to making decisions regarding feeding critically ill patients. Doctors were the only professionals who appeared to take on more of a transdisciplinary role, especially when other professions were not available to make decisions. They did, however, note that they would at times revert to those professionals when they were available to confirm that they had made the correct decision. Nurses also noted that they would make suggestions if they observed a certain change in the patient, but they were not responsible for making the decisions at the end of the day. Even though it is not widely used in this study, according to literature transdisciplinary care is a valuable and important strategy and using a transdisciplinary approach allows the team to combine their roles and share the difficult role of making clinical decisions (de Bock et al., 2018). This strategy is required in an environment like the ICU and should be used more in this setting, especially by doctors and nurses. Brodsky et al. (2020) discussed the importance of only multidisciplinary care when screening and assessing swallowing dysfunction, and they also highlighted the need for transdisciplinary care in the treatment of PED and in managing the possible complications that can arise from an undiagnosed dysphagia. The current study found that there is a great deal of multidisciplinary

care in this setting, there were also indications of interdisciplinary care but there were very little signs of transdisciplinary care. This study therefore was able to point out the need for more inter- and transdisciplinary care in order to improve the ease of the CDM process. I did expect to find that there would be multidisciplinary care in this environment, however it was unexpected to see the limited amount of inter- and transdisciplinary care as the literature supports the value of this concept within the ICU setting.

In this study, it was found that doctors assess the patient's medical status and decide if the patient can eat orally or not. This finding was similar to the research findings from Nielsen et al. (2022), where doctors were found to have the final decision-making authority with regards to a patient's ICU treatment, although they had less practical skills with dysphagia. In this regard they appear to take on the role of the ST. The doctors also mentioned prescribing and selecting the type of feed which is usually considered the DT scope of practice. This finding is not surprising as the doctors are responsible for the overall care of the patient, however, a possible issue that was raised by the participants in this study is that the teaching environment lends itself to having many less experienced doctors making decisions that are not within their scope which they lack the experience and professional knowledge to be making.

Nurses are responsible for the overall care of the patient, which includes making sure the patient eats. They usually act according to what has been recommended and still they might make recommendations based on the clinical factors of the patient. This finding was in line with current research which describes the role of the nurse as being responsible for the overall wellbeing of patient's in the ICU and ensuring that their treatment is prescribed and documented (Comisso et al., 2018).

The findings of the current study revealed that STs are responsible for assessing the swallowing function and will provide information on what consistency of food is safe for each patient. They also work closely in the MDT to ensure the patient is fed safely. McRae et al. (2020) explains that the ST in ICU is responsible for managing speech and swallowing

disorders as well as weaning the patients off the tracheostomy. Interestingly, there was no mention of the tracheotomy weaning or decannulation as it is more commonly known, during this study, however the STs in this study do get involved with speech and swallowing disorders. This was an unexpected finding, according to current literature the ST should have a role in weaning the patient off of the tracheostomy, there is a high incidence of tracheostomies in the ICU and the tracheostomy also puts the patient at a higher risk for dysphagia (Skoretz et al., 2020). Therefore, it is necessary for the STs in this setting to be more involved in tracheostomy weaning.

Dieticians assess the nutritional needs of the patient, look at the clinical factors and decide how best to meet those needs. Once they prescribe the feeds, they will then monitor that the patient receives what was prescribed. This finding was in line with the scope of practice guidelines provided by the HPCSA which indicate that the DT is responsible for offering guidelines for adequate nutrition (HPCSA, 2023).

Physiotherapy would refer to a ST and/or DT if they notice that a patient is not eating well. They are also responsible for maintaining a clear chest which in turn, helps with feeding. All of which is to be expected with regards to the scope of practice guidelines for the PT in ICU. Current research shows clear benefits of maintaining a clear chest through chest physiotherapy (Goñi-Viguria et al., 2018).

Occupational therapy would assist in the action of feeding and help the patients relearn how to feed independently. The literature supports the role of the OT in ICU as an important aspect of assisting critically ill patients to recover and regain their prior level of functioning not only physically but also in the cognitive and psychological aspects (Bittencourt et al., 2021).

A study conducted in SA by Hill (2015) which focused on nutrition decision-making in the ICU in SA, showed that the decisions regarding nutrition were made mostly by both doctors and DTs in 57% of cases and then in 34% of cases, doctors alone would make the decisions. Although this study did not include percentages in this regard, it was evident that most of the

decisions regarding nutrition were made by doctors and DTs and the ST was only consulted when issues with feeding were picked up by a member of the MDT. Two concerns emerge from the results of the current study. Firstly, why was no ST regularly monitoring all the ICU patients given their knowledge on feeding and communication. Secondly, why does the ST not make most of the decisions regarding feeding?

It is important to include the ST early in the decision-making process in order to ensure better outcomes. Current research has found that involving the ST early on has been linked to reduced time spent in the ICU and in turn, savings on already scarce hospital resources (Bonvento et al., 2017a). The findings from the study by Hill (2015) are similar to the findings of the current study as well as other studies which have found that the ST is usually only consulted late into the ICU patient's admission, if they are consulted at all. Studies have also found that referrals to the ST in ICU are highly dependent on the institutions themselves (Brodsky et al., 2019; Marian et al., 2018; van Snippenburg et al., 2019). These findings are surprising, considering the evidence supporting the need for and benefit of the ST in the ICU (McRae et al., 2020). Nevertheless, it is important to remember that many of these studies were based in developed countries where the healthcare structure is very different, therefore the same may not be expected of the SA public healthcare sector. However, the role of the ST in the ICU will be discussed in more detail at a later stage.

Interestingly, but not surprising is the fact that there is a large body of research on nutrition in the ICU but the amount of research on swallowing and dysphagia in the ICU is much less (Berger et al., 2019; Hill, 2015; McClave et al., 2009; Schaefer et al., 2018; Schindler et al., 2016). There seems to be a much greater awareness of the use of nutrition therapy but much less awareness of dysphagia in critical illness and the need for speech therapy. Doctors in the ICU have the overall responsibility of managing the patient's care (Ntoumenopoulos, 2015). There is however little to no research available on the doctor's direct involvement in making decisions regarding feeding of the critically ill patient. The doctor is

responsible for the overall care which would cover feeding, but further research on their specific role with regards to decision-making with feeding is needed.

Nurses, as mentioned before, ensure that the patient in the ICU gets the nutrition that is recommended. They essentially are the professionals who ensure that the patient eats, records what the patients eat, how much they tolerated (absorbed) and if they noticed any issues with the feeding process (Schaefer et al., 2018). This is an essential role in any ICU, as all decisions regarding feeding and nutrition will be made based on these reports. Data from the current study was similar to these studies, the doctors appeared to have more responsibility with regards to overall decision-making for the patients in the ICU, including feeding. The nurses in the current study also appear to have a big role when it comes to feeding and they even mentioned that when there are swallowing concerns, they are often the first one to pick it up. This finding emphasises the importance of the role of the doctors and the nurses in the practice of feeding critically ill patients. It also highlights the need for more standardised protocols in place which could aid in assisting these professionals, who do not have the skills and expertise in dysphagia, in early identification and treatment of dysphagia. It would also be beneficial for the ST to do in-service training with these professionals on a regular basis.

As we have seen, achieving adequate nutrition in the ICU is important, for many reasons including readiness for surgery, proper healing, organ function, reducing mortality and morbidity (Schaefer et al., 2018; Terblanche, 2019). However, adequate nutrition cannot be maintained if the patient is not fed in the correct manner (Terblanche, 2019). The correct mode of feeding is patient dependant and can vary depending on the patient's current physiological status as well as where they are on the recovery journey.

Terblanche (2019) supports the DTs role in critical care in line with the findings of this study, the DT has a vital role in ensuring that the patients are supported nutritionally and they will implement the concept of nutrition as therapy (Terblanche, 2019). The literature also highlights the collaborative role of the DT which was evident in this study a well, the DT is a

key member in the MDT (Terblanche, 2019).In the current study, the ST and DT appear to have more of an interdisciplinary working concept. The STs and DTs in the current study often mention one another in their decision-making process and even in discussions post the decision-making process. These two professions work closely together, while the ST decides how the patient will eat, the DT decides what they eat. These decisions need to be made in collaboration, especially in this setting where there were challenges reported with regards to stock and equipment that impacted on the decision. The ST and DT appear to work together to make arrangements and to work around these challenges.

According to current research the PTs main role in the ICU is to promote proper lung function of the critically ill, which was in line with the findings from this study (Jyoti, 2018). Some of the literature presented earlier in the review explains that respiratory conditions are quite common in ICU patients and can often be the cause of the need for critical care (Bellani et al., 2016), which puts patients at an additional risk for dysphagia, especially if they require ventilation and a tracheostomy (Skoretz et al., 2020). Although the PT does not have a direct role with feeding, as mentioned by one of the participants in the current study, proper lung function will go hand in hand with safe oral feeding. Research which explains how breathing and swallowing are so closely linked, when we swallow, the pharynx splits into two pipes, one for food (oesophagus) and one for breathing (trachea) (Zuercher et al., 2019). Therefore, the ST and the PT should work together to ensure that they make the best clinical decisions regarding feeding and that oral feeding only commences when the lungs are ready. In the current study, the ST and the PT did seem to have a lot of mutual respect and a good awareness of when to refer to one another. This kind of relationship will likely benefit patient outcomes.

The current study noted that the OTs are involved in ensuring that patients achieve independence in their activities of daily living, which would include eating. Current literature on the role of the OT in the ICU was in line with the findings from this study and supports the findings, however, current literature on the topic is also limited (Bittencourt et al., 2021). As a

researcher, I expected the OTs to have had more experiences with dysphagia, especially because they get involved during mealtimes just as the nurses would. The OT in this study did not appear to have a large role in the ICU in general, however it is difficult to make assumptions on the role of the OT in this setting because only one OT took part in this study. Therefore, it was also difficult to determine how the ST and OT work together in this setting with regards to feeding the critically ill patient.

The route of feeding is dependent on clinical factors

When making clinical decisions the individual relies on certain facts, these facts are usually patient dependent such as the medical condition, level of consciousness and mode of ventilation for example. Nonetheless there are, other factors which play a role in the decision-making process, such as availability of stock and necessary equipment, as well as staffing related factors and even individual patient preferences. However, for each participant in the current study, it was evident that the decision-making process involved a systematic mental checklist, in which indications and contraindications of each route of feeding are examined before making a final decision. Kozlowski et al., (2017) explained this phenomenon as the process whereby the professional takes all the relevant information pertaining to the situation into account and then comes to a logical decision as to what to do. The current study found this to be true, all the participants discussed the various factors that they take into account before they come to a decision regarding how to manage their patients.

The oral route of feeding is generally limited in the ICU setting, the current study was in line with Fadeur et al. (2020) in this regard. The reason for this is that many ICU patients are ventilated via the mouth, they often have decreased levels of consciousness and their caloric needs are usually much higher than what they are able to maintain via oral feeding only (Delsoglio et al., 2020; Schindler et al., 2016). The findings of this study were similar in this regard, most ICU patients were being tube fed (Schindler et al., 2016).

When it comes to route of feeding, there will always be indications and contraindications. In the current study, the participants responsible for choosing route of feeding mention the indications and contraindications which assist them in making the correct decision. The clinical factors highlighted by the participants in this study included the medical diagnosis, level of consciousness, obstructions, nutritional requirements, and signs of aspiration, patient abilities and preference. The two most common factors which were considered by eight out of the fifteen participants in the current study were level of consciousness and patient abilities. Almost all the members of the MDT consider these two factors before deciding on the mode of feeding for a critically ill patient, after level of consciousness and patient abilities they then look at the medical condition and anatomical obstructions to feeding. After ruling out those factors, they will assess the physiological obstructions, type of oxygen therapy, and then consider the nutritional needs, patient preference and finally only the ST would look for signs of aspiration before making the decision. This study also found that specific contextual factors had to be considered before a decision could be made as well, these factors were often linked to a lack of resources and stock or difficulty in making specific accommodations. This finding is supported by the CDM framework which illustrates that CDM is the process of integrating multiple factors such as contextual, medical and personal factors into account before coming to a conclusion about a patient's diagnosis and treatment that is not only fitting but is also realistic given the current situation (Kozlowski et al., 2017). The CDM process which was the theoretical framework of the current study also highlighted that emotions can come into play during this decision-making process, however, I did not encounter any data which was in line with the literature in this regard. Although, I did not specifically ask any questions pertaining to the emotional aspect of the decision-making process or how the environment can impact on emotions of the participants while making clinical decisions.

For those few ICU patients who are not intubated, oral feeding is usually recommended unless there are any obvious contraindications, such as a decreased level of consciousness

or intubation via the mouth and the same findings were seen in the current study (Thomas et al., 2021). Oral feeding, or eating is the goal for all ICU patients once they have reached a point where this is achievable. However, most patients in the ICU require invasive or non-invasive oxygen therapy which would naturally contraindicate oral feeding (Thomas et al., 2021). The European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines indicate oral feeding as the preferred method for all patients receiving nasal flow oxygen, unless they are not meeting their nutritional requirements (Barazzoni et al., 2020). Interestingly, most of the research on route of feeding as well as guidelines available are concerned with nutrition or other medical considerations, there is little to no research available on swallow function as a deciding factor for route of feeding.

The majority of the research lists contraindications as inadequate gastrointestinal function, inaccessible gut, and high risk of infection patients (Delsoglio et al., 2020). The indications found in research are quite general, as long as the patient does not fit any of the contraindication criteria and they are awake and willing to eat, then it is assumed that oral intake is best (Boullata et al., 2017; Delsoglio et al., 2020; Howard, 2009). However, the current study found that in some cases, even though a patient was awake they were not able to eat enough orally and could only sustain a bite or two of food before fatiguing. The current study also found that certain patients may be able to tolerate oral feeding but require a softer consistency which in some cases was not viable as specific accommodations could not be made by the kitchen. More external factors will be discussed in the next section.

External factors impacting on the CDM process

Public healthcare in SA is difficult to compare to developed countries and the professionals working in this setting have a lot more external factors to think of than just the clinical factors of the patient (Maphumulo & Bhengu, 2019).

Although, other research has highlighted the issue of scarce resources in SA ICUs, this study brought to light some additional concerns not found in current literature (Naidoo & Naidoo, 2021). There were reports in this study of limited stock and equipment specific to tube feeding and dietary requirements. Some of the MDT highlighted a lack of pumps which are required for NG feeds, and they also mentioned no access to certain diets like soft or puree consistency. These are important considerations to be made when deciding on the correct mode of feeding for a patient. Getting the patients on oral feeding is a priority even though certain patients may only be able to tolerate a softer diet orally. Unfortunately, in cases like these, the ST may have to stick to tube feeding rather than offering the patient a risky form of oral feeding which could have dire consequences for the patient.

Challenges with procurement, storage and distribution of adequate resources in SA public health is an increasing challenge (Maphumulo & Bhengu, 2019). There are a few current research projects which have reported on similar difficulties relating to scarce resources and poor resource allocation (Malakoane et al., 2020; Maphumulo & Bhengu, 2019; Naidoo & Naidoo, 2021). Interestingly, the participants in this study revealed that they have developed their own ways of overcoming these challenges to ensure that they can still provide the patients with what they need. The participants expressed that they were usually able to overcome the challenges together as a team, for example when there was no blender available for the puree diet, the ST and DT used purity baby food instead. The DT also mentioned how they will make a plan with the feeding pumps for NG feeds. The current study affirms the description by Kozlowski et al. (2017) which conceptualizes CDM as a not only rational but also humane way of making clinical decisions. This type of critical thinking is often necessary in an environment such as the one in which this study was conducted.

Other external factors that have been shown to impact on the CDM process which were not identified in the current study include aspects discussed by other researchers such as noise and emotion (Heyhoe et al., 2016; Sheng et al., 2022). In future research, it would

be interesting to investigate the impact of additional external factors on the CDM process with regards to feeding the critically ill patient.

Collaborative CDM

The main positive factor which was underlined by the participants was the MDT collaboration in the ICU in the SA public sector, and its positive impact on the CDM process. The participants spoke of the benefits of having the entire team (especially doctors) nearby, which aided in collaborative decision-making and goal setting for the patients, but it also appears to make it easier for referral purposes as well.

Sharing the decision-making process is a patient-centred concept which usually involves shared decisions between the medical team and the patients regarding their care. However, this is usually not attainable in the ICU setting as most of the patients present with decreased levels of consciousness (Joseph-Williams et al., 2017). However, in interprofessional CDM, the members of the MDT can consult with each other for advice and make joint-mutually agreed decisions about a patient. Although, the participants in this study mention the positives of interprofessional decision-making, a study by Dogba et al. (2016) has highlighted that it can be challenging. As individuals may not have the same knowledge and understanding as one another, and there may also be misunderstandings when it comes to specific terminology (Dogba et al., 2016).

The participants in this study spoke of interprofessional CDM as a positive aspect in the public sector, indicating that it made it easier to make decisions regarding their patients care and they also felt that there was better understanding all round when they were able to discuss their findings with the medical team in person, rather than leaving it up to note reading. Unfortunately, there is no current research looking at this concept and the implications of the differences between public and private healthcare in this regard. The participants who compared the private sector to the public sector discussed that in private, they were never

really able to discuss a patient with the MDT in person like they are able to do in the public sector ICU.

Dysphagia in the ICU

Almost every participant in this study had some experience with dysphagia in critically ill patients, this finding was not surprising as current literature has shown that dysphagia is prevalent in about 12% of ICU patients (Schefold et al., 2017) and PED can be prevalent in up to 62% of patients in acute settings and up to 50% of these patients will present with aspiration (Kwok et al., 2013).

One of the nurses who participated in this study indicated that they have regularly encountered swallowing difficulties in their patients and that they are usually the first professional to identify it. A study conducted by Christensen & Trapl (2018) discussed the use of a nurse led dysphagia screening policy in the ICU. This would be a beneficial concept in the ICU, as we found in this study that the nurses are usually the first professional to feed a patient, therefore they will naturally be the first professional to witness signs of a possible dysphagia. Consequently, initiating a nurse led dysphagia screening could save a lot of time and promote early intervention of the ST in this setting (Christensen & Trapl, 2018). This could be an interesting topic to explore in the SA public healthcare context in terms of feasibility and efficacy in promoting earlier ST intervention when needed.

An interesting finding from this study was the report of one doctor who had been working in the unit for four months but had not had any experience with dysphagia. Although, this could be explained by the findings from Marian et al. (2018) who divulge that medical professionals working in the neuro-ICU may have a better awareness and understanding of dysphagia than those working in the medical ICU, due to the fact that neurological conditions are more commonly associated with dysphagia than the common conditions that would be seen in the medical ICU.

Decision-making protocol

As we have just seen, dysphagia in critically ill patients has a high incidence rate and it is safe to say that an individual working in the ICU will come across it at some point in their time there. Considering the dire consequences of critical illness dysphagia, it would make sense for there to be specific protocols in place in each unit when it comes to the assessment and management of dysphagia. However, this study found that most of the participants in both units reported that there is no protocol in place or that they were not aware of any protocol if it did exist. When speaking about a dysphagia protocol, this could mean any tool designed to guide those in the unit on what to do when they are assessing, managing and making decisions regarding dysphagia in the critically ill. Other studies have also noted the need for these kinds of evidence based protocols in the ICU, and a lack of established dysphagia screening protocols as well (Christensen & Trapl, 2018; Marian et al., 2018).

The SA public healthcare ICUs are generally used as teaching environments, therefore protocols should be developed to ensure that the correct decisions can be made. Humbert (2015) explains that decisions are made not only by considering multiple factors but also with the use of experiential knowledge. Overtime, the CDM process becomes more defined as the clinicians gain more and more experience (Humbert, 2015). However, in a teaching environment, such as the one in this study, the members of the MDT are less likely to have many years of experience and they may rely more on theory and practical guidelines when making clinical decisions (Humbert, 2015). The participant statistics from this study proves that a majority of the MDT working in this setting are likely to have less experience as an overwhelming majority (80%) of the participants had less than 10 years' experience, and half of those had only one to five years of experience. The literature also supports the need for some sort of protocol in this sense and the need for more teaching and support on the area, especially for those team members with less experience. Vose et al. (2018) explains that CDM of this kind is actually a skill that needs to be taught as it does not develop on its own. This was one of the main reasons behind the motivation for this study.

Tolerance

Possibly one of the most interesting outcomes of this study was the distinction between the different meanings of the word tolerance. What was found is that the ST and the doctor or DT generally have two different understandings of the word tolerance. This difference was highlighted in the focus groups and interviews, and it became apparent that there is a major difference in the two understandings which could lead to misunderstandings, especially when working in an interdisciplinary environment such as the units involved in this study. In the current study, the findings were as discussed.

The ST uses the word tolerance to describe that the patient is not presenting with any signs of dysphagia, they essentially would say that a patient is tolerating a selected diet when they feel that the patient is firstly, not showing any signs that they are choking or unable to swallow the food or drink they are consuming (Chen et al., 2021). Second, they would say that a patient is tolerating a selected diet when they feel that they patient is managing to eat enough to sustain themselves and they aren't fatigued or struggling to consume the food to completion (Mah et al., 2017).

The DT and doctor generally use tolerance as a means of indicating that the patient is absorbing the food, that their body is able to tolerate it in that sense. They would say that the patient is tolerating the selected diet when they can see that it is passing through the gastrointestinal track in a normal fashion and the patient is not showing any signs of intolerance such as vomiting or diarrhoea (Arabi et al., 2019).

The literature appears to have some similar findings to this research study, multiple articles can be found discussing the concept of tolerance on both ends of the spectrum (Arabi et al., 2019; Chen et al., 2021; Mah et al., 2017; Ridley et al., 2019). Arabi et al. (2019) and Chen et al. (2021) look at feeding intolerance from the perspective of the body not absorbing the food as well as the risk of malnutrition in critically ill patients and they provide ways to manage an intolerance of this kind. Whereas Mah et al. (2017) and Ridley et al. (2019) discuss

intolerance in the terms of aspiration or inadequate swallowing function. However, the researcher was unable to find any current literature which indicated the same stark difference in these two understandings of the word tolerance, and how a misunderstanding of this term could have devastating effects. In a study by Ridley et al. (2019), they make a direct clarification between being able to swallow safely and tolerance of a specific diet. The findings in current literature appear to be mixed in the sense that there is no one clear identified understanding of the word tolerance. This is line with the findings of this study which delineates the two different understandings of the word.

Interdisciplinary Communication in the ICU

The units in this study both appear to have great MDT work and in all of the interviews and focus groups, the majority of the participants talk about the MDT in the units, and they often brought up the fact that allied healthcare professionals were valued in both settings. They also highlighted multiple points in relation to MDT communication in the ICU, and that the communication between professionals in these units is essential for best care and important for good carry over as well, research has also indicated that good communication is the link to safe and reliable patient care (Wang et al., 2018). When it came to communication there were some negatives and some positives mentioned.

The positives mostly came from individuals who appeared to have good interpersonal relationships, these team members spoke highly of their colleagues and even praised them in some instances. The members with good interpersonal relationships spoke of the ease with which referrals could be made as well as better interdisciplinary decision-making. Excellent care of the ICU patient is associated with good interpersonal relationships and communication according to current research, which supports this finding in the current study (Donovan et al., 2018). The best patient outcomes are achieved when the MDT understands that they are

working together as a team for a common goal (Donovan et al., 2018). This is in line with the findings from this study.

Negative comments seemed to stem from negative experiences, where an instruction was not carried out, follow-up was not done, or a suggestion was simply ignored. Some of the participants also discussed duties not completed or information not taken down properly as well. In contrary to this, one participant noted that she preferred not to communicate with other professionals herself and that they should, "*speak to the chart*" instead of speaking to her. So once again, there appeared to be a mix of responses when it came to communication in the ICU. Recent research indicates that poor communication in the ICU can have a direct impact on the safety of the patients (Wang et al., 2018).

With regards to communication and the different teamwork concepts that were observed, there appeared to be better communication with the team members who had more of an interdisciplinary working relationship as opposed to the multi- and transdisciplinary concepts. According to literature, the transdisciplinary model has a positive impact on the functioning of the ICU, however in the current study it appeared that the participants felt more negative about the doctors making decisions that were not necessarily within their scope of practice (de Bock et al., 2018). However, concern was raised around the level of experience of the doctors working in these units, as we have discussed, the units are teaching facilities. Therefore, this lack of experience could be what causes the allied health professionals to feel a lack of trust in the doctors that take on more of a transdisciplinary role. This finding was surprising considering the support of transdisciplinary care in the literature but at the same time, this could explain why there appears to be more of a MDT work concept at play in the units that were involved in this study, the team members who lack experience obviously feel most confident acting within their scope of practice only (Bonvento et al., 2017b).

The role of the ST in the ICU

The findings from this study showed how the MDT in the ICU understand the role of the ST in the two units which participated, it was evident that the ST was not involved in the ICU up until recent years and that the ST scope of practice, especially in this setting, has evolved over the years. While speech therapy used to involve more work around communication and speech impediments, the role of the ST in the ICU has evolved to the point where along with communication and speech rehabilitation, the ST is an integral team member in assessing and treating swallowing disorders and also assisting in the process of weaning the patient off of the tracheostomy (McRae et al., 2020). According to current guidelines, the ST does have a role to play in dysphagia management (HPCSA, 2021). As medicine improves through the years, more and more critically ill patients are surviving their time in ICU, which has in turn increased the need for rehabilitative support such as the ST in the ICU (McRae et al., 2020).

The current study also highlighted that most of the professionals working in the ICU were aware of the ST and the benefit of their services. It was noted that many of the professionals were well aware of the role of the ST in the ICU. Recent research on the topic promotes the benefit of the ST as a valued member of the MDT in the ICU, and is directly related to better patient outcomes and the current study was in agreement with current literature on this topic (Cardinal et al., 2020).

A study conducted by Hill (2015) which showed us that in the SA context, at that time there was no mention of the ST at all in the decision-making process regarding the route of nutrition for ICU patients. However, in the current study there appears to be an opposite finding, where many of the participants all indicate that the ST is the main stakeholder in this decision-making process. This finding could indicate that there is a good understanding of the role of the ST in the ICU and their importance in the decision-making process when it comes to making decisions regarding feeding. However, it is important to note that a majority of the participants in this study were members of the rehabilitation team and not medical doctors, only 27% of the participants were doctors. With the understanding that doctors appear to be

the main decision makers regarding patient care, if there were more doctors in the sample, this finding may have been different. Therefore, it is more likely to deduce that the rehabilitation team have a comprehensive understanding of the role that the ST plays in the decision-making process with regards to feeding the critically ill patient, while some medical doctors appear to have the same understanding too.

An important finding from this research was not only to do with the role of the ST in the ICU but their visibility. One of the participants noted that the ST was around and available if they were needed. It is important for the ST to know that they should make their presence known in these settings to foster better relationships with their colleagues and in turn, ensure better outcomes for their patients.

The process of decision-making regarding feeding

Finally, I was able to develop a flowchart which depicts the way in which the professionals in the ICU make clinical decisions regarding feeding. Kozlowski et al. (2017) explains that CDM is the process of taking all the relevant information into account and then concluding as to what will be best for the patient at that point in time. The flowchart that is presented in Figure 14 (page 124) illustrates this explanation well, it shows the information that the participants in the current study use to make their decision as well as the order in which they process that information and come to a decision.

The flowchart which I was able to develop also added an interesting aspect to the CDM process, with the addition of the non-patient related factors that need to be considered and then there were times when the professionals would also come up with ways to overcome certain challenges which were specifically related to the context of working in the SA public healthcare sector. This finding emulated the findings from Coutts & Pillay (2021) who identified contextual factors as having an impact on the CDM process with regards to dysphagia and this study was conducted in a similar context which strengthens the reliability of this finding.

Finally, it is evident that the professionals working in the SA public healthcare sector need to take patient factors as well as contextual factors into consideration when making decisions regarding feeding the critically ill patient.

Conclusion and Implications

This chapter includes an overview of the rationale and aims for the current study and a summary of the findings. The limitations, strengths, future recommendations and implications of the research topic for practice and theory study will then be discussed.

Summary of the findings

The aims of this study have been investigated, analysed and discussed as evidenced by the six themes namely, decision-making in the ICU, feeding the critically ill patient, non-patient related impacting factors, tolerance versus tolerance, the MDT in the ICU and the role of the ST in the ICU. The main aim of this research project was to describe the current decision-making processes of the MDT in terms of feeding practices in the ICU in SA within the public healthcare sector. In parallel also exploring the CDM process of the MDT in ICU with regards to the choice of route of feeding and current protocols which may be used to aid this process. While also presenting the factors which impact on the CDM process for the MDT when making decisions regarding feeding of the critically ill.

Through the site observations, focus groups and individual interviews the current study revealed that there are specific factors which the MDT in the ICU use to make decisions regarding feeding their critically ill patients, they look at the clinical factors of the patient for indications and contraindications to the different modes of feeding and try to make a clinical decision based on those factors. The factors that the MDT look at are divided into patient related and non-patient related factors. The patient factors include medical condition, level of consciousness, oxygen therapy, physiological and anatomical obstructions, signs of aspiration, patient abilities and preference, and finally nutritional requirements. The non-patient related factors included the public sector, teaching facilities, lack of equipment and stock, difficulty making specific accommodations and understaffing.

The CDM process was displayed throughout the data as a complex process in which multiple factors need to be taken into consideration before concluding on the best route of feeding for a critically ill patient. The study also revealed that the team of professionals working in these units work mostly in an MDT work concept but at times they use the interdisciplinary and transdisciplinary concept too. The allied healthcare workers such as STs and DTs were most likely to combine their tasks in an interdisciplinary manner while the doctors tend to work more in a transdisciplinary manner.

The study also revealed that there were no set protocols in place which aid this decision-making process and that the decision is usually left up to the doctor or in some cases a ST, if they have been referred to see the patient. There were some factors that had an impact on the decision, positive factors included interdisciplinary communication while negative factors were a lack of necessary equipment or stock.

In essence, the decision-making process of the MDT regarding a choice of mode of feeding is a combination of taking multiple factors into consideration, the factors are patient related and non-patient related. While also using their theoretical and experiential knowledge, and then concluding on the best mode of feeding for each patient. Once they have made the decision, they will then collaborate with other members of the MDT such as the DT or nurse to ensure that the decision which has been made will then be put into practice, in some cases this collaboration would be done before the final decision is made, in order to get input from another perspective or to overcome a possible challenge.

Evaluation of the study

Strengths

The current study was the first of its kind in the ICU setting in the SA public healthcare setting. Which proves the need for more research on the CDM process when it comes to feeding practices.

At the time of the study, the researcher was working in a similar setting to that of which the study took place. Therefore, the researcher had greater insight into the findings from the study and was thus able to obtain more detailed information than an outsider would have.

Limitations

A limitation of the study could be due to the non-probability purposive sampling strategy which was used. There was a smaller number of participants and study sites which does pose a threat to the generalisability of the research project; therefore it would be beneficial to conduct this study on a grander scale, including more participants and sites across the country. However, this sampling strategy allowed the researcher to ensure that the participants would have knowledge specific to the topic and they would therefore be able to inform the subject matter more effectively (Cresswell & Cresswell, 2017).

The emic position of the researcher has many positive implications for the research at hand, but it can also be seen as a limitation due to the possible effects of the researcher's personal biases on the interpretation of the data. However, in the current study the researcher made use of reflective journaling to minimise these effects. The researcher was also careful to note her reaction to the observations and interviews as well as her emotions during the process, while also describing the decision-making process taken during the data collection phase (Bonner & Tolhurst, 2002)

Most of the participants were female which could also limit the generalisability of the research project as the participant sample was not gender balanced and does not perhaps adequately represent the gender variation of the MDT working in these settings.

Another limitation of the study is that it was conducted on a smaller scale, it was only done in one province at two research sites therefore, and it may not accurately represent all the public healthcare sector in SA.

Implications

Implications for Theory

The outcomes of this study could be a frontier for research topics that focus on the role of ST in the ICU in SA and the CDM process with regards to dysphagia. This study could lead to further projects looking at developing a decision-making framework that all ICU staff could use to make evidence-based decisions regarding the commencement of safe oral feeding, while taking into account the unique environment and context of the ICU in SA. The insight from this study may also provide newly qualified clinicians with information on what to expect with regards to feeding practices in the ICU and assist all members of the ICU with a better understanding of how to safely feed the critically ill patient.

This study could also provide greater insight into some of the challenges facing the public ICUs in Gauteng and not only how these challenges impact on decision-making but also how professionals working in these settings have learned to overcome and adapt to their current environment.

Implications for Practice

In terms of practice and quality improvement activities this research will allow an opportunity to better understand the feeding practices in the ICU and the contextual factors that may impact the decision-making process and allow us to compare that with current evidence-based practice.

The interviews and focus groups may have also provided an opportunity for the MDT to reflect on and discuss their own experiences with regards to feeding practices in the ICU

and thereby allow for skill sharing and possibly improve the knowledge of participants with less experience.

This research topic can also inform us of current knowledge of all the professionals working in the ICU regarding oral feeding and dysphagia and assist those who teach to understand where the knowledge gaps are, and which areas may need more focus. Some gaps in the literature that were identified in this study are the concept of tolerance in terms of feeding and nutrition and the different understandings of what this word means in this setting, another area which could be researched further is the difference between written and verbal communication in the ICU and the efficacy of one versus the other. Finally, this study pointed out the lack of a decision-making protocol which could assist less experienced members of the MDT to make better decisions regarding the feeding of critically ill patients.

This study gave a great overview of current practice in the SA public ICU when it comes to dysphagia, this section can be a good resource for other clinicians to read and use as a guide when in similar circumstances. It provides an overview of the decision-making process regarding dysphagia in critically ill patients and gives a list of the factors that are currently being used when making these kinds of decisions.

Conclusion

The current study provided evidence regarding the CDM process around feeding practices in the public sector ICU in SA. The MDT in the ICU use clinical knowledge and experiential knowledge to make the decision of how to feed their patients. It was found that the MDT in the ICU make their decision on a route of feeding based mainly on clinical factors of the patient and they will possibly consider non-patient related factors if need be. The clinical factors of the patient which are taken into consideration include the medical condition, level of consciousness, oxygen therapy, physiological obstructions, and anatomical obstructions, signs of aspiration, patient abilities, patient preferences and nutritional requirements. The non-patient related factors that may need to be considered included the public sector, teaching facilities, lack of equipment and stock, difficulty making accommodations and staffing related concerns.

The study also found that the MDT in the ICU tend to work in a multidisciplinary concept and remain within their professional boundaries when making clinical decisions, the team member who is most likely to work in a transdisciplinary concept and go beyond their general scope of practice is the doctor. However, when doing so there is currently no protocol in place which can guide the professionals who need to make these decisions around feeding the critically ill patient.

An interesting finding of this study was the two different understandings of the word tolerance when it comes to feeding critically ill patients and how we assess if they are coping or not. The study also gave a deeper understanding of the current awareness, conceptions and practices of the ST in the public sector ICU in SA.

References

Abu Hassan, Z., Schattner, P., Mazza, D., Keluarga, K., & Lumpur, K. (2006). Research Notes Doing a pilot study: Why is it essential? *Malaysian Family Physician*, *1*(3), 170–173.

Altman, K. W. (2011). Dysphagia evaluation and care in the hospital setting: The need for protocolization. *Otolaryngology - Head and Neck Surgery*, *145*(6), 895–898. https://doi.org/10.1177/0194599811415803

American Speech-Language-Hearing Association. (n.d.). *Adult Dysphagia*. Practice Portal. Retrieved May 1, 2023, from https://www.asha.org/practice-portal/clinical-topics/adult-dysphagia/#collapse_9

Angus, D. C. (2020). Oxygen Therapy for the Critically Ill. *New England Journal of Medicine*, *382*(11), 1054–1056. https://doi.org/10.1056/NEJME2000800/SUPPL_FILE/NEJME2000800_DISCLOSURES.PDF

Arabi, Y. M., Reintam Blaser, A., & Preiser, J. C. (2019). When and how to manage enteral feeding intolerance? *Intensive Care Medicine*, *45*(7), 1029–1031. https://doi.org/10.1007/s00134-019-05635-9

Baillie, L. (2019). Exchanging focus groups for individual interviews when collecting qualitative data. *Nurse Researcher*, *27*(2). https://doi.org/10.7748/nr.2019.e1633

Barazzoni, R., Bischoff, S. C., Breda, J., Wickramasinghe, K., Krznaric, Z., Nitzan, D., Pirlich, M., & Singer, P. (2020). ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection. *Clinical Nutrition*, *39*(6), 1631–1638. https://doi.org/10.1016/j.clnu.2020.03.022

Bate, L., Hutchinson, A., Underhill, J., & Maskrey, N. (2012). How clinical decisions are made. *British Journal of Clinical Pharmacology*, *74*(4), 614–620. https://doi.org/10.1111/j.1365-2125.2012.04366.x

Bauer, P. R., Gajic, O., Nanchal, R., Kashyap, R., Martin-Loeches, I., Sakr, Y., Jakob, S. M., François, B., Wittebole, X., Wunderink, R. G., & Vincent, J. L. (2017). Association between timing of intubation and outcome in critically ill patients: A secondary analysis of the ICON audit. *Journal of Critical Care*, *42*, 1–5. https://doi.org/10.1016/j.jcrc.2017.06.010

Bellani, G., Laffey, J. G., Pham, T., Fan, E., Brochard, L., Esteban, A., Gattinoni, L., Van Haren, F. M. P., Larsson, A., McAuley, D. F., Ranieri, M., Rubenfeld, G., Thompson, B. T., Wrigge, H., Slutsky, A. S., & Pesenti, A. (2016). Epidemiology, patterns of care, and mortality for patients with acute respiratory distress syndrome in intensive care units in 50 countries. *JAMA - Journal of the American Medical Association*, *315*(8), 788–800. https://doi.org/10.1001/jama.2016.0291

Bendavid, I., Singer, P., Theilla, M., Themessl-Huber, M., Sulz, I., Mouhieddine, M., Schuh, C., Mora, B., & Hiesmayr, M. (2017). NutritionDay ICU: A 7 year worldwide prevalence study of nutrition practice in intensive care. *Clinical Nutrition*, *36*(4), 1122–1129. https://doi.org/10.1016/j.clnu.2016.07.012

Berger, M. M., Reintam-Blaser, A., Calder, P. C., Casaer, M., Hiesmayr, M. J., Mayer, K., Montejo, J. C., Pichard, C., Preiser, J. C., van Zanten, A. R. H., Bischoff, S. C., & Singer, P. (2019). Monitoring nutrition in the ICU. *Clinical Nutrition*, *38*(2), 584–593. https://doi.org/10.1016/J.CLNU.2018.07.009

Berney, S., Haines, K., & Denehy, L. (2012). Physiotherapy in Critical Care in Australia. *Cardiopulmonary Physical Therapy Journal*, *23*(1), 19–25. https://doi.org/10.1097/01823246-201223010-00004

Bhattacharya, S. (2014). Clinical photography and our responsibilities. *Indian Journal of Plastic Surgery*, 47(3), 277–280. https://doi.org/10.4103/0970-0358.146569

Bittencourt, E. da S., Moreira, P. S., da Paixão, G. M., & Cardoso, M. M. (2021). The role of the occupational therapist in the Intensive Care Unit: A systematic review. *Brazilian Journal of Occupational Therapy*, *29*, 1–21. https://doi.org/10.1590/2526-8910.CTOAR2118

Bonner, A., & Tolhurst, G. (2002). Insider-outsider perspectives of participant observation. *Nurse Researcher*, *9*(4), 7–19. https://doi.org/10.7748/nr2002.07.9.4.7.c6194

Bonvento, B., Wallace, S., Lynch, J., Coe, B., & McGrath, B. A. (2017a). Role of the multidisciplinary team in the care of the tracheostomy patient. *Journal of Multidisciplinary Healthcare*, *10*, 391–398. https://doi.org/10.2147/JMDH.S118419

Bonvento, B., Wallace, S., Lynch, J., Coe, B., & McGrath, B. A. (2017b). Role of the multidisciplinary team in the care of the tracheostomy patient. *Journal of Multidisciplinary Healthcare*, *10*, 391–398. https://doi.org/10.2147/JMDH.S118419

Boullata, J. I., Carrera, A. L., Harvey, L., Escuro, A. A., Hudson, L., Mays, A., McGinnis, C., Wessel, J. J., Bajpai, S., Beebe, M. L., Kinn, T. J., Klang, M. G., Lord, L., Martin, K., Pompeii-Wolfe, C., Sullivan, J., Wood, A., Malone, A., & Guenter, P. (2017). ASPEN Safe Practices for Enteral Nutrition Therapy. *Journal of Parenteral and Enteral Nutrition*, *41*(1), 15–103. https://doi.org/10.1177/0148607116673053

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., Clarke, V., & Hayfield, N. (2019). 'A starting point for your journey, not a map': Nikki Hayfield in conversation with Virginia Braun and Victoria Clarke about thematic analysis. *Https://Doi.Org/10.1080/14780887.2019.1670765*, *19*(2), 424–445. https://doi.org/10.1080/14780887.2019.1670765

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2019). Thematic analysis. In *Handbook of Research Methods in Health Social Sciences* (pp. 843–860). Springer Singapore. https://doi.org/10.1007/978-981-10-5251-4_103

Brodsky, M. B., Mayfield, E. B., & Gross, R. D. (2019). Clinical decision making in the ICU: Dysphagia screening, assessment, and treatment. *Seminars in Speech and Language*, *40*(3), 170–187. https://doi.org/10.1055/s-0039-1688980

Brodsky, M. B., Pandian, V., & Needham, D. M. (2020). Post-extubation dysphagia: a problem needing multidisciplinary efforts. *Intensive Care Medicine*, *46*(1), 93–96. https://doi.org/10.1007/s00134-019-05865-x

Burns, K. E. A., Misak, C., Herridge, M., Meade, M. O., & Oczkowski, S. (2018). Patient and family engagement in the ICU untapped opportunities and underrecognized challenges.

American Journal of Respiratory and Critical Care Medicine, *198*(3), 310–319. https://doi.org/10.1164/rccm.201710-2032CI

Campbell, K. A., Orr, E., Durepos, P., Nguyen, L., Li, L., Whitmore, C., Gehrke, P., Graham, L., & Jack, S. M. (2021). Reflexive thematic analysis for applied qualitative health research. *Qualitative Report*, *26*(6), 2011–2028. https://doi.org/10.46743/2160-3715/2021.5010

Candela, A. G. (2019). Exploring the function of member checking. *Qualitative Report*, *24*(3), 619–628. https://doi.org/10.46743/2160-3715/2019.3726

Cardinal, L. A., Freeman-Sanderson, A., & Togher, L. (2020). The speech pathology workforce in intensive care units: Results from a national survey. *Australian Critical Care*, *33*(3), 250–258. https://doi.org/10.1016/J.AUCC.2020.02.003

Chen, D. E., Goh, S. W., Chan, H. N., Goh, H. Z., Ong, S. Y., Sim, S., & Ho, V. K. (2021). Rehabilitation of intubated COVID-19 patients in a Singapore regional hospital with early intensive care unit and sustained post-intensive care unit rehabilitation. *Proceedings of Singapore Healthcare*, *31*, 1–7. https://doi.org/10.1177/20101058211035195

Choi, B. C. K., & Pak, A. W. P. (2007). *Multidisciplinarity, interdisciplinarity, and transdisciplinarity in health research, services, education and policy: 1. Definitions, objectives, and evidence of effectiveness. Clin Invest Med, 29(6), 351-64. PMID: 17330451*

Christensen, M., & Trapl, M. (2018). Development of a modified swallowing screening tool to manage post-extubation dysphagia. *Nursing in Critical Care*, *23*(2), 102–107. https://doi.org/10.1111/nicc.12333

Colorafi, K. J., & Evans, B. (2016). Qualitative Descriptive Methods in Health Science Research. *Health Environments Research and Design Journal*, *9*(4), 16–25. https://doi.org/10.1177/1937586715614171

Comisso, I., Lucchini, A., Bambi, S., Giusti, G. D., & Manici, M. (2018). *Nursing in critical care setting : an overview from basic to sensitive outcomes*. Springer. https://books.google.com/books/about/Nursing_in_Critical_Care_Setting.html?id=y_VeDwAAQBAJ

Cotogni, P. (2017). Management of parenteral nutrition in critically ill patients. *World Journal of Critical Care Medicine*, *6*(1), 13. https://doi.org/10.5492/wjccm.v6.i1.13

Coutts, K., & Pillay, M. (2021). Decision making and the bedside assessment: The Speech Language Therapists' thinking when making a diagnosis at the bed. *The South African Journal of Communication Disorders = Die Suid-Afrikaanse Tydskrif Vir Kommunikasieafwykings*, *68*(1), e1–e8. https://doi.org/10.4102/sajcd.v68i1.790

Cresswell, J. W., & Cresswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches - John W. Creswell, J. David Creswell - Google Books*. SAGE Publications. https://books.google.co.za/books?id=335ZDwAAQBAJ&dq=mixed+methods+approach&source=gbs_navlinks_s

Cresswell, J. W., & Plano Clark, V. (2017). *Designing and Conducting Mixed Methods Research - John W. Creswell, Vicki L. Plano Clark - Google Books*. SAGE Publications. https://books.google.co.za/books?id=eTwmDwAAQBAJ&printsec=frontcover&dq=purposive+sampling+in+mixed+methods&hl=en&sa=X&ved=2ahUKEwj339PI-aDvAhVOasAKHXRqAhoQ6AEwAnoECAQQAg#v=onepage&q=purposive sampling in mixed methods&f=false

Curci, C., Pisano, F., Bonacci, E., Camozzi, D. M., Ceravolo, C., Bergonzi, R., De Franseschi, S., Moro, P., Guaerini, R., Ferrillo, M., Negrini, F., & De Sire, A. (2020). Early rehabilitation in post-acute COVID-19 patients: Data from an Italian COVID-19 Rehabilitation Unit and proposal of a treatment protocol. *European Journal of Physical and Rehabilitation Medicine*, *56*(5), 633–641. https://doi.org/10.23736/S1973-9087.20.06339-X

Cypress, B. S. (2017). *Rigor or Reliability and Validity in Qualitative Research : Perspectives , Strategies , Reconceptualization , and Recommendations*. *36*(August), 253–263. https://doi.org/10.1097/DCC.0000000000000253

Dawson, C., Riopelle, S. J., & Skoretz, S. A. (2021). Translating Dysphagia Evidence into Practice While Avoiding Pitfalls: Assessing Bias Risk in Tracheostomy Literature. *Dysphagia*, *36*(3), 409–418. https://doi.org/10.1007/s00455-020-10151-w

De Beer, J., Brysiewicz, P., & Bhengu, R. (2011). Intensive care nursing in South Africa. *Southern African Journal of Critical Care*, *27*(1), 6–10. https://doi.org/10.7196/SAJCC.111

de Bock, B. A., Willems, D. L., & Weinstein, H. C. (2018). Complexity perspectives on clinical decision making in an intensive care unit. *Journal of Evaluation in Clinical Practice*, *24*(1), 308–313. https://doi.org/10.1111/jep.12794

Delsoglio, M., Pichard, C., & Singer, P. (2020). How to choose the best route of feeding during critical illness. *Clinical Nutrition ESPEN*, *37*(2020), 247–254. https://doi.org/10.1016/j.clnesp.2020.03.019

Denzin, N. (2017). *The Research Act: A Theoretical Introduction to Sociological Methods - Norman K. Denzin - Google Books*. Transaction Publishers. https://books.google.co.za/books?id=UjcpxFE0T4cC&dq=The+research+Act:+a+theoretical+introduction+to+sociological+methods+PDF&lr=&source=gbs_navlinks_s

Diego, I., & Munthree, C. (2020, July 9). *2020 Mid-year population estimates | Statistics South Africa*. http://www.statssa.gov.za/?p=13453

Dogba, M. J., Menear, M., Stacey, D., Brière, N., & Légaré, F. (2016). The evolution of an interprofessional shared decision-making research program: Reflective case study of an emerging Paradigm. *International Journal of Integrated Care*, *16*(July-September), 1–11. https://doi.org/10.5334/ijic.2212

Donovan, A. L., Matthew Aldrich, J., Kendall Gross, A., Barchas, D. M., Thornton, K. C., Schell-Chaple, H. M., Gropper, M. A., & Lipshutz, A. K. M. (2018). Interprofessional care and teamwork in the ICU. *Critical Care Medicine*, *46*(6), 980–990. https://doi.org/10.1097/CCM.0000000000003067

Fadeur, M., Preiser, J. C., Rousseau, A. F., Verbrugge, A. M., & Misset, B. (2020). Oral nutrition during and after critical illness: Spices for quality of care! *Nutrients*, *12*(11), 1–16. https://doi.org/10.3390/nu12113509

Fan, E., Brodie, D., & Slutsky, A. S. (2018). Acute respiratory distress syndrome advances in diagnosis and treatment. *JAMA - Journal of the American Medical Association*, *319*(7), 698–710. https://doi.org/10.1001/jama.2017.21907

FirstRand's SPIRE fund provides additional ICU capacity to Charlotte Maxeke Hospital - Rand Merchant Bank. (n.d.). Retrieved January 2, 2023, from https://www.rmb.co.za/news/firstrands-spire-fund-provides-additional-icu-capacity-to-charlotte-maxeke-hospital

Flaatten, H., & Waldmann, C. (2020). The Post-ICU Syndrome, History and Definition. In

Intensive Care Medicine. Springer, Cham. https://doi.org/10.1007/978-3-030-24250-3_1

Fossat, G., Desmalles, E., Courtes, L., Fossat, C., & Boulain, T. (2023). Cough Peak Flow Assessment Without Disconnection From the ICU Ventilator in Mechanically Ventilated Patients. *Respiratory Care*, *68*(4), 470–477. https://doi.org/10.4187/RESPCARE.10412

Fraenkel, J., Wallen, N., & Hyun, H. (2006). *How to Design and Evaluate Research in Education* (8th ed.). McGraw-Hill Education.

Frajkova, Z., Tedla, M., Tedlova, E., Suchankova, M., & Geneid, A. (2020). Postintubation Dysphagia During COVID-19 Outbreak-Contemporary Review. *Dysphagia*, *35*(4), 549–557. https://doi.org/10.1007/s00455-020-10139-6

Fugard, A. J. B., & Potts, H. W. W. (2015). Supporting thinking on sample sizes for thematic analyses: a quantitative tool. *International Journal of Social Research Methodology*, *18*(6), 669–684. https://doi.org/10.1080/13645579.2015.1005453

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *Qualitative Report*, *20*(9), 1408–1416. https://doi.org/10.46743/2160-3715/2015.2281

Glaw, X., Inder, K., Kable, A., & Hazelton, M. (2017). Visual Methodologies in Qualitative Research: Autophotography and Photo Elicitation Applied to Mental Health Research. *International Journal of Qualitative Methods*, *16*(1), 1–8. https://doi.org/10.1177/1609406917748215

Goh, K. J., Wong, J., Tien, J. C. C., Ng, S. Y., Duu Wen, S., Phua, G. C., & Leong, C. K. L. (2020). Preparing your intensive care unit for the COVID-19 pandemic: Practical considerations and strategies. *Critical Care*, *24*(1), 1–12. https://doi.org/10.1186/s13054-020-02916-4

Goñi-Viguria, R., Yoldi-Arzoz, E., Casajús-Sola, L., Aquerreta-Larraya, T., Fernández-Sangil, P., Guzmán-Unamuno, E., & Moyano-Berardo, B. M. (2018). Respiratory physiotherapy in intensive care unit: Bibliographic review. *Enfermería Intensiva (English Ed.)*, *29*(4), 168–181. https://doi.org/10.1016/J.ENFIE.2018.03.002

Gordon, B. G. (2020). Vulnerability in Research: Basic Ethical Concepts and General Approach to Review. *Ochsner Journal*, *20*(1), 34–38. https://doi.org/10.31486/TOJ.19.0079

Grasselli, G., Zangrillo, A., Zanella, A., Antonelli, M., Cabrini, L., Castelli, A., Cereda, D., Coluccello, A., Foti, G., Fumagalli, R., Iotti, G., Latronico, N., Lorini, L., Merler, S., Natalini, G., Piatti, A., Ranieri, M. V., Scandroglio, A. M., Storti, E., … Pesenti, A. (2020). Baseline Characteristics and Outcomes of 1591 Patients Infected with SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy. *JAMA - Journal of the American Medical Association*, *323*(16), 1574–1581. https://doi.org/10.1001/jama.2020.5394

Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLoS ONE*, *15*(5), 1–17. https://doi.org/10.1371/journal.pone.0232076

Gundumogula, M. (2021). *Importance of Focus Groups in Qualitative Research Manju Gundumogula To cite this version : HAL Id : hal-03126126 THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES Importance of Focus Groups in Qualitative Research*. *8*(11).

Department of Health. (2020). *Covid-19 Environmental Health Guidelines*, 1–7. https://health.gov.za/wp-content/uploads/2020/11/response-guidelines-covid-19-environmetal-health.pdf

Heyhoe, J., Birks, Y., Harrison, R., O'Hara, J. K., Cracknell, A., & Lawton, R. (2016). The role

of emotion in patient safety: Are we brave enough to scratch beneath the surface? *Journal of the Royal Society of Medicine*, *109*(2), 52–58. https://doi.org/10.1177/0141076815620614

Hill, L. T. (2015). Nutrition support practices in South African ICUs: Results from a nationwide pilot survey. *Southern African Journal of Critical Care*, *31*(2), 42–50. https://doi.org/10.7196/SAJCC.2015.v31i2.252

Holloway, I., & Galvin, K. (2016). *Qualitative Research in Nursing and Healthcare* . John Wiley & Sons. https://books.google.co.za/books?id=CYnIDAAAQBAJ&dq=content+thematic+analysis&source=gbs_navlinks_s

Hongo, T., Yamamoto, R., Liu, K., Yaguchi, T., Dote, H., Saito, R., Masuyama, T., Nakatsuka, K., Watanabe, S., Kanaya, T., Yamaguchi, T., Yumoto, T., Naito, H., & Nakao, A. (2022). Association between timing of speech and language therapy initiation and outcomes among post-extubation dysphagia patients: a multicenter retrospective cohort study. *Critical Care*, *26*(1), 1–10. https://doi.org/10.1186/s13054-022-03974-6

Howard, P. (2009). Basics in clinical nutrition: Enteral nutrition. *E-SPEN*, *4*(5), e223–e225. https://doi.org/10.1016/j.eclnm.2009.05.008

HPCSA. (2021). *Professional Boards - HPCSA*. https://www.hpcsa.co.za/?contentId=0&menuSubId=54&actionName=Professional Boards

HPCSA. (2023). *Professional Boards - HPCSA*. https://www.hpcsa.co.za/?contentId=0&menuSubId=10&actionName=Professional Boards

Humbert, I. (2015). *Critical thinking in dysphagia management - Dysphagia Cafe*. Dysphagia Cafe. https://dysphagiacafe.com/2015/06/03/critical-thinking-in-dysphagia-management/

James-Pettway, L. (2020). *Preventing Aspiration Pneumonia Using an Aspiration Prevention Protocol Walden University*.

Jones, J., & Smith, J. (2017). *Ethnography : challenges and opportunities*. *20*(4), 98–100.

Joseph-Williams, N., Lloyd, A., Edwards, A., Stobbart, L., Tomson, D., Macphail, S., Dodd, C., Brain, K., Elwyn, G., & Thomson, R. (2017). Implementing shared decision making in the NHS: lessons from the MAGIC programme. *BMJ (Clinical Research Ed.)*, *357*, j1744. https://doi.org/10.1136/bmj.j1744

Jyoti, M. (2018). Role of Physiotherapist in Critical Care Situations: Recent Perspective. *Journal of Cardiac Critical Care TSS*, *02*(01), 014–018. https://doi.org/10.1055/s-0038-1673494

Karrim, A. (2020). *New ICU ward at Charlotte Maxeke could change Gauteng's Covid-19 trajectory - Prof | News24*. News24. https://www.news24.com/news24/southafrica/news/new-icu-ward-at-charlotte-maxeke-could-change-gautengs-covid-19-trajectory-prof-20200702

Kim, S. H., Kim, D. M., Park, H. E., Shin, Y. B., Lee, B. J., Jang, M. H., & Yoon, J. A. (2022). Gold Standard? Method of Citric Acid Solution Swallowing Test as a Screening Test for Patients with Tracheostomy. *Dysphagia*, *37*(3), 533–539. https://doi.org/10.1007/S00455-021-10300-9/METRICS

Kisorio, L. C., & Langley, G. C. (2019). Critically ill patients' experiences of nursing care in the intensive care unit. *Nursing in Critical Care*, *24*(6), 392–398. https://doi.org/10.1111/nicc.12409

Kozlowski, D., Hutchinson, M., Hurley, J., Rowley, J., & Sutherland, J. (2017). The role of emotion in clinical decision making: An integrative literature review. *BMC Medical Education*, *17*(1), 1–13. https://doi.org/10.1186/s12909-017-1089-7

Kwok, A. M., Davis, J. W., Cagle, K. M., Sue, L. P., & Kaups, K. L. (2013). Post-extubation dysphagia in trauma patients: It's hard to swallow. *American Journal of Surgery*, *206*(6), 924–928. https://doi.org/10.1016/j.amjsurg.2013.08.010

Lawrence, D. (2007). The Four Principles of Biomedical Ethics: A Foundation for Current Bioethical Debate. *Journal of Chiropractic Humanities*, *14*, 34–40. https://doi.org/10.1016/S1556-3499(13)60161-8

Leedy, P. D., & Ormrod, J. E. (2010). *Practical Research: Planning and Design* (9th ed.). Pearson. https://doi.org/10.2307/1318509

Levy, J., Léotard, A., Lawrence, C., Paquereau, J., Bensmail, D., Annane, D., Delord, V., Lofaso, F., Bessis, S., & Prigent, H. (2020). A model for a ventilator-weaning and early rehabilitation unit to deal with post-ICU impairments following severe COVID-19. In *Annals of Physical and Rehabilitation Medicine* (Vol. 63, Issue 4, pp. 376–378). Elsevier Masson SAS. https://doi.org/10.1016/j.rehab.2020.04.002

Liu, X. Ben, Xing, W. Q., & Sun, H. B. (2019). Early oral feeding following esophagectomy. *Journal of Thoracic Disease*, *11*(I), S824–S830. https://doi.org/10.21037/jtd.2019.01.24

Mafata, M. (2022). *Charlotte Maxeke closure is placing "severe strain" on Helen Joseph | GroundUp*. GroundUp. https://www.groundup.org.za/article/doctors-say-continued-closure-charlotte-maxeke-hospital-placing-severe-strain-on-helen-joseph-hospital/

Maguire, L. M. D., Vazquez, D. E., Haney, A., Byrd, C., & Sanders, E. B.-N. (2019). Transdisciplinary Co-Design to Envision the Needs of the Intensive Care Unit of the Future. *Proceedings of the International Symposium on Human Factors and Ergonomics in Health Care*, *8*(1), 181–181. https://doi.org/10.1177/2327857919081044

Mah, J. W., Staff, I. I., Fisher, S. R., & Butler, K. L. (2017). Improving decannulation and swallowing function: A comprehensive, multidisciplinary approach to post-tracheostomy care. *Respiratory Care*, *62*(2), 137–143. https://doi.org/10.4187/respcare.04878

Malakoane, B., Heunis, J. C., Chikobvu, P., Kigozi, N. G., & Kruger, W. H. (2020). Public health system challenges in the Free State, South Africa: A situation appraisal to inform health system strengthening. *BMC Health Services Research*, *20*(1), 1–14. https://doi.org/10.1186/s12913-019-4862-y

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative Health Research*, *26*(13), 1753–1760. https://doi.org/10.1177/1049732315617444

Mann, G. (2002). *MASA, the Mann assessment of swallowing ability*. Singular Thomson Learning. https://books.google.com/books/about/MASA.html?id=GIkJzgEACAAJ

Maphumulo, W. T., & Bhengu, B. R. (2019). Challenges of quality improvement in the healthcare of South Africa post-apartheid: A critical review. *Curationis*, *42*(1), 1–9. https://doi.org/10.4102/curationis.v42i1.1901

Marian, T., Dünser, M., Citerio, G., Koköfer, A., & Dziewas, R. (2018). Are intensive care physicians aware of dysphagia? The MAD ICU survey results. *Intensive Care Medicine*, *44*(6), 973–975. https://doi.org/10.1007/s00134-018-5181-1

Marshall, J. C., Bosco, L., Adhikari, N. K., Connolly, B., Diaz, J. V., Dorman, T., Fowler, R. A., Meyfroidt, G., Nakagawa, S., Pelosi, P., Vincent, J. L., Vollman, K., & Zimmerman, J. (2017). What is an intensive care unit? A report of the task force of the World Federation

of Societies of Intensive and Critical Care Medicine. *Journal of Critical Care*, *37*, 270–276. https://doi.org/10.1016/j.jcrc.2016.07.015

Martino, R., Silver, ; Frank, Teasell, R., Bayley, M., Nicholson, ; Gordon, Streiner, D. L., & Diamant, N. E. (2009). The Toronto Bedside Swallowing Screening Test (TOR-BSST). *Stroke*, *40*(2), 555–561. https://doi.org/10.1161/STROKEAHA.107.510370

Matsuo, K., & Palmer, J. B. (2009). Mastication, Swallowing and Breathing. *Japanese Dental Science Review*, *45*(1), 31–40. https://doi.org/10.1016/j.jdsr.2009.03.004.Coordination

Mbunge, E. (2020). Effects of COVID-19 in South African health system and society: An explanatory study. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*, *14*(6), 1809–1814. https://doi.org/10.1016/j.dsx.2020.09.016

McClave, S. A., Martindale, R. G., Vanek, V. W., McCarthy, M., Roberts, P., Taylor, B., Ochoa, J. B., Napolitano, L., & Cresci, G. (2009). Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of critical care medicine (SCCM) and American society for parenteral and enteral nutrition (A.S.P.E.N.). *Journal of Parenteral and Enteral Nutrition*, *33*(3), 277–316. https://doi.org/10.1177/0148607109335234

McGrath, B., & Myatra, S. N. (2020). The Patient with a Tracheostomy. In T. Cook & M. Kristensen (Eds.), *Core Topics in Airway Management*. Cambridge University Press. https://doi.org/10.1017/9781108303477.031

McRae, J. (2018). ICU MANAGEMENT & PRACTICE. *Intensive Care Emergency Medicine Anesthesiology*, *18*(2), 128–130. https://healthmanagement.org/uploads/article_attachment/icu-v18-i2-jackie-mcrae-the-role-of-speech.pdf%0Ahttps://healthmanagement.org/uploads/article_attachment/icu-v17-i3-mojoli-ultrasound.pdf

McRae, J., Montgomery, E., Garstang, Z., & Cleary, E. (2020). The role of speech and language therapists in the intensive care unit. *Journal of the Intensive Care Society*, *21*(4), 344–348. https://doi.org/10.1177/1751143719875687

Miksza, P., & Elpus, K. (2018). *Design and Analysis for Quantitative Research in Music Education - Peter Miksza, Kenneth Elpus - Google Books*. Oxford University Press. https://books.google.co.za/books?id=IvBIDwAAQBAJ&dq=quantitative+data+analysis+surveys&source=gbs_navlinks_s

Monsen, E., & Van Horn, L. (2007). *Research: Successful Approaches* (Third). American Dietetic Association . https://books.google.co.za/books?id=0Mq_NH8yJXsC&pg=PA202&lpg=PA202&dq=horn+and+monsen+pilot+study&source=bl&ots=c0za68g218&sig=ACfU3U1hjGRIwHe6mIw1lmNJ8z9lfxKl_Q&hl=en&sa=X&ved=2ahUKEwj2h-iDi4DyAhWGOcAKHUTVAhsQ6AEwBnoECAYQAw#v=onepage&q=pilot study&f=false

Naidoo, K., Singh, J., & Lalloo, U. (2013). Critical analysis of ICU/HC beds in South Africa: 2008-2009. *South African Medical Journal*, *103*(10), 751–753. https://doi.org/10.7196/SAMJ.6415

Naidoo, R., & Naidoo, K. (2021). Prioritising ‘already-scarce’ intensive care unit resources in the midst of COVID-19: a call for regional triage committees in South Africa. *BMC Medical Ethics*, *22*(1), 1–9. https://doi.org/10.1186/s12910-021-00596-5

Naidu, T., & Prose, N. (2018). Re-envisioning member checking and communicating results as accountability practice in qualitative research: A South African community-based organization example. *Forum Qualitative Sozialforschung*, *19*(3). https://doi.org/10.17169/FQS-19.3.3153

NHS. (2021). *Intensive care medicine | Health Careers*. https://www.healthcareers.nhs.uk/explore-roles/doctors/roles-doctors/intensive-care-medicine

Nielsen, A. H., Kaldan, G., Nielsen, B. H., Kristensen, G. J., Shiv, L., & Egerod, I. (2022). Intensive care professionals' perspectives on dysphagia management: A focus group study. *Australian Critical Care*, *xxxx*. https://doi.org/10.1016/j.aucc.2022.04.004

Noble, H., & Heale, R. (2019). Triangulation in research, with examples. *Evidence-Based Nursing*, *22*(3), 67–68. https://doi.org/10.1136/ebnurs-2019-103145

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, *16*(1), 1–13. https://doi.org/10.1177/1609406917733847

Ntoumenopoulos, G. (2015). Rehabilitation during mechanical ventilation: Review of the recent literature. *Intensive and Critical Care Nursing*, *31*(3), 125–132. https://doi.org/10.1016/j.iccn.2015.02.001

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., Hoagwood, K., Angeles, L., & Northwest, K. P. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm Policy Ment Health*, *42*(5), 533–544. https://doi.org/10.1007/s10488-013-0528-y.Purposeful

Parliament of the Republic of South Africa. (2019). *ACT - POPIA*. https://popia.co.za/act/

Parliament of the Republic of South Africa. (2022). *Overview of Charlotte Maxeke Johannesburg Academic Hospital (CMJAH)* (Issue March).

Peter, E. (2015). A ética na pesquisa qualitativa em saúde: Considerações especiais. *Ciencia e Saude Coletiva*, *20*(9), 2625–2630. https://doi.org/10.1590/1413-81232015209.06762015

Pillay, M., & Seedat, J. (2020). *SASLHA ' s position : Dysphagia Guidelines during COVID - 19*. SASLHA.

Prohaska, C. C., Sottile, P. D., Nordon-Craft, A., Gallagher, M. D., Burnham, E. L., Clark, B. J., Ho, M., Kiser, T. H., Vandivier, R. W., Liu, W., Schenkman, M., & Moss, M. (2019). Patterns of utilization and effects of hospital-specific factors on physical, occupational, and speech therapy for critically ill patients with acute respiratory failure in the USA: Results of a 5-year sample. *Critical Care*, *23*(1), 1–8. https://doi.org/10.1186/S13054-019-2467-9/TABLES/3

Public healthcare: How much per person? | *Statistics South Africa*. (2017). https://www.statssa.gov.za/?p=10548

Quintard, H., l'Her, E., Pottecher, J., Adnet, F., Constantin, J. M., De Jong, A., Diemunsch, P., Fesseau, R., Freynet, A., Girault, C., Guitton, C., Hamonic, Y., Maury, E., Mekontso-Dessap, A., Michel, F., Nolent, P., Perbet, S., Prat, G., Roquilly, A., … Donetti, L. (2017). Intubation and extubation of the ICU patient. *Anaesthesia Critical Care and Pain Medicine*, *36*(5), 327–341. https://doi.org/10.1016/j.accpm.2017.09.001

Regmi, P. R., Aryal, N., Kurmi, O., Pant, P. R., van Teijlingen, E., & Wasti, S. P. (2017). Informed Consent in Health Research: Challenges and Barriers in Low-and Middle-Income Countries with Specific Reference to Nepal. *Developing World Bioethics*, *17*(2), 84–89. https://doi.org/10.1111/dewb.12123

Ridley, E. J., Parke, R. L., Davies, A. R., Bailey, M., Hodgson, C., Deane, A. M., McGuinness, S., & Cooper, D. J. (2019). What Happens to Nutrition Intake in the Post–Intensive Care Unit Hospitalization Period? An Observational Cohort Study in Critically Ill Adults. *Journal*

of Parenteral and Enteral Nutrition, *43*(1), 88–95. https://doi.org/10.1002/jpen.1196

Roulston, K. (2018, January 18). *Triangulation in qualitative research – QualPage*. QualPage. https://qualpage.com/2018/01/18/triangulation-in-qualitative-research/

Russell, S., Highsmith, L., Henriquez, O., Belagaje, S., & Moore, C. (2017). The efficacy of tracheostomy tube changes by speech-language pathologists: A retrospective review. *International Journal of Therapy and Rehabilitation*, *24*(11), 466–472. https://doi.org/10.12968/ijtr.2017.24.11.466

Ryan, F., Coughlan, M., & Cronin, P. (2013). Interviewing in qualitative research: The one-to-one interview. *Http://Dx.Doi.Org/10.12968/Ijtr.2009.16.6.42433*, *16*(6), 309–314. https://doi.org/10.12968/IJTR.2009.16.6.42433

Saks, M., & Allsop, J. (2012). *Researching Health: Qualitative, Quantitative and Mixed Methods - Google Books*. Sage. https://books.google.co.za/books?id=RjPtBgAAQBAJ&dq=semi+structured+interviews+in+health+sciences&lr=&source=gbs_navlinks_s

Santos, K. da S., Ribeiro, M. C., de Queiroga, D. E. U., da Silva, I. A. P., & Ferreira, S. M. S. (2020). The use of multiple triangulations as a validation strategy in a qualitative study. *Ciencia e Saude Coletiva*, *25*(2), 655–664. https://doi.org/10.1590/1413-81232020252.12302018

Sargeant, J. (2012). Qualitative Research Part II: Participants, Analysis, and Quality Assurance. *Journal of Graduate Medical Education*, *4*(1), 1–3. https://doi.org/10.4300/jgme-d-11-00307.1

Sasangohar, F., Dhala, A., Zheng, F., Ahmadi, N., Kash, B., & Masud, F. (2020). Use of telecritical care for family visitation to ICU during the COVID-19 pandemic: An interview study and sentiment analysis. *BMJ Quality and Safety*, 1–7. https://doi.org/10.1136/bmjqs-2020-011604

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality and Quantity*, *52*(4), 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Schaefer, A., Benbenishty, J., Gutysz-Wojnicka, A., Slijepcevic, J., Scelsi, S., Bruyneel, A., & Klas, M. K. (2018). Nurses Responsibilities on Providing Enteral Nutrition to the Critically Ill Patient—An European Federation of Critical Care Nursing Associations Position Paper. *Connect: The World of Critical Care Nursing*, *12*(3), 86–89. https://doi.org/10.1891/1748-6254.12.3.86

Schar, M. S., Omari, T. I., Fraser, R. J., Bersten, A. D., & Bihari, S. (2020). Disordered swallowing associated with prolonged oral endotracheal intubation in critical illness. *Intensive Care Medicine*, *46*(1), 140–142. https://doi.org/10.1007/s00134-019-05844-2

Schefold, J. C., Berger, D., Zürcher, P., Lensch, M., Perren, A., Jakob, S. M., Parviainen, I., & Takala, J. (2017). Dysphagia in mechanically ventilated ICU patients (Dynamics): A prospective observational trial. *Critical Care Medicine*, *45*(12), 2061–2069. https://doi.org/10.1097/CCM.0000000000002765

Schindler, K., Themessl-Huber, M., Hiesmayr, M., Kosak, S., Lainscak, M., Laviano, A., Ljungqvist, O., Mouhieddine, M., Schneider, S., De Van Der Schueren, M., Schütz, T., Schuh, C., Singer, P., Bauer, P., & Pichard, C. (2016). To eat or not to eat? Indicators for reduced food intake in 91,245 patients hospitalized on nutritionDays 2006-2014 in 56 countries worldwide: A descriptive analysis. *American Journal of Clinical Nutrition*, *104*(5), 1393–1402. https://doi.org/10.3945/ajcn.116.137125

Seron-Arbeloa, C., Zamora-Elson, M., Labarta-Monzona, L., & Mallor-Bonet, T. (2013). Enteral nutrition in critical illness: Part One. *J Clin Med Res*, *5*(1), 1–11. https://doi.org/10.7748/paed.11.7.16.s14

Sevin, C., Bloom, S., Jackson, J., Wang, L., Wesley, E., & Stollings, J. (2018). Comprehensive Care of ICU Survivors: Development and Implementation of an ICU Recovery Center. *Journal of Critical Care*, *46*(1), 141–148. https://doi.org/10.1016/j.jcrc.2018.02.011.Comprehensive

Shaker, R., & Geenen, J. E. (2011). Management of Dysphagia in Stroke Patients. *Gastroenterology & Hepatology*, *7*(5), 308. /pmc/articles/PMC3127036/

Sharma, S., & Rani, R. (2020). Nurse-to-patient ratio and nurse staffing norms for hospitals in India: A critical analysis of national benchmarks. *Journal of Family Medicine and Primary Care*, *6*(2), 169–170. https://doi.org/10.4103/jfmpc.jfmpc

Sheng, Y., Dong, D., He, G., & Zhang, J. (2022). How Noise Can Influence Experience-Based Decision-Making under Different Types of the Provided Information. *International Journal of Environmental Research and Public Health*, *19*(16). https://doi.org/10.3390/ijerph191610445

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, *22*(2), 63–75. https://doi.org/10.3233/EFI-2004-22201

Shrestha, B., & Dunn, L. (2020). The Declaration of Helsinki on Medical Research involving Human Subjects: A Review of Seventh Revision. *Journal of Nepal Health Research Council*, *17*(4), 548–552. https://doi.org/10.33314/jnhrc.v17i4.1042

Sierzega, M., Choruz, R., Pietruszka, S., Kulig, P., Kolodziejczyk, P., & Kulig, J. (2015). Feasibility and Outcomes of Early Oral Feeding After Total Gastrectomy for Cancer. *Journal of Gastrointestinal Surgery*, *19*(3), 473–479. https://doi.org/10.1007/s11605-014-2720-0

Skoretz, S. A., Riopelle, S. J., Wellman, L., & Dawson, C. (2020). Investigating swallowing and tracheostomy following critical illness: A scoping review. *Critical Care Medicine*, E141–E151. https://doi.org/10.1097/CCM.0000000000004098

Studer, P., Räber, G., Ott, D., Candinas, D., & Schnüriger, B. (2016). Risk factors for fatal outcome in surgical patients with postoperative aspiration pneumonia. *International Journal of Surgery*, *27*, 21–25. https://doi.org/10.1016/j.ijsu.2016.01.043

Sun, H. B., Li, Y., Liu, X. Ben, Wang, Z. F., Zhang, R. X., Lerut, T., Zheng, Y., Liu, S. L., & Chen, X. K. (2019). Impact of an Early Oral Feeding Protocol on Inflammatory Cytokine Changes After Esophagectomy. *Annals of Thoracic Surgery*, *107*(3), 912–920. https://doi.org/10.1016/j.athoracsur.2018.09.048

Tatsumi, H. (2019). Enteral tolerance in critically ill patients. *Journal of Intensive Care*, *7*(1), 1–10. https://doi.org/10.1186/s40560-019-0378-0

Tausch, A. P., & Menold, N. (2016). Methodological Aspects of Focus Groups in Health Research: Results of Qualitative Interviews With Focus Group Moderators. *Global Qualitative Nursing Research*, *3*. https://doi.org/10.1177/2333393616630466

Terblanche, E. (2019). The role of dietitians in critical care. *Journal of the Intensive Care Society*, *20*(3), 255–257. https://doi.org/10.1177/1751143718774715

Thomas, S., Alexander, C., & Cassady, B. A. (2021). Nutrition risk prevalence and nutrition care recommendations for hospitalized and critically-ill patients with COVID-19. *Clinical Nutrition ESPEN*, *44*, 38–49. https://doi.org/10.1016/j.clnesp.2021.06.002

Trapl, M., Enderle, P., Nowotny, M., Teuschl, Y., Matz, K., Dachenhausen, A., & Brainin, M. (2007). Dysphagia bedside screening for acute-stroke patients: The gugging swallowing screen. *Stroke*, *38*(11), 2948–2952. https://doi.org/10.1161/STROKEAHA.107.483933/FORMAT/EPUB

Tulunay-Ugur, O. E., & Eibling, D. (2018). Geriatric Dysphagia. *Clinics in Geriatric Medicine*, *34*(2), 183–189. https://doi.org/10.1016/j.cger.2018.01.007

Twose, P., Terblanche, E., Jones, U., Bruce, J., Firshman, P., Highfield, J., Jones, G., Merriweather, J., Newey, V., Newman, H., Rock, C., & Wallace, S. (2022). Therapy professionals in critical care: A UK wide workforce survey. *Journal of the Intensive Care Society*, *May*. https://doi.org/10.1177/17511437221100332

van Snippenburg, W., Kröner, A., Flim, M., Hofhuis, J., Buise, M., Hemler, R., & Spronk, P. (2019). Awareness and Management of Dysphagia in Dutch Intensive Care Units: A Nationwide Survey. *Dysphagia*, *34*(2), 220–228. https://doi.org/10.1007/s00455-018-9930-7

Vose, A. K., Kesneck, S., Sunday, K., Plowman, E., & Humbert, I. (2018). A survey of clinician decision making when identifying swallowing impairments and determining treatment. *Journal of Speech, Language, and Hearing Research*, *61*(11), 2735–2756. https://doi.org/10.1044/2018_JSLHR-S-17-0212

Wadvalla, B. A. (2020). How Africa has tackled covid-19. *The BMJ*, *370*, 1–3. https://doi.org/10.1136/bmj.m2830

Wang, Y. Y., Wan, Q. Q., Lin, F., Zhou, W. J., & Shang, S. M. (2018). Interventions to improve communication between nurses and physicians in the intensive care unit: An integrative literature review. *International Journal of Nursing Sciences*, *5*(1), 81–88. https://doi.org/10.1016/j.ijnss.2017.09.007

Ward-Wiley, A. B., & Hornor, G. (2022). Discharge Planning. *IAFN Sexual Assault Nurse Examiner Certification: A Review for the SANE-A® and SANE-P® Exams*, 261–271. https://doi.org/10.1891/9780826135339.0011

Wise, R., de Vasconcellos, K., Skinner, D., Rodseth, R., Gopalan, D., Muckart, D., Banoo, Z., Bisseru, T., Blakemore, S., de Meyer, J., Faurie, M., Govender, K., Hardcastle, T., Jeena, P., Kalafatis, N., Kistan, K., Kisten, T., Lee, C., Mitchell, C., … Biccard, B. (2017). Outcomes 30 days after ICU admission: The 30DOS study. *Southern African Journal of Anaesthesia and Analgesia*, *23*(6), 6–11. https://doi.org/10.1080/22201181.2017.1402553

WMA. (2013). World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects. *The Journal of the American Medical Association*, *310*(20), 2191–2194. https://doi.org/10.1093/acprof:oso/9780199241323.003.0025

Yanto, E. S., Glorino, M., & Pandin, R. (2023). The Position of Insider (Emic) and Outsider (Etic): A Review of Deborah Court and Randa Khair Abbas' Insider-Outsider Research in Qualitative Inquiry: New Perspectives on Method and Meaning. *The Qualitative Report*, *28*(2), 437–447. https://doi.org/10.46743/2160-3715/2023.6190

Zuercher, P., Moret, C. S., Dziewas, R., & Schefold, J. C. (2019). Dysphagia in the intensive care unit: Epidemiology, mechanisms, and clinical management. *Critical Care*, *23*(1), 1–11. https://doi.org/10.1186/s13054-019-2400-2

Appendices

Appendix A

Ethical Permission to conduct the study

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research and Innovation)

TO: Ms K Eckmann
School of Human and Community Development
Department of Speech Therapy and Audiology
University

E-mail: kirsten.eckmann@gmail.com

CC: Supervisor: Dr K Coutts and J Seedat
<Kim.Coutts@wits.ac.za>
and <HREC-Medical Research Office@wits.ac.za>

FROM: Mr Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 2022/05/12

REF: R14/49

PROTOCOL NO: **M220126** (This is your ethics application reference number. Please quote it in all enquiries, oral or written, relating to this study.)

PROJECT TITLE: *A description of feeding practices with critically-ill patients in the South African adult intensive care unit in public healthcare*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R49 Ms K Eckmann

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M220126

NAME: (Principal Investigator)	Ms K Eckmann
DEPARTMENT:	School of Human and Community Development Department of Speech Therapy and Audiology University
PROJECT TITLE:	*A description of feeding practices with critically-ill patients in the South African adult intensive care unit in public healthcare*
DATE CONSIDERED:	2022/01/28
DECISION:	Approved unconditionally
CONDITIONS:	This Clearance Certificate covers Helen Joseph and Charlotte Maxeke Johanneburg Academic Hospitals only Steve Biko Academic Hospital falls under the jurisdiction of the University of Pretoria
NOTE:	If contact information regarding student study participants is required, please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>
SUPERVISOR:	Dr K Coutts and J Seedat
APPROVED BY:	CB Penny Dr CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	2022/05/12

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report**. When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **January** and therefore reports and re-certification will be due in the month of **January** each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator _____ Date _____

Appendix B

Study Permission Letter from the CMJAH ethics committee

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL
UNIVERSITY OF THE WITWATERSRAND
Cluster Research Committee
7 Jubilee Rd, Parktown 2196, Johannesburg
Enquiries: Office of the CEO
Ms. T. Ndlovu; Tell: 011 488 4211 Fax 011 488 3753
Email:

HOSPITAL PERMISSION TO CONDUCT RESEARCH - CMJAH CLUSTER RESEARCH COMMITTEE

DATE RECEIVED: 12/1/2021 2:00:27 PM

Application letter from the researcher Y/N: Yes

Degree Related Research Y/N: Yes **Which Degree: MA (Speech Therapy)**

Undergraduate or Postgraduate coommittee approval Y/N: N/A

Non-degree purpose research Y/N: **Specify:**

HREC Approval Y/N: Yes **Not Applied For:** **HREC Number: R14/49**

NHRD Registration Y/N: Registered **NHRD Number**: -GP_202111_064

Clinical Trial: No **Trial Registry Number: N/A**

Title of Research Project : A Description of Feeding Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Name of Principal Investigator: Miss Kirsten Eckmann

Name of Supervisor/Co-investigator: Dr Kim Coutts

CHECKLIST

- Is the study methods clear and the rationale for the study well motivated?
- Is the research cost to the hospital reasonable and justifiable?
- Does the research need support from other staff and allied staff?
- Are the study coordinators, research and registered nurses explicitly stated?
- LETTER OF PERMISSION FROM HODS TO CONDUCT RESEARCH
- Postgrad Assessor Group Approval (if for degree purposes)
- Data collection sheet reasonable
- Consent form and information sheet satisfactory
- HARDCOPY OF PROTOCOL AND ALL RELEVANT DOCUMENTS

DECISION : Approved

OTHER COMMENTS:

NAME OF ASSESSOR: Dr Langanani Mbodi

SIGNATURE:

DATE SIGNED OUT: 09 / 06 / 2022

Appendix C

Study Permission Letter from the HJH ethics committee

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Gauteng Department of Health
Helen Joseph Hospital
Enquiries: Dr. M. Mukansi
Research Committee: Chairperson
Tel :(011) 489-0306/1087
Fax :(011) 489 1038
E mail:Murimisi.mukansi@wits.ac.za

2 March 2022

To whom it may concern

Subject: HELEN JOSEPH HOSPITAL RESEARCH COMMITTEE APPLICATION

PROTOCOL TITLE: A description of feeding practices with critically Ill patients in the South African Adult Intensive Care unit (ICU) in public Healthcare.

Principal Investigator: Kirsten Eckmann

Ethics Clearance: Pending

Co- investigator: Kirsten Eckmann

Department: Helen Joseph Hospital

Committee Recommendations
The Committee is giving you Conditional access while awaiting the final ethical clearance certificate from the University of Witwatersrand.

It is the duty of the researcher to collect the data to the relevant department after the Research Committee approved the study.

Dr. M. Mukansi
Chairperson of HJH Ethic and Research Committee

Appendix D

Study Permission Letter from the head of ICU at CMJAH

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Date: 26 · 04 · 2022

STUDY PERMISSION SHEET

Study title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Dear Prof Mer,

My name is Kirsten Eckmann, I am a postgraduate student in the Department of Speech Pathology & Audiology at The University of the Witwatersrand. In order to complete the requirements for a Master's degree in speech therapy, I am required to conduct a research study. My study will focus on the clinical decision making process regarding feeding critically ill patients, and I would like to invite your staff to participate in the project. There is no payment nor cost associated with participation. Please see the attached study information sheet as well as a consent sheet for site observations, to be signed by the head of the unit (yourself).

Your permission is needed in order to obtain ethical clearance to conduct the study and I am hereby asking for permission for the study to be conducted in your unit, namely the medical ICU at Charlotte Maxeke Johannesburg Academic Hospital. Please sign this letter as recognition of the study and permission for the site observations and focus groups to take place, at a time that will accommodate you and your staff.

Please note: All write up and publication (if any) will acknowledge the unit and contributions made by yourself and any other staff members.

Kindest regards,

Kirsten Eckmann
MA (Speech Therapy) Student

Dr Kim Coutts
Main Supervisor

I, M · Mer hereby grant permission for the above mentioned study.

Date: 26/4/22

Place: Johannesburg

Signature:

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT SHEET: Site Observation

Research Title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Please tick the boxes:

- ☑ I have been given a Study Information Sheet which explains the nature and processes involved in this study, which is attached hereto;
- ☑ I was given time to read it, or had it read to me, in the language I best understand;
- ☑ I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
- ☑ I believe I fully understand why the study is being conducted and what the intended outcomes will be;
- ☑ I understand that there will be no immediate benefit to me, should I agree to the site observations, nor will I receive any payment; conversely, the site observations will not cost me anything;
- ☑ I understand that, even if I initially consent to the site observations, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about the site for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
- ☑ I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.
- ☑ I understand that the researcher will not be analysing the actions of the staff working in the ICU during observations, but rather only describing what goes on in the ICU and how decisions are made.
- ☑ I hereby give consent to the site observations as explained in the information sheet, to take place at a time that will be arranged with the principal investigator.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Name: M. MEIR

Date: 26/4/22

Place: Johannesburg

Signature:

Witness name: ADRIANA DE NECKER

Signature:

Date: 26/04/2022

Appendix E

Study Permission Letter from the head of ICU at HJH

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Date: 28·09 2022

STUDY PERMISSION SHEET

Study title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Dear Dr Mukansi,

My name is Kirsten Eckmann, I am a postgraduate student in the Department of Speech Pathology & Audiology at The University of the Witwatersrand. In order to complete the requirements for a Master's degree in speech therapy, I am required to conduct a research study. My study will focus on the clinical decision making process regarding feeding critically ill patients, and I would like to invite your staff to participate in the project. There is no payment nor cost associated with participation. Please see the attached study information sheet as well as a consent sheet for site observations, to be signed by the head of the unit (yourself).

Your permission is needed in order to obtain ethical clearance to conduct the study and I am hereby asking for permission for the study to be conducted in your unit, namely the medical ICU at Helen Joseph Hospital. Please sign this letter as recognition of the study and permission for the site observations and focus groups to take place, at a time that will accommodate you and your staff.

Please note: All write up and publication (if any) will acknowledge the unit and contributions made by yourself and any other staff members.

Kindest regards,

Kirsten Eckmann

MA (Speech Therapy) Student

Dr Kim Coutts

Main Supervisor

I, Dr M Mukansi hereby grant permission for the above mentioned study.

Date: 28 Sept 2022

Place: Helen Joseph (Auckland Park)

Signature:

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT SHEET: Site Observation

Research Title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Please tick the boxes:

- ✓ I have been given a Study Information Sheet which explains the nature and processes involved in this study, which is attached hereto;
- ✓ I was given time to read it, or had it read to me, in the language I best understand;
- ✓ I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
- ✓ I believe I fully understand why the study is being conducted and what the intended outcomes will be;
- ✓ I understand that there will be no immediate benefit to me, should I agree to the site observations, nor will I receive any payment; conversely, the site observations will not cost me anything;
- ✓ I understand that, even if I initially consent to the site observations, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about the site for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
- ✓ I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.
- ✓ I understand that the researcher will not be analysing the actions of the staff working in the ICU during observations, but rather only describing what goes on in the ICU and how decisions are made.
- ✓ I hereby give consent to the site observations as explained in the information sheet, to take place at a time that will be arranged with the principal investigator.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Name: Dr M Mukonzi

Date: 28 Sept 2022

Place: Helen Joseph (Ardmore Unit)

Signature:

Witness name: DR. B.K.B. MOKONE

Signature:

Date: 28/09/2022

Appendix F

Study Information Letter

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

STUDY INFORMATION SHEET

Study title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Dear ,

My name is Kirsten Eckmann, I am a postgraduate student at the Department of Speech and Hearing Therapy at The University of the Witwatersrand. In order to complete the requirements for a Master's degree in speech therapy, I am required to conduct a research study.

I would like to invite your staff to participate in the research study. There is no payment or cost associated with participation.

I, Kirsten Eckmann, aim to do research on the feeding practices in the ICU. Feeding critically ill patients in the ICU is a complex process which requires a high level of clinical decision-making, taking into consideration multiple factors and all possible outcomes. Research is a process used in seeking new knowledge. In this study I would like to describe the current decision-making process when it comes to feeding practices of the MDT in the ICU in SA within the public healthcare sector. Understanding how these decision are currently being made could be beneficial for future research topics on the role of the Speech Therapist in the ICU, it could also be beneficial in the understanding of how contextual factors can impact on clinical decision making within the public healthcare sector. Finally, this research could aid in the development of a decision-making flowchart for feeding critically ill patients which could benefit overall patient care. In order to obtain this information, the researcher will conduct observations in the ICU and hold focus group discussions with a few members of the staff to discuss the topic in more detail.

Clinical Decision-Making (CDM) is understood as the thought process happening in the minds of clinicians as they integrate and take into account the contextual, theoretical, personal, and medical factors of their patients, and then come to logical decisions regarding diagnosis and treatment. In any ICU or high care facility there is a lot weighing on the decisions made by the professionals who work in these environments, for example if a patient is put on oral feeds with an undiagnosed or unidentified dysphagia, this can have devastating effects for the patient, they can end up with an aspiration pneumonia, which can lead to an increased length of stay, malnutrition, intubation, tracheostomy, additional medical costs, and an increased chance of patient morbidity. In the public healthcare sector in SA, we have to consider not only the contextual factors playing a role in the CDM process in the ICU, but also consider the emotional impact on the CDM process, and the pressures of understanding the weight that each decision may bear Additionally, CDM in dysphagia management has become a new area of interest in recent years. However, there is limited research on the topic of how clinical decisions are made with regards to dysphagia in the complex SA context, which is why this study is being undertaken.

How the data will be obtained:

- A site observation of the adult medical ICU. Which will be done in order to obtain a robust description of the unit. The researcher will in no way be evaluating the sites or participants during the observations. The researcher will also not obtain any identifying information during the observation, the participants and sites will remain anonymous. However, the researcher does need access to the medical information of the patients at each site in order to give an accurate description of each ICU.

- A focus group discussion, with 5-6 participants working in the ICU of approximately 30 minutes. The focus group will be audio and video recorded, as this will allow the researcher to pay full attention to the participants during the interview rather than focusing on note taking. Video recordings will also facilitate the data analysis. During the discussions the researcher will aim to discuss the topic of dysphagia in critically ill patients and seek out information from the participants on their personal experiences when treating these kinds of patients. The focus group participants should be considered active participants.
- Where focus group discussions are not possible, individual interviews will be conducted with 5-6 participants working in the ICU of approximately 20 minutes per interview. The individual interviews will be audio recorded.

Please note: The focus group discussions will take place at a time that is convenient for all participants and will not interfere with their clinical work, therefore, it is intended for the interviews to take place during lunch time.

Strict COVID-19 guidelines will be adhered to when conducting the interviews. The focus groups will be scheduled with the participants at a time that is suitable and will not affect the normal activities of the work day.

Risks of being involved in the study:
There is a risk to anonymity for the focus group participants only, as participants may recognise each other during the focus group discussions, however, the focus group consent form includes a non-disclosure agreement stating that participants should respect the privacy of their fellow participants.

Benefits of being in the study:
The focus group discussion may create opportunities for the participants to discuss and reflect on their experiences with feeding the critically ill patient and allow skill sharing opportunities. The discussion may be potentially transformative as participants may become aware of certain factors and potentially grow and improve their knowledge from having heard, reflected on and analysed their experiences. Participants who agree to take part in the study will be provided with lunch during the course of the focus group discussion.

Voluntary participation:

Participation in the proposed study is voluntary and consent will be required from each active participant of the study. An information sheet containing all the relevant information of the study will be emailed or hand delivered to the participants as well as a consent form which will need to be signed by each focus group participant that will take part in the study. Each potential participant has the right to refuse to participate in the study and to withdraw at any point without penalty, loss of benefits to which the participant is otherwise entitled and without explanation.

The data collected on such a person will in default be destroyed unless the participant specifically consents to its retention.

Confidentiality and anonymity:

Confidentiality and anonymity of the participants will be ensured throughout the report writing and a coding system will be used to identify the relevant speakers, when analysing the data.

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SPEECH PATHOLOGY AND AUDIOLOGY

Due to the nature of the focus group discussions, the participants may recognise each other and anonymity can therefore not be guaranteed amongst the participants involved in the focus group discussions, however, the focus group consent form includes a non-disclosure agreement stating that participants agree to respect the privacy of their fellow participants.

Any personal information will be treated in the strictest confidence and will only be available to me, the Principal Investigator (PI) and to my supervisors. The only exceptions - and all of them are rare - would normally be:

- Personal information may be disclosed if required by law.
- The Human Research Ethics Committees of the University may exceptionally require personal data to respond to a formal complaint, or for a compliance audit.

The researcher will maintain the regulations set out by the Protection of Personal Information Act (POPIA) and ensure all personal information be treated with the utmost respect. Where and when personal information may be required, the researcher will state explicitly the reason for obtaining such information and take every measure necessary to ensure that information is used only for the purposes laid out. The confidentiality and anonymity of participants will also be respected in the write up of the report by ensuring that pseudonyms and codes are used in place of identifying information.

If results are published, this may, exceptionally, lead to cohort, or more rarely, individual identification. All data collected in the course of the study will be securely retained for two (2) years, if a scientific publication arises from the study and six (6) years, if there is no publication. Thereafter it will be destroyed accordingly.

Outputs:

Once the observations and interviews have been concluded, the researcher will use a top down thematic analysis in order to develop an idea of the overarching themes which emerge on the topic of the decision-making process when feeding the critically ill patient. It is the goal of the researcher to obtain a comprehensive understanding of the factors that are used by the MDT when deciding how and when to feed the critically ill patient. Through this understanding, the researcher will hopefully be able to provide insight into contextual as well as clinical factors which impact this decision-making process and create opportunities for further investigation on the topic of feeding the critically ill patient. The data from the study will be stored with the researcher and it will be used for a scientific article and the dissertation for my Master's degree. The article and dissertation will be made available upon request to the participants of the study as well as other healthcare professionals and may be used for other research studies.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

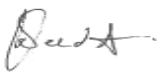
Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Thank you for reading this study information sheet!







Kirsten Eckmann	Dr Kim Coutts	Dr Jaishika Seedat
MA (Speech Therapy) student	*Supervisor*	*Supervisor*

Appendix G

Study Information Letter

(Put up in the ICU for those being observed)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

STUDY INFORMATION SHEET

Study title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Dear Potential Participant,

My name is Kirsten Eckmann, I am a postgraduate student at the Department of Speech and Hearing Therapy at The University of the Witwatersrand. In order to complete the requirements for a Master's degree in speech therapy, I am required to conduct a research study.

I would like to invite you to participate in the research study. There is no payment or cost associated with participation.

I, Kirsten Eckmann, aim to do research on the feeding practices in the ICU. Feeding critically ill patients in the ICU is a complex process which requires a high level of clinical decision-making, taking into consideration multiple factors and all possible outcomes. Research is a process used in seeking new knowledge. In this study I would like to describe the current decision-making process when it comes to feeding practices of the MDT in the ICU in SA within the public healthcare sector. Understanding how these decision are currently being made could be beneficial for future research topics on the role of the Speech Therapist in the ICU, it could also be beneficial in the understanding of how contextual factors can impact on clinical decision making within the public healthcare sector. Finally, this research could aid in the development of a decision-making flowchart for feeding critically ill patients which could benefit overall patient care. In order to obtain this information, the researcher will conduct observations in the ICU and hold focus group discussions with a few members of the staff to discuss the topic in more detail.

Clinical Decision-Making (CDM) is understood as the thought process happening in the minds of clinicians as they integrate and take into account the contextual, theoretical, personal, and medical factors of their patients, and then come to logical decisions regarding diagnosis and treatment. In any ICU or high care facility there is a lot weighing on the decisions made by the professionals who work in these environments, for example if a patient is put on oral feeds with an undiagnosed or unidentified dysphagia, this can have devastating effects for the patient, they can end up with an aspiration pneumonia, which can lead to an increased length of stay, malnutrition, intubation, tracheostomy, additional medical costs, and an increased chance of patient morbidity. In the public healthcare sector in SA, we have to consider not only the contextual factors playing a role in the CDM process in the ICU, but also consider the emotional impact on the CDM process, and the pressures of understanding the weight that each decision may bear Additionally, CDM in dysphagia management has become a new area of interest in recent years. However, there is limited research on the topic of how clinical decisions are made with regards to dysphagia in the complex SA context, which is why this study is being undertaken.

How the data will be obtained:

- A site observation of the adult medical ICU. Which will be done in order to obtain a robust description of the unit. The researcher will in no way be evaluating the sites or participants during the observations. The researcher will also not obtain any identifying information during the observation, the participants and sites will remain anonymous.

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SPEECH PATHOLOGY AND AUDIOLOGY

- However, the researcher does need access to the medical information of the patients at each site in order to give an accurate description of each ICU.
- A focus group discussion, with 5-6 participants working in the ICU of approximately 30 minutes. The focus group will be audio and video recorded. As this will allow the researcher to pay full attention to the participants during the interview rather than focusing on note taking. Video recordings will also facilitate the data analysis. During the discussions the researcher will aim to discuss the topic of dysphagia in critically ill patients and seek out information from the participants on their personal experiences when treating these kinds of patients. The participants of the focus groups will be considered active participants in the study.
- Where focus group discussions are not possible, individual interviews will be conducted with 5-6 participants working in the ICU of approximately 20 minutes per interview. The individual interviews will be audio recorded.

Please note: The focus group discussions will take place at a time that is convenient for all participants and will not interfere with their clinical work, therefore, it is intended for the interviews to take place during lunch time.

Strict COVID-19 guidelines will be adhered to when conducting the interviews. The focus groups will be scheduled with the participants at a time that is suitable and will not affect the normal activities of the work day.

Risks of being involved in the study:
There is a risk to anonymity for focus group participants only, as participants may recognise each other during the focus group discussions. However, the focus group consent form includes a non-disclosure agreement stating that participants should respect the privacy of their fellow participants.

Benefits of being in the study:
The focus group discussion may create opportunities for the participants to discuss and reflect on their experiences with feeding the critically ill patient and allow skill sharing opportunities. The discussion may be potentially transformative as participants may become aware of certain factors and potentially grow and improve their knowledge from having heard, reflected on and analysed their experiences. Participants who agree to take part in the study will be provided with lunch during the course of the focus group discussion.

Voluntary participation:

Participation in the proposed study is voluntary and consent will be required from each active participant of the study. An information sheet containing all the relevant information of the study will be put up in the ICU. Each potential participant has the right to refuse to participate in the study and to withdraw at any point without penalty, loss of benefits to which the participant is otherwise entitled and without explanation. The data collected on such a person will in default be destroyed unless the participant specifically consents to its retention.

Confidentiality and anonymity:

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SPEECH PATHOLOGY AND AUDIOLOGY

Confidentiality and anonymity of the participants will be ensured throughout the report writing and a coding system will be used to identify the relevant speakers, when analysing the data.

Due to the nature of the focus group discussions, the participants may recognise each other and anonymity can therefore not be guaranteed amongst the participants involved in the focus group discussions, however, the focus group consent form includes a non-disclosure agreement stating that participants agree to respect the privacy of their fellow participants.

Any personal information will be treated in the strictest confidence and will only be available to me, the Principal Investigator (PI) and to my supervisors. The only exceptions - and all of them are rare - would normally be:

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If results are published, this may, exceptionally, lead to cohort, or more rarely, individual identification. All data collected in the course of the study will be securely retained for two (2) years, if a scientific publication arises from the study and six (6) years, if there is no publication. Thereafter it will be destroyed accordingly.

Outputs:

Once the observations and interviews have been concluded, the researcher will use a top down thematic analysis in order to develop an idea of the overarching themes which emerge on the topic of the decision-making process when feeding the critically ill patient. It is the goal of the researcher to obtain a comprehensive understanding of the factors that are used by the MDT when deciding how and when to feed the critically ill patient. Through this understanding, the researcher will hopefully be able to provide insight into contextual as well as clinical factors which impact this decision-making process and create opportunities for further investigation on the topic of feeding the critically ill patient. The data from the study will be stored with the researcher and it will be used for a scientific article and the dissertation for my Master's degree. The article and dissertation will be made available upon request to the participants of the study as well as other healthcare professionals and may be used for other research studies.

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numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

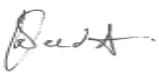
Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Thank you for reading this study information sheet!







Kirsten Eckmann	Dr Kim Coutts	Dr Jaishika Seedat
MA (Speech Therapy) student	*Supervisor*	*Supervisor*

Appendix H

Study Information Letter

(Given to the patients and their family members)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

STUDY INFORMATION SHEET

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How the data will be obtained:

- A site observation of the adult medical ICU. Which will be done in order to obtain a robust description of the unit. The researcher will in no way be evaluating the sites or participants during the observations. The researcher will also not obtain any identifying information during the observation, the participants and sites will remain anonymous.

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However, the researcher does need access to the medical information of the patients at each site in order to give an accurate description of each ICU.

- A focus group discussion, with 5-6 participants working in the ICU of approximately 30 minutes. The focus group will be audio and video recorded. As this will allow the researcher to pay full attention to the participants during the interview rather than focusing on note taking. Video recordings will also facilitate the data analysis. During the discussions the researcher will aim to discuss the topic of dysphagia in critically ill patients and seek out information from the participants on their personal experiences when treating these kinds of patients. The participants of the focus groups will be considered active participants in the study.
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Please note: The focus group discussions will take place at a time that is convenient for all participants and will not interfere with their clinical work, therefore, it is intended for the interviews to take place during lunch time.

Strict COVID-19 guidelines will be adhered to when conducting the interviews. The focus groups will be scheduled with the participants at a time that is suitable and will not affect the normal activities of the work day.

Risks of being involved in the study:
There is no risk to the patients involved in this study. However, there is a risk to anonymity for focus group participants only, as participants may recognise each other during the focus group discussions. However, the focus group consent form includes a non-disclosure agreement stating that participants should respect the privacy of their fellow participants.

Benefits of being in the study:
The outcomes of this study may lead to further research on the topic of dysphagia in the ICU and in turn their may be new tools developed on screening, diagnosis and treating dysphagia in the ICU. However, there will be no direct benefit to the individual patients who choose to be involved in this study.

Voluntary participation:

Participation in the proposed study is voluntary and consent will be required from each participant of the study. An information sheet containing all the relevant information of the study will be put up in the ICU. Each potential participant has the right to refuse to participate in the study and to withdraw at any point without penalty, loss of benefits to which the participant is otherwise entitled and without explanation. The data collected on such a person will in default be destroyed unless the participant specifically consents to its retention.

Confidentiality and anonymity:

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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

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Outputs:

Once the observations and interviews have been concluded, the researcher will use a top down thematic analysis in order to develop an idea of the overarching themes which emerge on the topic of the decision-making process when feeding the critically ill patient. It is the goal of the researcher to obtain a comprehensive understanding of the factors that are used by the MDT when deciding how and when to feed the critically ill patient. Through this understanding, the researcher will hopefully be able to provide insight into contextual as well as clinical factors which impact this decision-making process and create opportunities for further investigation on the topic of feeding the critically ill patient. The data from the study will be stored with the researcher and it will be used for a scientific article and the dissertation for my Master's degree. The article and dissertation will be made available upon request to the participants of the study as well as other healthcare professionals and may be used for other research studies.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

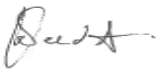
Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Thank you for reading this study information sheet!







Kirsten Eckmann	Dr Kim Coutts	Dr Jaishika Seedat
MA (Speech Therapy) student	*Supervisor*	*Supervisor*

Appendix I

Study Information Letter

(Given to each focus group participant)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

STUDY INFORMATION SHEET

Study title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Dear Potential Participant,

My name is Kirsten Eckmann, I am a postgraduate student at the Department of Speech and Hearing Therapy at The University of the Witwatersrand. In order to complete the requirements for a Master's degree in speech therapy, I am required to conduct a research study.

I would like to invite you to participate in the research study. There is no payment or cost associated with participation.

I, Kirsten Eckmann, aim to do research on the feeding practices in the ICU. Feeding critically ill patients in the ICU is a complex process which requires a high level of clinical decision-making, taking into consideration multiple factors and all possible outcomes. Research is a process used in seeking new knowledge. In this study I would like to describe the current decision-making process when it comes to feeding practices of the MDT in the ICU in SA within the public healthcare sector. Understanding how these decision are currently being made could be beneficial for future research topics on the role of the Speech Therapist in the ICU, it could also be beneficial in the understanding of how contextual factors can impact on clinical decision making within the public healthcare sector. Finally, this research could aid in the development of a decision-making flowchart for feeding critically ill patients which could benefit overall patient care. In order to obtain this information, the researcher will conduct observations in the ICU and hold focus group discussions with a few members of the staff to discuss the topic in more detail.

Clinical Decision-Making (CDM) is understood as the thought process happening in the minds of clinicians as they integrate and take into account the contextual, theoretical, personal, and medical factors of their patients, and then come to logical decisions regarding diagnosis and treatment. In any ICU or high care facility there is a lot weighing on the decisions made by the professionals who work in these environments, for example if a patient is put on oral feeds with an undiagnosed or unidentified dysphagia, this can have devastating effects for the patient, they can end up with an aspiration pneumonia, which can lead to an increased length of stay, malnutrition, intubation, tracheostomy, additional medical costs, and an increased chance of patient morbidity. In the public healthcare sector in SA, we have to consider not only the contextual factors playing a role in the CDM process in the ICU, but also consider the emotional impact on the CDM process, and the pressures of understanding the weight that each decision may bear. Additionally, CDM in dysphagia management has become a new area of interest in recent years. However, there is limited research on the topic of how clinical decisions are made with regards to dysphagia in the complex SA context, which is why this study is being undertaken.

How the data will be obtained:

- A site observation of the adult medical ICU. Which will be done in order to obtain a robust description of the unit. The researcher will in no way be evaluating the sites or participants during the observations. The researcher will also not obtain any identifying

information during the observation, the participants and sites will remain anonymous. However, the researcher does need access to the medical information of the patients at each site in order to give an accurate description of each ICU.

- A focus group discussion, with 5-6 participants working in the ICU of approximately 30 minutes. The focus group will be audio and video recorded. As this will allow the researcher to pay full attention to the participants during the interview rather than focusing on note taking. Video recordings will also facilitate the data analysis. During the discussions the researcher will aim to discuss the topic of dysphagia in critically ill patients and seek out information from the participants on their personal experiences when treating these kinds of patients.
- Where focus group discussions are not possible, individual interviews will be conducted with 5-6 participants working in the ICU of approximately 20 minutes per interview. The individual interviews will be audio recorded.

Please note: The focus group discussions will take place at a time that is convenient for all participants and will not interfere with their clinical work, therefore, it is intended for the interviews to take place during lunch time.

Strict COVID-19 guidelines will be adhered to when conducting the interviews. The focus groups will be scheduled with the participants at a time that is suitable and will not affect the normal activities of the work day.

Risks of being involved in the study:
There is a risk to anonymity as participants may recognise each other during the focus group discussions, however, the focus group consent form includes a non-disclosure agreement stating that participants should respect the privacy of their fellow participants.

Benefits of being in the study:
The focus group discussion may create opportunities for the participants to discuss and reflect on their experiences with feeding the critically ill patient and allow skill sharing opportunities. The discussion may be potentially transformative as participants may become aware of certain factors and potentially grow and improve their knowledge from having heard, reflected on and analysed their experiences. Participants who agree to take part in the study will be provided with lunch during the course of the focus group discussion.

Voluntary participation:

Participation in the proposed study is voluntary and consent will be required from each active participant of the study. An information sheet containing all the relevant information of the study will be emailed or hand delivered to the focus group participants as well as a consent form which will need to be signed by each participant that will take part in the focus groups. Each potential participant has the right to refuse to participate in the study and to withdraw at any point without penalty, loss of benefits to which the participant is otherwise entitled and without explanation. The data collected on such a person will in default be destroyed unless the participant specifically consents to its retention.

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SPEECH PATHOLOGY AND AUDIOLOGY

Confidentiality and anonymity:

Confidentiality and anonymity of the participants will be ensured throughout the report writing and a coding system will be used to identify the relevant speakers, when analysing the data.

Due to the nature of the focus group discussions, the participants may recognise each other and anonymity can therefore not be guaranteed amongst the participants involved in the focus group discussions, however, the focus group consent form includes a non-disclosure agreement stating that participants agree to respect the privacy of their fellow participants.

Any personal information will be treated in the strictest confidence and will only be available to me, the Principal Investigator (PI) and to my supervisors. The only exceptions - and all of them are rare - would normally be:

- Personal information may be disclosed if required by law.
- The Human Research Ethics Committees of the University may exceptionally require personal data to respond to a formal complaint, or for a compliance audit.

The researcher will maintain the regulations set out by the Protection of Personal Information Act (POPIA) and ensure all personal information be treated with the utmost respect. Where and when personal information may be required, the researcher will state explicitly the reason for obtaining such information and take every measure necessary to ensure that information is used only for the purposes laid out. The confidentiality and anonymity of participants will also be respected in the write up of the report by ensuring that pseudonyms and codes are used in place of identifying information.

If results are published, this may, exceptionally, lead to cohort, or more rarely, individual identification. All data collected in the course of the study will be securely retained for two (2) years, if a scientific publication arises from the study and six (6) years, if there is no publication. Thereafter it will be destroyed accordingly.

Outputs:

Once the observations and interviews have been concluded, the researcher will use a top down thematic analysis in order to develop an idea of the overarching themes which emerge on the topic of the decision-making process when feeding the critically ill patient. It is the goal of the researcher to obtain a comprehensive understanding of the factors that are used by the MDT when deciding how and when to feed the critically ill patient. Through this understanding, the researcher will hopefully be able to provide insight into contextual as well as clinical factors which impact this decision-making process and create opportunities for further investigation on the topic of feeding the critically ill patient. The data from the study will be stored with the researcher and it will be used for a scientific article and the dissertation for my Master's degree. The article and dissertation will be made available upon request to the participants of the study as well as other healthcare professionals and may be used for other research studies.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone

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SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
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numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

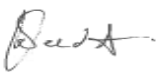
Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Thank you for reading this study information sheet!







Kirsten Eckmann	Dr Kim Coutts	Dr Jaishika Seedat
MA (Speech Therapy) student	*Supervisor*	*Supervisor*

Appendix J

Consent Sheet (Site Observation)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT SHEET: Site Observation

Research Title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Please tick the boxes:

- ☐ I have been given a Study Information Sheet which explains the nature and processes involved in this study, which is attached hereto;
- ☐ I was given time to read it, or had it read to me, in the language I best understand;
- ☐ I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
- ☐ I believe I fully understand why the study is being conducted and what the intended outcomes will be;
- ☐ I understand that there will be no immediate benefit to me, should I agree to the site observations, nor will I receive any payment; conversely, the site observations will not cost me anything;
- ☐ I understand that, even if I initially consent to the site observations, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about the site for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
- ☐ I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.
- ☐ I understand that the researcher will not be analysing the actions of the staff working in the ICU during observations, but rather only describing what goes on in the ICU and how decisions are made.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

Dr Jaishika Seedat (Supervisor)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Email: jaishika.seedat@wits.ac.za

Name: _____

Date: _____

Place: _____

Signature: _____

Witness name: _____

Signature: _____

Date: _____

Appendix K

Consent Sheet (Observation and Access to Medical Information)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT SHEET: Observation and Access to Medical Information

Research Title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Please tick the boxes:

- ☐ I have been given a Study Information Sheet which explains the nature and processes involved in this study, which is attached hereto;
- ☐ I was given time to read it, or had it read to me, in the language I best understand;
- ☐ I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
- ☐ I believe I fully understand why the study is being conducted and what the intended outcomes will be;
- ☐ I understand that there will be no immediate benefit to me, should I agree to the site observations, nor will I receive any payment; conversely, the site observations will not cost me anything;
- ☐ I understand that, even if I initially consent to the site observations, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about the site for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
- ☐ I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.
- ☐ I understand that the researcher will not obtain any identifying information but will only make use of my medical information such as my diagnosis, presence of a tracheostomy, etc.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

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Email: kim.coutts@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Name: _____

Relationship to Patient: _____

Date: _____

Place: _____

Signature: _____

Witness name: _____

Signature: _____

Date: _____

Appendix L

Participant Consent Sheet (Focus Group)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

PARTICIPANT CONSENT SHEET: Focus Group

Research Title: A Description of *Feeding* Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare

Please tick the boxes:

- ☐ I have been given a Participant Information Sheet which explains the nature and processes involved in this study, which is attached hereto;
- ☐ I was given time to read it, or had it read to me, in the language I best understand;
- ☐ I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory;
- ☐ I believe I fully understand why the study is being conducted and what the intended outcomes will be;
- ☐ I understand that there will be no immediate benefit to me, should I agree to participate, nor will I receive any payment; conversely, participation will not cost me anything but my time;
- ☐ I understand that, even if I initially consent to take part in the study, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about me for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained
- ☐ I will respect the privacy of my fellow participants and maintain the confidentiality of all the information that will be discussed by the participants as well as the interviewer during the focus group discussion.
- ☐ I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study I am free to speak to any of these contacts.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

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Email: Kirsten.eckmann@gmail.com

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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Participant name: _____

Profession: _____

Contact number: _____

Date: _____

Place: _____

Signature: _____

Witness name: _____

Signature: _____

Date: _____

Appendix M

Participant Consent Sheet (Audio Recording)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT FORM FOR AUDIO RECORDING OF STUDY PARTICIPATION (Focus Group)

Research Title: *A Description of Feeding Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare*

I hereby consent to audio recording of the focus group.

I understand that:

- The recording will be stored in a secure location (a locked cupboard or password protected computer) with restricted access to the researcher and the research supervisor.
- The recording will be transcribed and any information that could identify me will be removed,
- The recordings will be erased within either (a) two (2) years of the publication of the research findings, or (b) six (6) years, if no publications arise from this research
- Anyone wishing to access this information in the future will first have to obtain the approval of the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg
- Direct quotes from my interview, without any information that could identify me, may be cited in the research report or other write-ups of research.

Contact details of HREC administrator and chair – for reporting of complaints / problems:

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
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SPEECH PATHOLOGY AND AUDIOLOGY

Contact details:

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Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Participant name: _____

Date: _____

Place: _____

Signature: _____

Witness name: _____

Signature: _____

Date: _____

Appendix N

Participant Consent Sheet (Video Recording)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

CONSENT FORM FOR VIDEO RECORDING OF STUDY PARTICIPATION (Focus Group)

Research Title: *A Description of Feeding Practices with Critically Ill Patients in the South African Adult Intensive Care Unit (ICU) in Public Healthcare*

I hereby consent to video recording of the focus group.

I understand that:

- The recording will be stored in a secure location (a locked cupboard or password protected computer) with restricted access to the researcher and the research supervisor.
- The recording will be transcribed and any information that could identify me will be removed,
- The recordings will be erased within either (a) two (2) years of the publication of the research findings, or (b) six (6) years, if no publications arise from this research
- Anyone wishing to access this information in the future will first have to obtain the approval of the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg
- Direct quotes from my interview, without any information that could identify me, may be cited in the research report or other write-ups of research.

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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
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Contact details:

Kirsten Eckmann (Principal Investigator)

Cell: 082 728 5389

Email: Kirsten.eckmann@gmail.com

Dr Kim Coutts (Supervisor)

Email: kim.coutts@wits.ac.za

Dr Jaishika Seedat (Supervisor)

Email: jaishika.seedat@wits.ac.za

Participant name: _____

Date: _____

Place: _____

Signature: _____

Witness name: _____

Signature: _____

Date: _____

Appendix O

Observation Schedule

Observation Schedule

When observing the ICU, the researcher will take not of the following aspects:

- Describe the general environment in terms of available resources, the set-up of the ICU and the number of people in the ICU at the time including who these people are.
- Identify the kinds of patients in the ICU in terms of diagnosis, describing their level of alertness, mode of feeding and any other relevant observations such as mode of ventilation and presence of tracheostomy.
- Discuss the role of the people in the ICU and describe the activities that these individuals undertake as well as the interactions and communication they have.
- Describe the information seen on charts, in books, files and notes on the walls.
- Talk about the patients rooms, the equipment used, the settings of the oxygen, pumps, etc.
- Report on any impact on feeding noted due to COVID-19.
- Sketch the layout of the ICU.
- Draw the current organogram in the ICU.
- Patient to healthcare worker ratio.
- Report on information regarding feeding that is discussed during ward rounds.

Appendix P

Focus Group Questions

Demographic Questions:

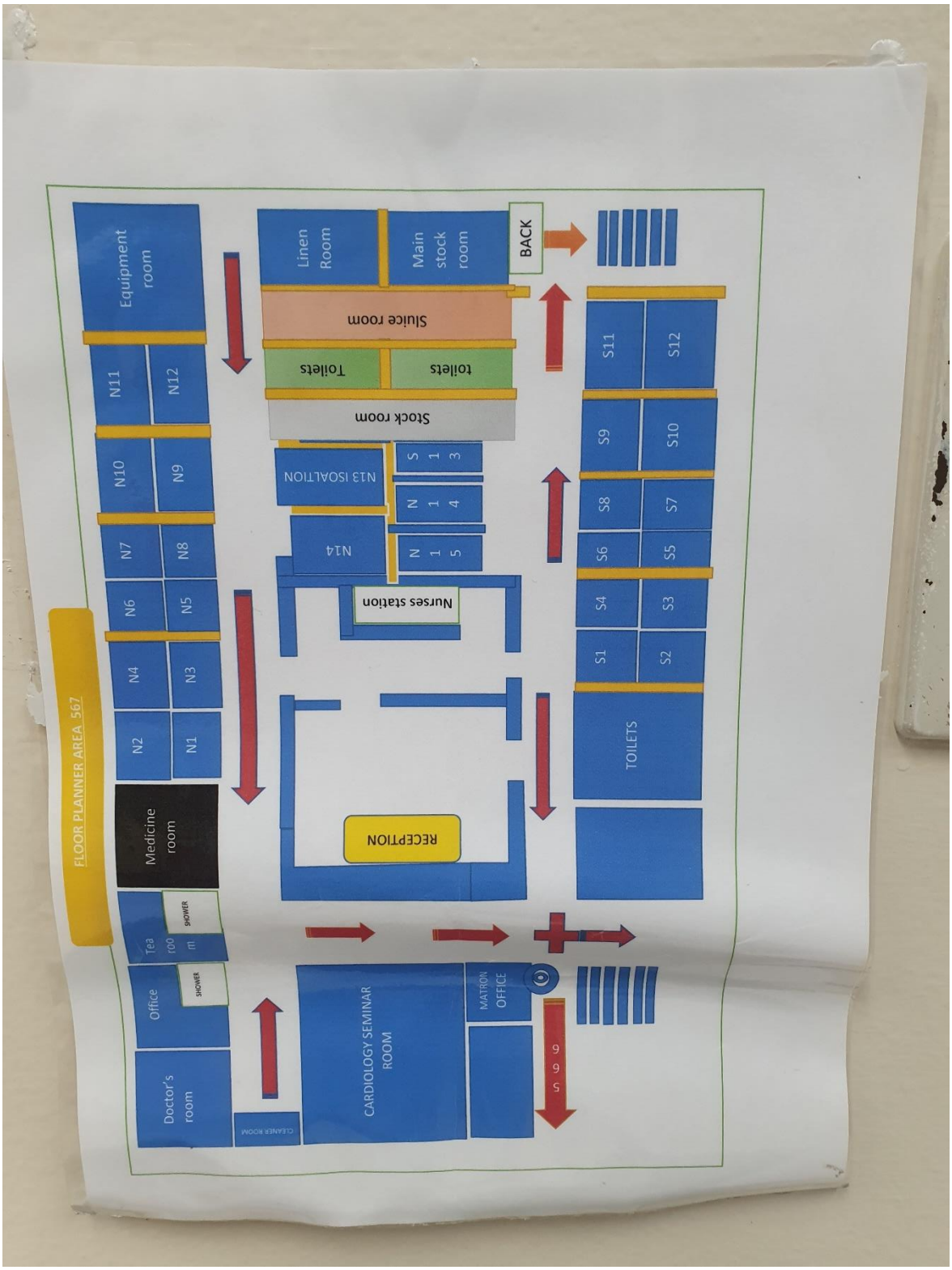
1. Age
2. Gender
3. Years of experience
4. Profession

Open-ended Questions:

1. Please describe your professional role and your role with regards to feeding the patients in the ICU?
2. Please tell me about your experiences with dysphagia in critically ill patients?
3. How do you decide on the mode of feeding? Explain the decision-making process.
4. Are there any protocols in place when deciding on the mode of feeding?
5. Tell me how you monitor if a patient is tolerating the selected mode of feeding.
6. Discuss the factors that impact on your decision-making process with regards to feeding critically ill patients.

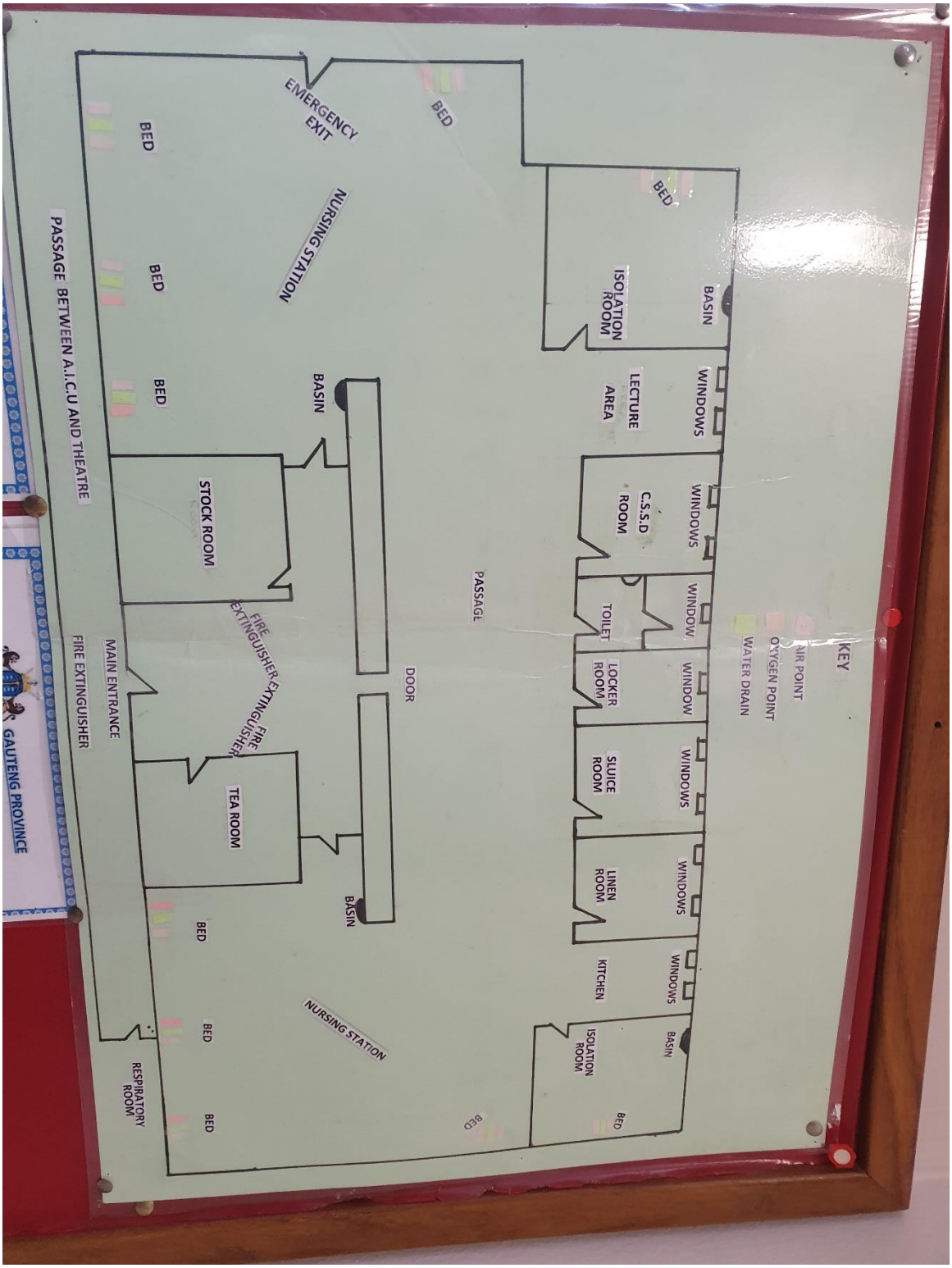
Appendix Q

CMJAH Layout


FLOOR PLANNER AREA 567
Equipment room
N11
N12
N10
N9
N7
N8
N6
N5
N4
N3
N2
N1
Medicine room
Tea room
SHOWER
Office
SHOWER
Doctor's room
CLEANER ROOM
CARDIOLOGY SEMINAR ROOM
MATRON OFFICE
RECEPTION
Nurses station
N14
N13 ISOALTION
S 1 3
N 1 4
N 1 5
Stock room
Toilets
toilets
Sluice room
Linen Room
Main stock room
BACK
S11
S12
S9
S10
S8
S7
S6
S5
S4
S3
S1
S2
TOILETS

Appendix R

HJH Layout


EMERGENCY EXIT
BED
NURSING STATION
PASSAGE BETWEEN A.I.C.U AND THEATRE
BASIN
ISOLATION ROOM
LECTURE AREA
WINDOWS
C.S.S.D ROOM
STOCK ROOM
PASSAGE
TOILET
LOCKER ROOM
SLUICE ROOM
LINEN ROOM
KITCHEN
DOOR
FIRE EXTINGUISHER
MAIN ENTRANCE
TEA ROOM
RESPIRATORY ROOM
GAUTENG PROVINCE
KEY
AIR POINT
OXYGEN POINT
WATER DRAIN

Appendix S

HJH Organogram


GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA
ICU ORGANOGRAM
ASSISTANT MANAGER
OPERATIONAL MANAGER
PN 1
PN 2
PRECEPTOR
PN 4
PN 5
PN 6
PN 7
PN 8
PN 9
PN 10
PN 11
PN 12
PN 13
PN 14
PN 15
PN 16
PN 17
PN 1
PN 2
PN 3
PN 4
PN 5
PN 6
PN 7
EN 8
PN 9
PN 10
PG 1
PG 2
PG 3
PG 4
EN 1
EN 2
EN 3
EN 4
EN 5
EN 7
EN 8
EN 9
ENA 1
PORTERS
WARD
GENERAL ASSISTANT
NURSES