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PHYSIOTHERAPISTS' EXPERIENCES OF INTERACTIONS WITH INTER-PROFESSIONAL TEAM MEMBERS IN THE ADULT INTENSIVE CARE UNIT (ICU) SETTING

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Masters of Science in Physiotherapy.

Johannesburg

July, 2017

DECLARATION

I, Mahitsonge Nomusa Ntinga, declare that this research report is my own work. It is being submitted for the degree of Masters of Science in Physiotherapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

Signature: _____

Date: 26/07/17

ABSTRACT

Introduction: Inter-professional team collaboration allows for enhanced patient safety, better use of resources by avoiding duplication of treatment, and improved standards of patient care as the time and skills of the professionals is efficiently utilised. In environments where the patients are highly dependent on the caregiver such as the intensive care unit (ICU), patient safety is of utmost priority and ensuring this safety requires collaboration of all professionals attending to the patient. The willingness to follow evidence based practice (EBP) and inter-professional team collaborative protocols become tools to ensure the ICU patients' survival. Physiotherapists, through respiratory therapy, help reduce rates of ventilator associated pneumonia, time spent on mechanical ventilation and early mobilisation exercises aid in preventing ICU acquired weakness, which is a consequence of prolonged bed rest, and therefore reduces length of stay (LOS) in ICU and in hospital. There is evidence that using inter-professional team inclusive weaning protocols results in a shorter, more effective weaning process, which is most beneficial to patient outcomes and implementing interactive learning/education inclusive of all members. This allows for auditing and feedback and continuous professional development of the team. There is currently no research done in South Africa that explores, from the physiotherapist's perspective, the collaboration, interactions and communication between physiotherapists and the inter-professional team members in the ICU setting. This study was conducted to establish physiotherapists' experiences of interactions with the inter-professional team members in an adult ICU setting.

Methods: A qualitative study was conducted making use of semi-structured group discussions sessions which were tape recorded. A convenience sampling method was used to recruit participants for this study. A pilot study was conducted prior to the main study to validate the content of the demographic questionnaire and stimulus questions and the researcher's competency in conducting semi-structured group discussions. The average number of junior physiotherapists employed in the public sector and private sector in Johannesburg combined was 92 and the average number of senior physiotherapists employed in public and private sectors combined was 57. For this study group discussion sessions were conducted with junior and senior physiotherapists respectively. The discussions were conducted in the months of July and August 2014 at various public and private sector hospitals in the Johannesburg area. Group discussion sessions were conducted until data saturation occurred.

Results and Discussion: A total number of 39 physiotherapists participated in the semi-structured group discussions. They were all either currently working or had recently worked in an adult ICU setting. The mean age of the total group of participants was 30.7 (±8.73) years. The majority of participants were female (92.3%; n=36). There was a significant difference between years of experience in the ICU and age between the junior and senior participants. The majority of the junior participants were employed in the public health sector, while the senior participants were equally distributed between the public and private sectors.

Most participants felt that working in the ICU was a positive experience when the ICU was well managed and when each of the inter-professional team members played their role and were helpful towards the physiotherapists. Junior participants felt negative feelings when hierarchical structures had to be followed and they were reprimanded for breaking a rule. Senior participants felt negative feelings about working in ICU when they felt side-lined or undervalued in the ICU team.

Factors described as facilitators of communication between team members included familiarity with team members, team members' positive attitude towards physiotherapy, and cohesiveness in the team. Junior participants felt that a factor that facilitated communication between team members was the presence of inter-professional team members in the unit whilst senior participants felt that mentoring of junior staff and when physiotherapists demonstrated EBP patient care, were facilitators of communication. The following barriers to communication were raised by both junior and senior participants: lack of communication among team members, non-ICU trained staff employed in ICU, clashing personality types, lack of professional etiquette amongst team members, rotation of staff in and out of ICU. Junior participants highlighted additional barriers to communication such as absence of team members from the unit, lack of interest in patient care, and physiotherapists' opinion being discredited. Senior participants felt that additional barriers to communication included following hierarchical structures in the unit, overlapping scope of practice between professionals, working in an unfamiliar environment, inadequate utilisation of the ICU chart or clinical notes, the language barrier and reduced staffing levels in the unit.

Factors that were seen to enable patient care in ICU included good time management, teamwork approach to patient care, communication regarding patient care, and sharing of knowledge in the form of continuous professional development. The barriers to patient care highlighted by both junior and senior participants included non-ICU trained staff working in ICU, bad attitude, staff absence, and past experiences of physiotherapy. Additional barriers

to patient care highlighted by junior participants were lack of equipment, unfair demands on physiotherapy service, being dismissive to new ideas, hierarchy in the unit, and poor time management. Additional barriers highlighted by senior participants were staff fatigue, and lack of trust between team members.

All participants felt they were important team members in the ICU inter-professional team as they felt they provided an essential service and patient-centred care. Being adequately trained to work in ICU, adhering to EBP, the level of satisfaction with the service provided expressed by patients and other staff members, and cost-saving as a result of shorter ICU length of stay for patients were raised under the essential service theme. Holistic approach to patient care, improved patient outcomes and patient advocacy were raised by senior participants under the theme of patient-centred care.

Both groups of participants felt the facilitators in planning of and executing patient treatment in ICU included good communication between team members, use of clinical reasoning, and teamwork approach towards patient care. An additional facilitator raised by junior participants included the team's consideration of the physiotherapist's opinion. Additional facilitators mentioned by senior participants were an established relationship with other team members in the unit, and confidence. Barriers to planning of and execution of patient treatment in ICU included rapid patient turnover, lack of communication between inter-professional team members, lack of patient funds to continue with treatment, negative perception of physiotherapy, reluctance from patient, lack of equipment, unhelpful attitudes, and new physiotherapy skills not acknowledged.

Suggested solutions to overcome identified barriers were summarised in themes of quality improvement interventions and creation of a harmonious working environment. Suggestions regarding quality improvement included increased physiotherapy presence in ICU, structured treatment times, education of others regarding the role of physiotherapy in ICU, improving the standard of service delivery, familiarisation with patient care protocols in the unit, and auditing of notes in the unit. Suggestions for creating a harmonious working environment included friendliness, teamwork, confidence, sharing of patient care ideas, better communication and swift conflict resolution.

Conclusion: Physiotherapists are important members of the inter-professional team in the ICU. Exploring their interactions with other team members has highlighted issues that should

be addressed to improve the collaboration efforts within the inter-professional team to facilitate improved patient outcomes.

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LIST OF ABBREVIATIONS

CPD - Continuous Professional Development
EBP - Evidence Based Practice
ICU - Intensive Care Unit
IPE - Inter-Professional Education
LOS - Length of Stay
MHI - Manual Hyperinflation
PEP - Positive Expiratory Pressure
RCT - Randomized Controlled Trials
SD - Standard Deviation
V/Q - Ventilation Perfusion Mismatch
WHO - World Health Organisation

CHAPTER ONE

1. INTRODUCTION

1.1 BACKGROUND

The intensive care unit (ICU) is a unique healthcare setting because it comprises of complex, critically ill patients who need constant monitoring and care. Patients may be sedated or in a non-responsive state. This makes the ICU setting an environment rich in information and complexity where clinicians are continuously performing intricate practices and processing information from multiple sources in order to provide high standards of care to volatile patients (Hawryluck et al., 2002; Collin, Paloniemi and Herranen, 2015).

Inter-professional practice is the result of professionals from different disciplines working together or interacting with each other for a common purpose, commitment and with mutual respect (Catherine et al., 2015). The inter-professional team plays a pivotal role in the decision making process, implementation of treatment and overall patient safety (Patel and Shideler, 2010). The inter-professional team in the adult ICU consists of nurses who are responsible for a single patient in their twelve hour shift. Nurses spend the most time with the patient and carry out doctors' orders and have to make important decisions in the care of the patient. They monitor trends in the patient's vital signs and response to medications or treatment regimens. The doctors form the top of the hierarchy and are the major decision makers in the patient's admission and discharge from ICU. They are responsible for the corrective procedures done in operation theatre that may warrant a patient's admission into ICU. The doctors together with the nurse form the major source of referral to other inter-professional team members (Speed and Luker, 2006). The team needed to investigate, diagnose and effectively treat a patient is vast and can increase in size according to the complexity of the patient's condition. This team may include the intensivist, radiologist, laboratory staff, physiotherapist, dietician and others (Hawryluck et al., 2002; Lingard et al., 2004).

The inter-professional team is responsible for maintaining the delicate care required in treating critically ill patients and plays a pivotal role in the decision making process, implementation of treatment and overall patient safety (Patel and Shideler, 2010). The modern ICU has seen an increase in new technologies, regulations to comply

with, increased cost to maintain and increased community demand and patient complexity has led to ICU being a very stressful environment.

The hand written or electronic health record, documented in the patient's chart, displays the inter-professional collaborative effort that is given to each patient and comprises of a lay out of the necessary diagnostic tests and treatment goals verbally discussed during the inter-professional ward round (Speed and Luker, 2006).

The intensive care setting comprises of highly specialised professionals entrusted with the care of the critically ill patient. Limited communication between patient and professional emphasises the importance of maintaining good communication between inter-professional team members in order to optimise patient management and care (Needham et al., 2012).

1.2 STATEMENT OF PROBLEM AND JUSTIFICATION FOR RESEARCH

Physiotherapists are recognised and integral members of the inter-professional team that cares for patients in the ICU setting. Their perceptions of interactions and experiences within the inter-professional team are important as it may contribute to the quality of patient care provided (Hanekom, Fourie and Coetzee, 2007). There is no literature available to report on physiotherapists' perceptions of interactions with other ICU professionals. It is important that we explore physiotherapists' perceptions to better understand the dynamics of the inter-professional team and factors that hinder or facilitate relationships in the ICU setting. It is anticipated that identification of barriers and enablers that physiotherapists perceive whilst interacting within the ICU inter-professional team, will be the first steps towards empowerment of physiotherapists, contributing to improved patient care and outcomes in the South African ICU setting .

1.3 RESEARCH QUESTION

What are physiotherapists' experiences of interactions with the inter-professional team members in an adult ICU setting?

1.4 SIGNIFICANCE OF RESEARCH

In the ICU setting, collaborative efforts among members of the inter-professional team are required to bring about effective and safe management of the patient (Patel and Shideler, 2010).

Exploration of the dynamics within this inter-professional team, from a physiotherapist's perspective, is important to identify facilitators and barriers that might influence interaction with the team members. Interventions to address identified barriers can be developed and tested in future trials to enhance relations between inter-professional team members in ICU to optimise patient care.

1.5 RESEARCH AIM

The aim was to establish physiotherapists' experiences of interactions with the inter-professional team members in an adult ICU setting.

1.6 RESEARCH OBJECTIVES

1.6.1 To identify barriers to interactions between physiotherapists and other inter-professional team members in an adult ICU setting.

1.6.2 To identify enablers to interactions between physiotherapists and other inter-professional team members in an adult ICU setting.

1.6.3 To establish if differences in perceptions of interactions with other inter-professional team members exist between junior and senior physiotherapists.

1.6.4 To formulate solutions to the barriers that physiotherapists identified regarding their interactions with other inter-professional team members in ICU.

The methodology is described in more detail in chapter 3.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 INTRODUCTION

In environments where the patients are highly dependent on the caregiver such as the ICU, patient safety is of utmost priority and ensuring this safety requires collaboration of all professionals attending to the patient (Berube et al., 2006). The professionals working in the ICU possess different levels of highly specialised skills and these skills in isolation have a limited value to the vulnerable patient (Davies et al., 2011). Bringing the skills together in a creative and in a free flowing manner of sharing ideas is termed collaboration and this collaborative approach seeks to combine specialised skills so as to bring about a better outcome in the management of the complex patient (Frenk et al., 2010). The ICU being an environment with a great deal of new technology, high turnover of patients and being high pressured in nature is the ideal environment for collaboration to take place (Xyrichis and Lowton, 2008). Inter-professional team collaboration allows for enhanced patient safety, better use of resources by avoiding duplication of treatment, and improved standards of patient care as the time and skills of the professionals is efficiently utilised (Farrell, Schmitt and Heinemann, 2001; Schmitt, 2001). Mistakes in patient management have been attributed to lack of or poor communication between inter-professional team members and differences in opinion regarding the meaning of team work (Pronovost et al., 2003; Atwal and Caldwell, 2006).

The literature for this chapter was sourced using search engines such as Pubmed, EBSCO, CINAHL, Medline, Science Direct and Pedro. Accessing of websites such as Google Scholar, Plum X, World Health Organisation was done to retrieve information in the form of congress presentations, poster presentations, specific research publications and abstracts. The following keywords were used to generate literature: *"ICU inter-professional team perceptions; ICU multidisciplinary team perceptions and interactions; physiotherapists role in the ICU team; ICU teamwork dynamics; inter-professional/multidisciplinary team collaboration; open communication; attitude of team members; relationships; clinical reasoning; evidence based practice; professionals presence in ICU; leadership; professional conduct; knowledge; hierarchy in the ICU; orientation of ICU staff; innovation amongst ICU team members; quality of life theme; empower patient with knowledge theme; essential services; prevention of escalation of diseases; cost saving; patients*

perception of physiotherapy; busyness of the day". The literature that was published in the English language was sourced from inception of the databases used until 2016.

2.2 LITERATURE REVIEW

2.2.1 The Roles of Inter-Professional Team Members in Caring for a Critically Ill Patient

2.2.1.1 Nurses in intensive care

Nurses are the primary caregivers of patients and spend most time with the patient due to their long shifts and when nurses are a highly qualified, well trained workforce (Hadijbalassi et al., 2012), this reduces errors in treatment, betters patient outcomes, improves patient safety and ensures evidence based healthcare principles are adhered to (Robnett, 2006; West et al., 2009; Kendall-Gallaghe and Blegen, 2009; Penoyer, 2010).

In the critically ill patient where the vulnerability of the patient is amplified by his/her full dependency on the ICU nurse's level of expertise, experience and willingness to follow evidence based practice (EBP), protocol and ethically sound principles become tools for the ICU patient's survival (Rischbieth, 2006).

Due to nurses spending the most time with the patient, this puts them in the position to be the major communicators in the inter-professional ICU team, relaying messages between professionals and facilitating communication between patients and the family members of the patient (Person et al., 2004). The need for competent nurses is a global phenomenon due to the increasing size of the aging population resulting in the increased demand of ICU patient care (Gill et al., 2012; Flinkman, 2014).

2.2.1.2 Types of medical doctors/surgeons that are involved in the care of critically ill patients

The specialist doctors in the ICU are usually the professionals that are key role players when it comes to decision making in ICU (Barry and Edgman-Levitan, 2012). They together with the ICU nurses decide whether the patient is fit for ICU admission, escalation of treatment, de-escalation of treatment and fitness for ICU discharge/re-

admission (Snyder, 2012). A qualitative study was done using questionnaires sent to Australian and New Zealand ICU nurses to determine the collaboration effort required between professionals during decisions made regarding patient ventilation settings (Rose et al., 2008). It was observed that nurses practiced autonomy and adjusted pressure support, fraction of inspired oxygen and ventilator rate when they felt the patient required it but the nurses collaborated with the doctors when it came to key decisions like assessing readiness for weaning and extubation from the ventilator (Rose et al., 2008).

An important specialist doctor in the ICU is the intensivist. He is a specialist physician, who specialises in care of the critically ill patient, and literature has shown that 1 out of 10 deaths in the ICU can be avoided if patients are managed by intensivists (Pronovost et al., 1999). Due to their high level of speciality they are few in number compared to the rising ICU bed demand due to the increasing burden of the aging, sickly population, and therefore intensivists are in short supply (Pronovost et al., 2002). The anaesthesiologist administers sedation during procedures in theatre and intubates the patient, weans the patient off sedation and extubates them whilst monitoring their vital signs during operations and adjusts ventilator settings accordingly. In some countries the anaesthesiologist is responsible for a patient's ICU management (Krell, 2008). In the United States of America there are approximately 6000 intensivists which are too few to manage the growing aging population demand for ICU admission (Nowlins, 2004). In South Africa there is currently no records of the number of intensivists in the country, but it is a fairly new field of speciality that was established in the year 1999 by Critical Care Medicine in the College of Medicine of South Africa and requires doctors (mostly of anaesthesiologist background) to do a two year practical in a closed (Level 1) ICU and sit for and pass an examination to qualify as intensivists. The country has lost most of these skilled intensivists and critical care nurses to the private sector and overseas employment due to better remuneration, job security and better working conditions (Mathivha, 2002). The intensivist manages all the patients in the ICU, adjusts the ventilator settings according to the needs of the patient, prescribes inotropic support, approves the administration of sedation and the weaning of patients off the inotropes/sedation, decides on inter-facility transfers to specialist institutions, and follows up on response to treatment until patients are fit for discharge. The surgeon performs operative procedures in theatre on patients whilst the patient is ventilated and then determines together with the anaesthesiologist

whether the patient should be transferred to the ICU for continued ventilation and monitoring or not.

The cardiologist, traumatologist, paediatrician, cardio-thoracic surgeon, maxillo-facial surgeon, gynaecologist, and general practitioner all can have patients admitted to and managed in the ICU as a result of critical illness, complex injury, or complications developed post-surgery.

2.2.1.3 **The role of the radiologist/radiographer in patient care in ICU**

The radiographer comes to the ICU to the critically ill patient to take X-rays with the portable X-ray machine, to determine the end tip of the endo-trachael tube post intubation, to do doctor requested/routine diagnostic chest radiographs(Chen et al., 2016), post operation/procedure X-rays of bones, abdomen or joints affected or ultrasound imaging (Karhu et al., 2016).The radiologist is of extreme value to the critically ill patient because they decipher and interpret the diagnostic images. This serves to diagnose and to monitor the patient's condition, to reduce errors in treatment, to detect early changes in the patient to ensure patient safety and the initiation of early interventions to reduce further complications (Trotman-Dickenson, 2003).

2.2.1.4 **The role of the occupational therapist in patient care in ICU**

Occupational therapists play a role in patient care in ICU in assessing and fitting patients for splints, assistive devices and, in some ICUs, facilitating early patient mobility in collaboration with physiotherapists (Needham, 2008). They are involved in adjusting the environment of the patient to allow for some degree of independence in activities of daily living and in counselling/teaching the family in adjusting to the patient's functional activity. They also issue advice regarding employment issues post discharge from the ICU setting_(American Occupational Therapy Association, 2008).

2.2.1.5 **The dietician in the care of patients in ICU**

The dietician ensures optimal nutrition of the critically ill patient to allow for prevention of peptic ulcers, pressure sores, and gross muscle wasting as a result of inadequate nutrition. These complications could happen in cases where the patient is under prolonged ventilation or has suffered abdominal trauma/operation.

An observational study was done to determine the response of ICU patients with oesophageal cancer in Amsterdam to treatment by intense dietician delivered enteral feeds (Lingthart-Melis et al., 2013). They observed a total of 65 oesophageal cancer patients, 33 patients formed the control group, which represented patients who underwent surgery prior to the implementation of the dietician delivered intense nutritional support. The study group, which consisted of 32 patients, represented patients who underwent surgery after the dietician implemented intense nutritional support. On comparison of the two groups it was observed that the study group maintained more of their pre-op weight, experienced less extreme complications than the control group, who had reduced the duration of stay in the ICU of the study group (Lingthart-Melis et al., 2013). This supports the inclusion of the dietician in the inter-professional team in ICU, by reducing the ICU length of stay (LOS) which reduces patients cost, complications and accelerates patients' recovery in the ICU.

2.2.1.6 **Physiotherapists in the care of ICU patients**

According to results from reviews published by Thomas (2011) and a study by Bourdin et al. (2010) physiotherapists are playing an integral role in the ICU and early physiotherapy rehabilitation in the critically ill patient has proven beneficial in shortening the LOS in the ICU (Bourdin et al., 2010; Thomas, 2011). Thomas (2011) did a systematic review of cohort studies where physiotherapy intervention commenced early on in ICU admission. According to the Centre for Evidence-Based Medicine, such a review is classified as level 2A which represents good level of evidence. The study by Bourdin et al. (2010) was a single site cohort study (level 2B) where patients' vital signs were monitored before and after physiotherapy early mobility intervention. The results represent a lower level of evidence due to the study design and should be interpreted with caution. Physiotherapists, through respiratory therapy, help reduce rates of ventilator associated pneumonia, time spent on mechanical ventilation and early mobilisation exercises aid in preventing ICU acquired weakness, which is a consequence of prolonged bed rest, and therefore physiotherapy reduces LOS in ICU and in hospital (Hanekom, Fourie and Coetzee, 2007). Physiotherapists are the drivers of early mobility in the ICU, ensuring that movement in the form of passive movements and bed mobility commence as soon as a patient's condition allows for prevention of complications of bed rest. These include pressure sores, deep vein thrombosis, and contractures and gradual escalation of physical mobility is implemented to ensure patients get out of bed as soon as

possible to avoid the onset of these complications and to improve postural muscle strength (Gosselink et al., 2011).

Treatment strategies used by physiotherapists includes the mechanical in-exsufflation device. This device produces positive pressure with a sudden change to negative pressure that produces an artificial cough, decreases peak expiratory pressure, mobilises secretions and has been proven to facilitate weaning of patients with reduced cough reflexes from the mechanical ventilator and has been shown to reduce re-intubation rates (Gomez-Merino et al., 2002). Manual hyperinflation (MHI) is another way to stimulate cough through rapid rise in lung volumes, secretion mobilisation to larger airways, increases lung compliance, and thus prevents mucus plugging. Ventilator hyperinflation was found to be just as effective in sputum clearance and lung compliance whilst avoiding the need to disconnect the patient from the ventilator circuit (Dennis, Jacob and Budgeon, 2012; Berney, Haines and Denehy, 2012). The study by Dennis, Jacob and Budgeon (2012) was a single centre, non-inferiority cross over randomised trial comparing ventilator hyperinflation and manual hyperinflation. This is level of evidence 1B which suggests a strong level of evidence. The addition of head down tilt body positioning improved sputum weight cleared with MHI (Berney, Haines and Denehy, 2012). The expert opinion paper by Berney, Haines and Denehy (2012) is a description of physiotherapy practice in Australian ICUs and not a formal systematic review of randomised trials, cohort studies or case studies; therefore, it is classified as level of evidence 5 according to the Centre for Evidence-Based Medicine. Positive expiratory pressure (PEP) is resistance applied to expiratory flow. These devices assist in stenting airways to allow for secretion mobilisation especially the use of oscillatory PEP e.g. Broncho vibe and PEP blow bottles. These devices have been shown to increase alveolar recruitment and ventilation when used after extubation from mechanical ventilation or in medical conditions associated with copious secretion production (Flude, Agent and Bilton, 2012; Lee et al., 2015). In a systematic review done by Stiller (2013) she found that when multimodality chest physiotherapy was done daily to mechanically ventilated patients it was observed to decrease LOS in ICU, reduce the clinical pulmonary infection score, mortality rate and ventilator duration (Stiller, 2013).

Physiotherapists play an important role in strengthening the inspiratory muscles of patients who have undergone prolonged mechanical ventilation or who have been diagnosed with ICU-acquired weakness. Inspiratory muscle training assists with

weaning of these patients from mechanical ventilation and can be applied through the use of a spring-loaded resistor device that is attached to the patient's artificial airway. Inspiratory muscle training is a technique that targets the muscles of inspiration namely the diaphragm and accessory inspiratory muscles. The aim is to increase inspiratory muscle strength and endurance (Cader et al., 2010). It can also be applied preoperatively for patients selected for elective surgery in order to reduce postoperative pulmonary complications. In a randomised controlled trial involving 32 women who underwent elective bariatric surgery, half of the group was given pre-operative inspiratory muscle training using the Threshold inspiratory muscle trainer device (Barbalho-Moulim et al., 2011). The initial load applied through the device was calculated at 30% of mean inspiratory pressure. The threshold inspiratory muscle trainer was applied for 2-4 weeks, with one daily session that lasted for 15 minutes duration, 6 times per week, while the control group did not do inspiratory muscle training. It was found that the experimental group lost only 23% of their inspiratory muscle strength (assessed with the measurement of maximal inspiratory pressure), while the control group lost 47% of their inspiratory muscle strength (Barbalho-Moulim et al., 2011). This was a single centre randomized controlled trial which represents level of evidence 1B. This is a higher level of evidence which demonstrated that pre-operative inspiratory muscle training attenuated the negative effects of open bariatric surgery.

Physiotherapists play a role in weaning the patient off the ventilator using inspiratory muscle strengthening (as mentioned above); improving lung capacities and volumes using thoracic expansion techniques such as incentive spirometry, deep breathing exercises and active cycle of breathing technique, and PEP devices; mobilisation and clearance of secretions using manual chest therapy such as percussions and vibrations, postural drainage or modified postural drainage positions, and suctioning or facilitated coughing; and lastly improve oxygenation through the use of body positioning to facilitate ventilation-perfusion matching (V/Q) (Clini and Ambrosino, 2005). Through the application of all the above techniques and early mobilisation exercises and activities, physiotherapists assist patients by reducing their dependency on the ventilator, reducing incidents of ventilator associated pneumonia and reducing respiratory muscle and postural muscle deconditioning (Ambrosino and Makhabah, 2014).

2.2.1.6.1 Professional values of physiotherapists

A qualitative study was done in Australia, using semi-structured interviews with experienced physiotherapists, to explore their professional values (Aguilar et al., 2013). There were three re-occurring themes identified:

- The partnership between the therapists and patients was highly valued and involved building a relationship and fostering trust between the patient and the physiotherapist.

- 'The professionalism value', is an EBP based standard of patient treatment whilst upholding professional boundaries with inter-professional team members and with the patients.

- The humanitarian theme of physiotherapists having empathy, honesty, being caring towards their patients, was expressed as the theme that guided daily interactions between patients and their physiotherapists (Aguilar et al., 2013).

2.2.2 Patient Outcomes as a Result of Teamwork in ICU

2.2.2.1 Weaning of patients from mechanical ventilation

In the ICU, 85%-90% of patients are mechanically ventilated at one point in their ICU lives. Most are weaned quickly and successfully, but 20%-30% require a more systematic, gradual weaning process (Berney, Haines and Denehy, 2012). Quickly removing the patient from ventilator support does reduce the chances of airway trauma as a result of the endotracheal tube, nullifies the need for patient sedation, reduces the chances of lung injury as a result of the ventilator, but removing the patient prematurely from the ventilator can also cause respiratory muscle fatigue resulting in respiratory failure and leave the airway exposed resulting in aspiration (MacIntyre, 2005).

There is evidence that involving the entire inter-professional team via using an inter-professional team inclusive weaning protocol to wean patients off mechanical ventilation results in a shorter, more effective weaning process, which is most beneficial to patient outcomes (Ely et al., 2001; Grap et al., 2003). There is evidence that if these protocols are implemented using interactive learning/education of the inter-professional team members, that this allows for auditing and feedback and

continuous professional development (CPD) of the team (Marelich et al., 2000). This was a single site, prospective randomized controlled study which represents high level of evidence. Nurse driven weaning of patients off sedation protocols resulted in 50% reduction in the duration of mechanical ventilation, and a reduction in ICU and hospital LOS of approximately two to three days (Marelich et al., 2000). Multi-modulatory physiotherapy was shown to facilitate weaning off the ventilator in a prospective study, done in India, observing a total of 173 mechanically ventilated patients in medical and surgical ICUs, where 86 received MHI and suction while the study group received postural drainage, percussions, vibrations, exercises, and positioning twice daily. The study group (58 patients) were successfully weaned off the ventilator compared to 24 patients in the control group, while 61.1% of patients in the control group experienced higher complication rates when compared with the 26.4% in the study group (Pattanshetty and Gaude, 2011). A non-randomised experimental trial was done by Plani, Becker and Van Aswegen (2013) and compared the outcomes of a prospective cohort of 28 mechanically ventilated trauma patients, who were weaned using a physiotherapy and nurse driven weaning and extubation protocol, to the outcomes of a retrospective cohort of 28 patients, who were weaned according to physician self-directed weaning strategies. There was a two day reduction in mechanical ventilation time in the nurse and physiotherapist driven weaning and extubation protocol, which has a clinically significant implication in reducing rates of complications associated with prolonged ventilation such ventilator associated pneumonia (Plani, Becker and van Aswegen, 2013). This study is classified as level of evidence 2B which suggests moderate strength of results that should be interpreted with some caution.

2.2.2.2 **Early mobilisation of patients in ICU**

Early mobilisation in the ICU commences with positioning of the sedated patient to relieve pressure from anatomical points in the body that are prone to formation of pressure sores using alternate side lying. Devices such as flowtrons and foot pumps are used to prevent the formation of deep vein thrombosis, and continuous rotation beds, if available in the unit, can be used to continually rotate the patient at 60 degree angles to enhance lung ventilation. Physiotherapy driven passive movements/passive cycling of the upper and lower limbs are implemented from the time of patient admission to ICU and positioning of the patient in alternate body positions is used to improve V/Q matching or postural drainage to aid oxygenation of the lungs and for the removal of secretions (Gosselink et al., 2011; Gosselink et al.,

2008). Early mobilisation of awake and cooperative patients in ICU has been shown to result in maintenance of postural muscle and respiratory muscle integrity, strengthening of muscles of locomotion, maintaining functional capabilities such as bed mobility, basic activities of daily living and shortens hospital LOS (Stiller, 2013). The paper by Stiller (2013) is a systematic review of the results of randomized controlled trials, expert opinion papers, surveys, and comparative trials. Therefore the results are of a high quality and can be readily accepted. Critical care nurses and doctors are often asked to assist the physiotherapist to mobilise patients in ICU due to the number of attachments to the patient such as the ventilator and ventilator tubing, intravenous drips and stands, and portovac drains/tubing. Assistance with mobilisation is crucial as the physiotherapist's role is to support the patient in the upright position and to guide them with the use of walking aids. Therefore teamwork is essential to ensure that patients reap the maximum benefits of out of bed mobilisation so as to shorten ICU and hospital LOS.

2.2.2.3 **Perceptions of other healthcare team members about physiotherapy**

A study done in the United Kingdom which explored nurses' perceptions of physiotherapists found that nurses thought the role of physiotherapy was that of ambulation and early mobilisation of patients (Dalley and Sim, 2001). The authors reported that respect was identified as an important facilitator to communication with nurses and carrying out physiotherapy treatment was better tolerated when nursing practices could be incorporated into the same treatment (Dalley and Sim, 2001). A qualitative study was done in a critical care unit in a tertiary hospital in India exploring nurses' perceptions of physiotherapists (Gupte and Swaminathan, 2016). The authors found that nurses thought physiotherapists to be a vital part of the ICU inter-professional team with regards to mobilisation of patients and that limitation existed in the relationships between nurses and physiotherapists. These limitations were described as lack of teamwork, not discussing patient goals together and that these could be solved by inter-professional team learning initiatives and trading off of skills during patient treatment (Gupte and Swaminathan, 2016). According to a study done in Kannada, India where final year students in various health care undergraduate programs were asked via questionnaires to describe their perceptions of physiotherapy, 88% of respondents were found to be lacking in knowledge about the physiotherapy profession while 53.1% of respondents had positive perceptions of physiotherapy (Varghese et al., 2012).

2.2.3 Definition of Teamwork

Teamwork is when two or more persons work together, combining their skills, time and information and co-ordinate all of these towards a similar goal or outcome (Daft, 2003). For a team to work well an understanding of each member's role in the team is needed as well as the ability to take responsibility for one's role in the team. Solutions to problems are often generated with greater ease in a team where collective responsibility, sharing of prior experiences and expertise is done (Duthie, 1999).

2.2.3.1 Perceptions of teamwork among healthcare professionals

A study was done in London which used ethnographic means to qualitatively investigate inter-professional collaboration between nurses, therapists and social workers working in medical wards (Reeves et al., 2010). Individual and group interviews were conducted. This study discovered that a major factor that influenced the inter-professional collaboration in medical wards was increasingly differing perceptions of teamwork. This was reported to be the norm amongst healthcare professionals as a result of their differing schools of training and educational backgrounds (Reeves et al., 2010).

Atwal et al. (2006b) stated that how much knowledge each professional understood on teamwork and how much an individuals' professional perception of teamwork differed from the next might pose a challenge to the effectiveness with which staff worked collaboratively in ICU.

2.2.4 Factors that Influence Teamwork in the Intensive Care Unit Setting

Hawryluck et al. (2002) highlighted factors which influence inter-professional collaboration or conflict among ICU inter-professional team members:

- Authority/organisational power
- Level of education/specialisation
- Differing levels of patient needs
- Access to relevant knowledge
- Access to resources
- Communication
- Job satisfaction
- Knowledge regarding other professions (Hawryluck et al., 2002)

2.2.4.1 **Authority or organisational power**

When the team agrees on a leader and there is unity as to who leads decision making in times of crises, this can resolve conflict or tensions in the inter-professional team (Hawryluck et al., 2002). Many nurses are employed in the ICU and with nurses spending the most time with the patient, combined with the power of their presence in ICU, this could give them a false sense of dominance and control of the ICU environment (Kydona et al., 2010). This control and dominance could lead to other professionals feeling undermined, side-lined or irrelevant in their presence and severely cripple the ICU inter-professional team working together in a collaborative way (Piquette et al., 2009). Daily interactions with health professionals in a complex environment such as the ICU can result in nurses having tension or conflicts and contribute to low levels of job satisfaction in the workplace (Hawryluck et al., 2002).

Inter-professional team interactions have been reported to be tense between nurses and physicians especially as a result of brief and irregular exchanges of patient information, with each professional focusing on interaction amongst their own profession as a way of avoiding organisational professional power and hierarchy (Allen, 2002; Lewin and Reeves, 2011; Reeves et al., 2010). There have been studies done where nurses felt undermined due to the hierarchical structures in the ICU dictating outcomes of decisions and expecting the nurses to co-operate with implementation whether they were in agreement with the decisions or not (Higgins, 1994; Linton and Farrel, 2009; Nathanson et al., 2011; Johnson, Kearney and Johnson, 1994). According to Paradis and Reeves, 2013 who reviewed 981 ethnographic studies on the cultures of inter-professional teams in ICU, importance was placed on the workflow in the ICU and hierarchical relationships. Hierarchical relationships added their strain on workflow when it came to decision making, when implementation of protocols from management were challenged and relationships between different genders and races were complicated (Paradis and Reeves 2013). Atwal et al. (2006a) stated that the way in which medical power and hierarchy in the ICU team is organised poses a challenge to teamwork.

2.2.4.2 **Level of education/specialisation**

When education is done to demonstrate shared goals between inter-professional team members then it unifies the team; but, if the education competes one professional against another or takes time away from the patient then it results in

tensions during patient handling (Hawryluck et al., 2002). There is vast volumes of research done in China, Europe and North America that have concluded that hospitals/ healthcare facilities that employed highly qualified health professionals results in improved patient outcomes and positive patient feedback of their stay in hospital (Aiken et al., 2011; Estabrook et al., 2005; You et al., 2012; Van Heede et al., 2009).

This is the current breakdown of nurses' pre-registration (undergraduate) training: a) a university four year baccalaureate degree, which is understood to be a higher education award and produces professional nurses (Harvey, 2004a), b) a four year college diploma, c) a one year certificate which produces auxiliary nurses, or d) a two year certificate that produces an enrolled nurse (Harvey, 2004b).

In 2011 the South African universities produced 590 four year degree professional nurses and the colleges produced 2376 diploma professional nurses (South African Nursing Council, 2011). A diploma in advanced critical care nursing is one year full time or two years part time postgraduate qualification that is offered to professional nurses that have completed a four year Bachelor degree from a university in South Africa (www.wits.ac.za/course-finder/postgraduate/health/intensive-care-nursing/).

Physiotherapists in South Africa are trained in ICU at undergraduate level and are not required to do specific ICU training before they are allowed to work in ICU after obtaining their Bachelor of Science degrees (Hanekom et al., 2015).

The differences in training and requirements for working in ICU could be one of the reasons that physiotherapists and critical care nurses develop tension or conflict in relation to patient care in ICU.

2.2.4.3 **Differing levels of patient needs**

When professionals work together to establish accurate information from or about the patient's condition and share the patient's needs with the team and a consensus is met on patient management, this may facilitate collaboration; however, if there is disagreement about what professionals feel are the patient's needs, this may bring about conflict within the team (Hawryluck et al., 2002). Working in the ICU has been proven to increase emotional stress, in the nursing staff, due to the high pressured environment and the high standards set for patient treatment which, may or may not

be met, due to the patients' condition (Elpstein et al., 2005). This is one of the reasons that ICU nursing staff has a high turnover rate due to staff feeling that they are unable to cope with the demands or when nurses feel they are inadequately treating their patients (Laporta et al., 2005).

2.2.4.4 **Access to relevant knowledge and resources and time to implement and review new ideas**

When a professional claims specific knowledge and exerts ownership or denies responsibility of certain knowledge, this can bring about tensions within the inter-professional teamwork dynamic (Hawryluck et al., 2002). Health care professionals' application of their clinical knowledge to patient treatment in a way that is relevant and supported by evidence in the literature to arrive to a decision is classified as EBP (Rycroft-Malone, 2004). In a study that compared nurses and physiotherapists' perceptions of EBP, the lack of time to source information and to implement new practices, was highlighted as the greatest barrier to EBP both by nurses and physiotherapists (Palfreyman, Tod and Doyle, 2003). In the same study it was discovered that frequently used sources of evidence amongst nurses and physiotherapists were: a) client feedback, b) prior experience, and c) the internet. Nurses did not value EBP but valued unit protocols and prior experience as references while physiotherapists had a better familiarity with EBP as a result of their undergraduate training (Palfreyman, Tod and Doyle, 2003). Clinical reasoning occurs in phases which begin with identification of a problem, followed by a formulation of a question and solutions are researched in the literature. A professional uses their occupation specific knowledge base to collect data where the relevant evidence is extracted and hypothesized (Smith, Higgs and Ellis, 2007; Higgs, Jones and Titchen, 2008). When physiotherapists practice clinical reasoning paired with EBP this results in appropriate, effective treatment to the ICU patient (Stiller, 2000).

When a gap exists between known clinical knowledge versus the actual treatment that is given this is defined by the World Health Organisation as the 'know do gap' (WHO, 2006). The reason for the 'know do gap' in nurses was found to be not having the correct skill; not enough time to implement the knowledge due to high pressure; not understanding the knowledge or difficulty extracting the relevant knowledge (Kajermo et al., 2010). The reasons for the 'time do gap' in physicians was also limited time to research; lack of confidence in the literature and not sufficient time to

interact with the patient nor to implement the knowledge (Freeman and Sweeney, 2001; Summerskill and Pope, 2002; Tracy, Dantas and Upshar, 2003).

Competition for resources such as time, literature, and support from management can influence the inter-professional team tensions or conflict if one group of professionals is perceived to receive more support than the next group of professionals (Hawryluck et al., 2002).

Physiotherapists face the same challenges to EBP as nurses which include the struggle to find the time in the high pressured environment to implement new evidence. They struggle to decide which evidence to implement and how they should implement it (Kamwendo, 2002; Maher et al., 2004; Grimmer-Somers et al., 2007). According to Higgs and Jones, physiotherapists' clinical reasoning involves consultation with the patient, consultation with the literature via data collection and with their physiotherapy skill to arrive at a new theory that may also require being researched in the literature.

2.2.4.5 **Communication**

Communication failures amongst the inter-professional team members as opposed to individual errors by the inter-professional team members accounted for 72% of causes of perinatal death and injury in neonatal ICU settings (Coscia et al., 2010). A qualitative study was performed to investigate collaboration between professionals (intensivists, respiratory therapists and ICU nurses) in the ICU using semi-structured individual interviews (Piquette, Reeves and LeBlanc, 2009). Results showed that when professionals respected each other and their profession it was a strong facilitator in everyday interactions among the team members. It was also reported that in the case of crisis management, when hierarchy took over in the form of team leadership and delegation of tasks, this made for swift and effective patient management (Piquette, Reeves and LeBlanc, 2009; Lingard et al., 2004). This study also highlighted the importance of debriefing of all inter-professional team members after a crisis had occurred, especially if the crisis had resulted in a failed resuscitation of a patient (Piquette, Reeves and LeBlanc, 2009). The purpose of debriefing is to regroup, to share new ideas, to offer solutions and explanations as to how the crisis could be better managed if it arose again in future.

Another method of improving communication in the ICU is through virtual ICU centres called e-ICU where intensivists and critical care nurses, at a different site, have live feeds via videos, electronic screening of patient monitors, links to X-rays and ventilator settings to assist the bedside nurse with patient management without being physically present in the unit (Nowlin, 2004). These e-ICUs exist in the United States of America in places such as Florida, Illinois, Virginia, Texas, New York, and California with live feeds from numerous ICU's using a special software (e-ICU Smart Alerts software) that alarms when the patient's information changes into a life threatening pattern, such as decreasing oxygen saturation and respiratory rate (Nowlin, 2004). Such technology is currently not available in South African ICUs.

2.2.4.6 **Job satisfaction**

In a study to determine gender specific burnout in health care professionals, it was highlighted that job satisfaction was accompanied by financially rewarding employment and female health care professionals from poor socio-economic backgrounds and with high levels of stress were at higher risk of burnout and job dissatisfaction (Norlund, et al., 2010). Young female professionals who pursued their work with high expectations and derived their sense of personal value from their work, combined with increasing workloads, poor sense of community, reduced mental health, with little control over their work structure, experienced increased incidents of being chronically fatigued, frustrated, were emotionally disengaged compared to other health care professionals and had low levels of job satisfaction (Aldrees et al., 2013; Fiabane et al., 2013). A qualitative study was done on 200 physiotherapists in Poland who were actively employed in hospitals, nursing homes, clinics, offices, spas, and educational institutions, to measure levels of job satisfaction and burnout using the Burnout Inventory Scale and Life Satisfaction questionnaire (Sliwinski et al., 2014). It highlighted that physiotherapists that had been active for more than 15 years, were financially satisfied, had fulfilling family and social life, and who worked in the healthcare sector/ education sector, had lower rates of burnout and higher rates of job satisfaction when compared to physiotherapists who had been active in the healthcare sector for between 5-15 years and had progressed in age. When female physiotherapists had a reduced financial standing/income and when male physiotherapists had reduced time to spend with family and socially engaging activities, these increased the rates of burnout and lowered job satisfaction amongst Polish physiotherapists (Sliwinski et al., 2014).

2.2.4.7 **Knowledge regarding other professions**

A study exploring the relationship between physiotherapists and midwives, using the nominal group technique, revealed that they were not aware of each other's skill sets which reduced their respect for each other's professions (Anderson, 1999). While another study exploring the nurse versus occupational therapist relationship revealed that the further the jobs differed from each other it leads to nurses not understanding the value that occupational therapists played in patient outcomes. This led to undervaluing of other professionals' work which resulted in conflict over patient handling (Waters, 1994).

2.2.5 **Methods to Improve Teamwork within the Intensive Care Unit Setting**

2.2.5.1 **Communication**

A study done in India highlighted that when precise, positive and regular communication amongst the inter-professional team members was ongoing, this was found to be most beneficial when it came to combining their skills to ensure that patients benefitted from their management (Saghafi et al., 2012). In patients with complex spinal cord injury, inter-professional team co-ordination, collaboration and teamwork were shown to lead to the speedy recovery of patients in the Neuroscience ICU of Harborview Medical Centre. Team performance improved with continued development of management strategies and positively impacted team rehabilitation goals of these complex patients with spinal cord injury (Rozeboom et al., 2012). Improving communication between inter-professional team members about the treatment goals of patients and about the planning/progression of treatment is a lifesaving exercise that needs continued research (Ohlinger et al., 2003).

2.2.5.2 **Record keeping**

During inter-professional ward rounds the collaborative effort of the inter-professional team is displayed and recorded in the form of patient progress notes (Narasimhan et al., 2006). It was highlighted that when a written common goal-orientated tool sheet was used during ICU ward rounds to document and illustrate information of patient treatment goals and patient response to treatment, cohesion and collaboration amongst health professionals in ICU was greatly improved (Gupta et al., 2013).

2.2.5.3 **Teamwork between inter-professional team members**

The literature stresses the importance of limiting hierarchical structures in patient care by empowering inter-professional team members to use clinical reasoning to have the confidence to carry out their autonomy (Pagnini and Bousso, 2014). In times of crisis professionals expressed that they worked closer together with other professionals to treat the patient in a holistic manner (Reeves et al., 2013). Atwal and Caldwell (2006) concluded that acquiring skills in team building and continuing professional development (CPD) improves teamwork dynamics in the ICU.

2.2.5.4 **Simulation training**

A study was done in the neonatal ICU of a hospital in the United States of America, using simulation training, to assess and build team work within the neonatal ICU inter-professional team members. Participants included physicians, nurses, respiratory therapists and caregivers (Colacchio et al., 2012). The authors reported that prior to simulation training the participants felt that they had positive perceptions of teamwork. After simulation training participants felt that the training was beneficial, valuable and that they were able to formulate new ideas to improve their teamwork (Colacchio et al., 2012). It was therefore concluded that simulation training in the health care sector might be of great benefit and should be prioritised, where available.

2.2.5.5 **Staff support**

According to Thyer (2003) the following were seen to improve ICU nurses' team collaboration:

- When nurses felt acknowledged by professionals and each other
- When sharing of information was ongoing and regular between professionals
- When team building was a priority in the unit (Thyer, 2003).

When nursing leadership was easy to access, approachable and could maintain a strong physical presence in the ICU this improved nurses' confidence in carrying out autonomy and in improving overall patient care (Raey et al., 2003, Paradis and Reeves, 2013). Studies have shown that when nursing leaders are present in the ICU and address matters of staff motivations, education, skills building, team building and play a role of facilitative interactive supervision, this improved the inter-professional teamwork dynamic (Rosegran, Athlin and Segestin, 2007). However when nurses' leadership is focused on financial administration and dictatorship of policies without consultation this can lead to emotional exhaustion and eventually

reduce staff performance in the ICU nursing staff team (Filkins, 2003). In another study exploring nurses autonomy in providing end of life care, treatment and decision making required collaborative care between nurses and the physicians looking after the patient. Sharing of information by physicians with nurses was found to improve nurses' autonomy and facilitated nurses to think critically, independently and confidently (Moritz et al., 2008).

2.2.6 Physiotherapists' Perceptions regarding Inter-Professional Teamwork in Intensive Care

Little research has been documented exploring physiotherapists' inter-professional collaboration with other team members in ICU or in hospital wards. There is currently no research done in South Africa that explores, from the physiotherapist's perspective, the collaboration, interactions and communication between them and the inter-professional team members in the ICU setting.

CHAPTER THREE

3. METHODS

3.1 STUDY DESIGN

A qualitative study design was chosen. Qualitative research provides the ideal means to describe the complex nature of how individuals perceive their own experiences (Portney and Watkins, 2009).

3.2 SUBJECTS

The study population consisted of junior and senior physiotherapists who worked in the public or private health care sector in adult ICU settings in Johannesburg.

3.2.1 Sample Selections and Demographics

A convenience sampling method was used to recruit participants for this study and the interviews were conducted in the months of July and August 2014.

Site of Study

The following hospitals in Johannesburg provided permission for semi structured group discussions to be conducted:

- Public sector hospitals:
  - Charlotte Maxeke Johannesburg Academic Hospital
  - Helen Joseph Hospital
  - Chris Hani Baragwanath Academic Hospital
  - Tambo Memorial Hospital

- Private sector hospitals:
  - Milpark Hospital
  - Garden City Medi-Clinic
  - Park lane Hospital
  - Union Hospital

3.2.2 Inclusion Criteria

Junior physiotherapists

- Those who were working daily in an adult ICU in public or private health care settings and had been working for a minimum of one year and less than five years in general.

Senior physiotherapists

- Those who were working daily in an adult ICU in public or private health care settings for five years or longer.

3.2.3 Exclusion Criteria

- Undergraduate physiotherapy students
- Physiotherapists serving their community service year
- Physiotherapists who did not work in an adult ICU setting on a daily basis/had not worked daily in the ICU for less than 3 months duration

3.2.4 Sample Size

The average number of junior physiotherapists employed in the public sector and private sector in Johannesburg combined was 92 and the average number of senior physiotherapists employed in public and private sectors combined was 57. A convenience sampling method was used to recruit participants for this study.

For this study group discussion sessions were conducted with junior and senior physiotherapists respectively. Semi-structured group discussion sessions were conducted until data saturation occurred. Saturation was the point at which no new or relevant information emerged.

3.3 Study Procedures for Pilot Study

A pilot study was conducted to validate the content of the demographic questionnaire and stimulus questions and the researcher's competency in conducting semi-structured group discussions. The content of the stimulus questions was validated by an independent researcher experienced in performing qualitative research to match stimulus questions against the study aims and objectives of the study.

3.3.1. Pilot study aims

3.3.1.1. To test the effectiveness of the semi-structured discussion questions to generate appropriate information to meet the study objectives.

3.3.1.2 To test the effectiveness of the researcher's skills/method applied in the semi-structured group discussions.

3.3.2. Pilot study objectives

3.3.2.1 To determine whether the questions in the semi-structured discussion questionnaire was understood by participants.

3.3.2.2 To facilitate training of the researcher to improve her interview skills.

3.3.2.3 To evaluate the feasibility of using the tape recorder.

3.3.3 Pilot study participants

Four participants were invited to participate in the pilot study consisting of two physiotherapy clinicians employed in the ICU setting and two senior qualitative researchers and academics in the School of Therapeutic Sciences at the University of the Witwatersrand. An independent senior researcher observed the pilot study semi-structured group discussion.

3.3.4 Key recommendations made and adopted from Pilot study

The senior researcher and participants provided the following feedback and suggestions:

- The researcher was asked to welcome the participants to the group discussion.

- The interviewer was asked to mention the date, venue and whether the group discussion consisted of senior or junior therapists at the beginning of the semi-structured group discussions for accuracy of transcription of recordings at a later stage.

- The researcher was advised to define the term inter-professional team members and give examples to participants prior to conducting the discussions so they understood it was the entire team in question.

- To direct participants to talk in clear audible voices and not to cover their mouths when speaking and to cough away from the recorder.

- To read questions twice to ensure participants understood what was asked of them.

- The researcher was advised to write down the verbal responses to relational barriers to question 2 in order to keep an accurate record.

- To elaborate in more layman's terms after each question or explain the question in simpler terms if participants had difficulty in answering a particular question.

- The researcher was to be aware of persons with stronger personalities and encourage persons with softer personalities to speak out their opinions, ask, 'Do you have an opinion?'

- The researcher was advised that if participants move away from the original question in their discussion, to repeat the original question.

- To prompt participants about their experiences with other team members and to not only focus on one specific type of team member.

- The researcher should not look down too much, but should maintain eye contact especially during the introduction and when asking questions, and not to write down too much during answering of questions.

- The researcher was advised to personalise the introduction and it should not be too formal.

- The researcher was advised to write down participants' answers to summarise the answers later and to still maintain focus on the discussion, eye contact is important.

- The researcher was requested to not contribute to the discussion but to stay neutral

- The researcher was advised to play back semi-structured group discussions by listening to each recording after the interview to improve her interviewing skills as she collects her data

- The researcher was advised to prompt for participants to elaborate or clarify any unclear issues.

These comments were implemented in the first discussion at Helen Joseph Hospital with the junior physiotherapists group and it worked well. The tape recorder was found to be feasible form of data collection. The participants had no difficulty understanding the questions. The same procedure was therefore followed with the remaining semi-structured group discussions.

3.4 STUDY PROCEDURE FOR MAIN STUDY

The researcher contacted physiotherapy private practice owners and heads of departments of public sector hospitals in Johannesburg, with ICUs, via email to provide them with information about the study purpose and aims. Failure to generate sufficient responses via email resulted in physiotherapists being contacted telephonically/verbally. She contacted the practice owners of the physiotherapy practices serving the ICUs in the private hospitals in the Johannesburg area telephonically. The telephonic communication served to receive permission to conduct the interview and to acquire a time and venue convenient for all party's to attend the semi-structured group discussions if the email communication failed to generate adequate responses. The email addresses of the individual physiotherapists who work daily in ICU were obtained from the heads of department of the public sector hospitals and the researcher then sent invitations to each of them and requested them to participate in the study. The physiotherapists who responded to invitations to participate in the study and who met the inclusion criteria were selected to form the study population.

The junior physiotherapists and senior physiotherapists who agreed to participate were allocated dates that were convenient for them where the researcher physically presented herself to conduct the one hour long semi-structured group discussion.

In this study data saturation occurred when all study participants completed their semi-structured group discussions.

Group Interview Session Procedure

Table 3.1 Number of participants per discussion session

Hospital	Number of Junior Participants	Number of Senior Participants
Helen Joseph Hospital	2	0
Charlotte Maxeke Hospital	3	1
Garden City Hospital	1	1
Union Hospital	7	2
Park Lane Hospital	1	0
Tambo Memorial Hospital	4	5
Milpark Hospital	0	2
Chris Hani Baragwanath Academic Hospital	5	3

The procedure outlined below was followed during each of the sessions:

The semi-structured group discussion session commenced with a brief introduction and explanation of the procedure, rules and what will be expected from the participants by the researcher. This was accompanied by distribution of the study information sheet, consent forms and demographic information sheet which were completed by the participants (Appendices A-C). Writing material and pens were given to participants for filling in the consent forms and demographic information sheet. This was followed by a period for the researcher to verbally pose each stimulus question (Appendix D) to the participants who were then given time to respond verbally. The session was tape recorded. The questionnaire was used as a guide in the process to keep questions standardised. The same procedure was followed regarding the rest of the junior and senior semi-structured group discussion sessions.

The tape recording added accuracy to the data collected because the recording served as a source of reference of the semi-structured group discussion sessions and allowed for verbatim transcription at a later stage. This recording did add to the credibility, applicability and transferability of the data collected (Golafshani, 2003). No participants declined audio recording.

3.4.1 Instrumentation

The instruments used to gather the qualitative data were:

3.4.1.1 The semi-structured group discussion questionnaire (appendix D)

3.4.1.2 Olympus VN-5500PC digital voice recorder.

3.4.1.3 Printer and paper for printing of consent forms, information sheets, pages posing questions and answers generated in interview sessions and write up of the results of the study.

3.4.1.4 Pens

3.4.1.5 Laptop with Microsoft Excel

3.5 ETHICAL CONSIDERATIONS

- An application was made to the Human Research Ethics Committee (Medical) of Wits University for permission to conduct this study. Permission was granted and the clearance certificate number given was M140345 (see appendix E).

- Permission was requested verbally via telephone and in writing via email, from head-of -departments of each physiotherapy department to conduct discussions in their respective departments at each hospital.

- Informed consent, regarding participation and permission to audiotape, was obtained from each participant before the semi-structured group discussion session was commenced.

- No participant was identifiable when analysing data and reporting results.

- Participants were allowed to withdraw from the semi-structured group discussion session, prior to completion, if they wished, without any penalty.

3.6 DATA MANAGEMENT

The semi-structured group discussion sessions resulted in the reporting of qualitative data. Transcription of the information gathered from the audio recording device was

performed by a professional company (Perfect Transcribers, Parktown, Johannesburg). Data cleaning was done by the researcher by listening to the tape recordings while reading the transcribed notes.

The transcribed notes were sent to some of the participants for verification of its correctness. A directed content analysis approach was used to present the information obtained. This was done using an inductive approach because it was concerned with the generation of new theory emerging from the qualitative data i.e. themes and codes which was generated by the researcher posing stimulus questions (Heath and Cowley 2004). Open coding was used to break down data for each semi-structured discussion session into first level concepts followed by second level sub-categories (Aulls 2004).This was done by reading written transcripts and by forming a Microsoft Excel table with the main headings followed by the sub-categories with each relevant quote. Open coding was performed to allow formation of themes. This is done in summary form in the results chapter. The notes were then given to a second researcher, experienced in qualitative research, who was asked to do independent coding of themes as well. The coding and themes from the first and second researchers was then reviewed and were found to generate similar themes.

The researcher ensured trustworthiness by considering the following four strategies: credibility, transferability, dependability and confirmability (Lincoln and Guba, 1985).

Credibility was achieved through engagement in the group interview sessions, utilisation of the information from the preceding sessions, peer examination of the conduct of the semi-structured group discussion in a manner of peer review and criticism allowing for improvement and clarity in the next semi-structured group discussion sessions. Member checking was done to ensure accuracy by sending the transcribed scripts with the concepts identified (Kielhofner, 2006), to some of the participants for verification. This was done via emailing of written transcripts of participants in the semi-structured group discussions to see if they agreed with what was transcribed.

Transferability was ensured by means of purposive sampling of clinicians with ICU experience. A dense description of data collection process also provides adequate information to other researchers. The inclusion of participants from the private and

the public health sector and the inclusion of junior participants and senior participants show that the research study findings can be applicable to other contexts.

Dependability was assured by giving a complete description of the methodology that was used and the detailed description provided was then used to confirm truth and accuracy of the process and data derived. The transcribed notes were then given to a second researcher, experienced in qualitative research, who was asked to do independent coding of themes. The coding of themes from the first and second researchers were reviewed and were found to generate similar themes. Validity was further enhanced by discussing the analysed group discussion session with an experienced qualitative researcher for verification of content of codes analysed.

Confirmability was ensured by:

- Transcription of the information gathered from the audio recording device was done by a professional company called Perfect Transcribers, Parktown, Johannesburg.
- Data cleaning was done by the researcher by listening to the tape recordings while reading the transcribed notes.
- The transcribed notes were sent to some of the participants for verification of their correctness.
- A directed content analysis approach was used to present the information obtained. Coding was performed to allow for cross-referencing between recorded and written information for each focus group session.
- The transcribed notes were then given to a second researcher, experienced in qualitative research, who was asked to do independent coding of themes as well. The coding of themes from the first and second researchers were then reviewed and were found to generate similar themes.
- Explanatory quotes from the raw data were provided in the Results section to enhance understanding of participants' viewpoints.

Quantitative data were captured in Excel. IBM® SPSS® version 24 was used for statistical analysis. Descriptive statistics were used to summarise the data. Continuous variables (age and years worked in ICU) were summarized as means, minimum and maximum and standard deviation (SD). Comparisons between junior and senior physiotherapists for age and years worked in ICU were done using independent t-test. Categorical variables were summarized as frequencies and

percentages. Comparisons were made for categorical data between junior and senior physiotherapists using cross-tables.

CHAPTER FOUR

4. RESULTS

4.1 CHARACTERISTICS AND DEMOGRAPHIC INFORMATION OF PARTICIPANTS

Thirteen semi-structured group discussion sessions were held. A total number of 39 physiotherapists participated in the semi-structured group discussions. They were all either currently working or had recently worked in an adult ICU setting. The mean age of the total group of participants was 30.7 (±8.73) years. The majority of participants were female (92.3%; n=36). Working environments differed by public sector and private sector ICU settings. Participants reported a wide range for ICU working experience from a minimum of one year to a maximum of 25 years of ICU working experience. Participants worked in more than one ICU at a time when the semi-structured group discussions sessions were held. Participants held undergraduate qualifications from various institutions and some had postgraduate qualifications. Table 4.1 summarises the differences in characteristics between junior and senior participants.

Table 4.1: Differences in Participant Characteristics and Working Environments

	Junior Physiotherapists (n=22)	**Senior Physiotherapists (n=17)**	**p-value**
Age (years) (mean ±SD)	24.45(1.54)	38.76(7.43)	0.00
Gender [n (%)]			
- Male	1 (4.55)	2 (11.76)	
- Female	21 (95.5)	15 (88.23)	
Health Care Sector [n (%)]			
- Public	14 (63.64)	9 (52.94)	
- Private	8 (36.37)	8 (47.06)	
Years of experience in ICU (mean ±SD)	2.36 (1.26)	12.76 (6.77)	0.00
Types of ICU in which Participants work [n (%)]			
- Cardiac ICU only	1 (4.55)	1 (5.88)	
- General ICU only	6 (27.27)	5 (29.41)	
- Surgical ICU only	0 (0)	1 (5.88)	
- Trauma ICU only	3 (13.64)	3 (17.65)	
- Cardiac and general ICUs	2 (9.09)	0 (0)	
- Surgical and trauma ICUs	1 (4.54)	0 (0)	

- Cardiac and trauma ICUs	1 (4.54)	0 (0)	
- All ICUs	8 (36.36)	7 (41.17)	
Postgraduate Qualifications [n (%)]			
- MSc Physiotherapy (field of cardiopulmonary physiotherapy)	0 (0)	6 (35.29)	
- PhD	0 (0)	1 (5.88)	
- Other	0 (0)	3 (17.65)	
- None	22 (100)	7 (41.17)	

Key: PhD = Doctor of Philosophy, MSc = Masters of Science

There was a significant difference in age and ICU working experience between junior and senior participants. Majority of junior participants worked in the public health care sector whereas there was an equal distribution of senior participants from public and private sectors. Other qualifications included one diploma in human immunodeficiency virus medicine, one diploma in animal sciences and one in equestrian anatomy.

Figure 4.1 illustrates the institutions where participants obtained their physiotherapy qualifications.

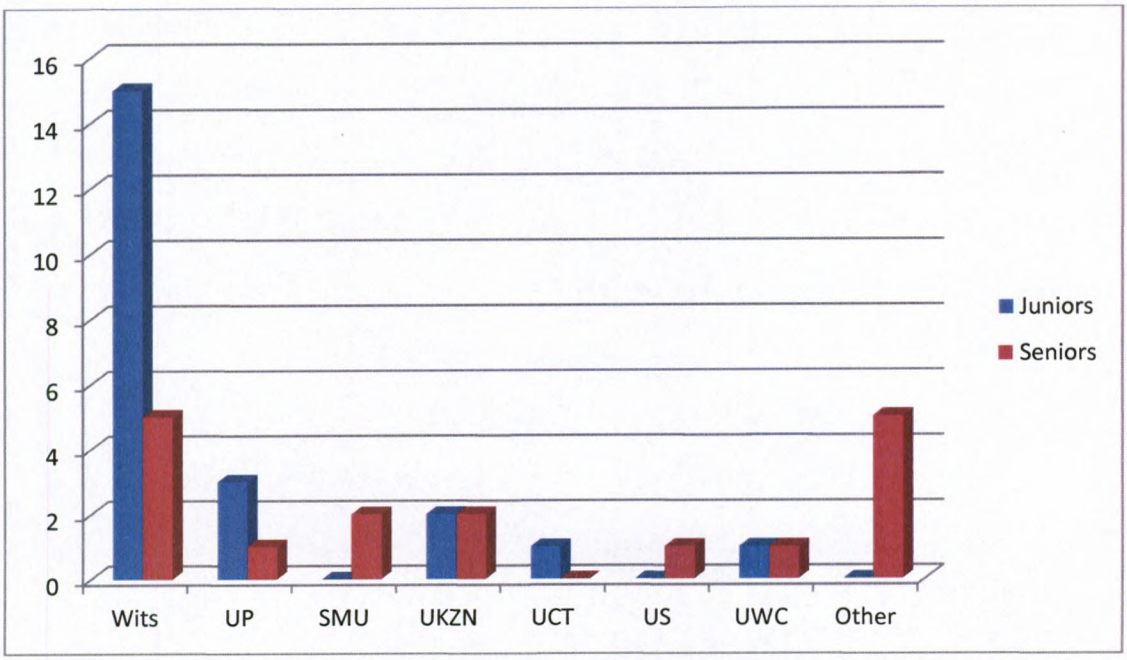


Figure 4.1: Institutions where Participants obtained their Physiotherapy Qualifications

Key: Wits = University of the Witwatersrand, UKZN = University of Kwazulu Natal, UP = University of Pretoria, SMU = Sefako Makgatho University, UCT = University of

Cape Town, UWC = University of the Western Cape, US = University of Stellenbosch.

Most participants obtained their undergraduate qualifications from Wits University.

Five senior participants qualified in the following foreign institutions: Seonam University (South Korea), The Tamil Nadu and Dr M.G Ramachandran [BPY, MGR] Medical University (India), Mangalose University (India), Rajiv Gandhi University (India), and Queens College Glasgow (Scotland).

4.2 QUALITATIVE DATA

Qualitative information was obtained by posing the same stimulus questions to each group.

4.2.1 Feelings about Interactions with Inter-Professional Team Members in ICU

The following stimulus question was posed to each group: "How do you feel about interacting with the inter-professional team members in the ICU where you are working?"

4.2.1.1 Responses from junior participants

Some junior participants felt positive about their interactions with the inter-professional team members in ICU, some had mixed feelings and others had negative feelings.

Positive feelings were expressed when the junior participants felt that focused patient care was a priority in the unit and that the nurses were knowledgeable about their patients: "*...one nurse per bed and there are more questions that you can ask about your patient and they know more about your patients than what the general ward [nurse] would know"* [public sector participant].

Helpfulness amongst the nursing staff in the unit contributed to positive feelings expressed by the junior participants: "*... the nurses are there, they want to help, and they ask you for advice on how they can carry on with the treatment throughout the day...*" [private sector participant].

Negative feelings were expressed when junior participants felt challenged by the ICU environment. Some of the junior participants felt negative feelings when the interaction with specific inter-professional team members was strained. This view was also expressed by a participant from the public sector: "*...there's a nice working relationship but you get to some of them and if the nurse is not so helpful then it makes it more difficult because you can't just pull another nurse to come because... they each have their own patient...*" [public sector participant].

Some felt negative feelings when they were reprimanded for breaking a rule. The type of ICU environment was noted to contribute towards negative feelings from junior participants about interactions with the inter-professional team: "*So it's much more stressful environment and the doctors obviously are much more specialised, and they have to be much more in control. I don't think they can be as relaxed within their team as they are with the other doctors*" [private sector participant].

Some participants expressed mixed feelings related to their interaction with inter-professional team members in ICU as it depended on which inter-professional team member they were dealing with: "*So sometimes in cardiac ICU the sisters aren't always as willing to assist because they don't know me as well as they know other physios"* [private sector participant].

Some felt mixed feelings when hierarchical structures had to be followed in interactions with inter-professional team members: "*They [doctors] just say, "Physio, okay check, mobilise, and... move on. They're [doctors] not very interactive or friendly...*" [public sector participant].

4.2.1.2 **Responses from senior participants**

Some of the senior participants expressed negative feelings about their interactions with inter-professional team members in ICU when they did not feel valued and their skill set was side-lined or not recognised within the team. One participant stated: "*Some of us are walking around with not just an honours physio degree [but] with postgraduate qualifications as well..." [*public sector participant].

Some senior participants expressed negative feelings when there was limited availability of professionals within the ICU. This was illustrated as: "*...when you can't have communication with the doctor...and you're pushed back from doing your best*

*that you could do for the patient in the ICU setting, it is very distressing" [*public sector participant].

Senior participants expressed positive feelings about their interactions with the inter-professional team in ICU when they felt good and satisfied with their role in the team: "*I think on a whole we have very good relationships with the nursing staff. We find them very helpful and they communicate quite effectively about how they feel the patient is doing. I think they also feel very positive about the impact that physio has on the patient"* [private sector participant].

Senior participants expressed positive feelings when they had established relationships with the professionals working in ICU: "*We have been very fortunate I think as we have built nice relationships; it always helps... to see the bigger picture and not just the physio part of the patient...*" [private sector participant]. The same participant went on to say: "*...because they really do want to have our input into what we are doing and we have been here for so long that actually I think they quite appreciate in most cases what we have to say, they may not always take our advice but they do appreciate what we have to say*" [private sector participant].

Senior participants expressed positive feelings when there was team work, and if other team members understood their role in the team and team members displayed helpfulness towards physiotherapists. One participant stated: "*...but on the whole everybody knows their role and we are asked to give input as and when is needed and if necessary we can always seek clarification and people are quite helpful"* [public sector participant].

Some senior participants expressed mixed feelings when they were undecided and feelings varied according to the type of professional they were interacting with: *"...it can be either negative or positive depending on how the other people relate to what you are trying to say or what your questions are. We interact certainly...with the nurses... that is important because without the nursing staff we wouldn't know what is going on"* [public sector participant].Some senior participants expressed mixed feelings when there were emotional influences in the way professionals treated each other such as moods, and bad attitude:"*...is usually more on a personality level. So if people just generally don't get along, that's the only time you'll have something negative*" [private sector participant].

4.2.2 Factors that Influence Communication with Inter-Professional Team Members

The following stimulus question was posed to each group: "What factors influence your communication with the inter-professional team members in ICU?" The responses were divided into factors that hinder (barriers) and factors that enable (facilitators) communication between physiotherapists and the inter-professional team members.

Table 4.2 summarises the responses from junior and senior participants regarding factors that influence communication with inter-professional team members in ICU.

Table 4.2: Facilitators and Barriers that Participants Experience during Communication with Inter-Professional Team Members in ICU

Themes	Codes	
	Junior Participants	**Senior Participants**
Facilitators	- Friendliness/familiarity with team members - Presence of team members in the unit - Positive attitude towards physiotherapy - Cohesiveness in the unit	- Friendliness/familiarity with team members - Positive attitude towards physiotherapy - Physiotherapist's positive attitude towards others - Physiotherapist's demonstration of evidence-based patient care - Listening skills - Willingness to work together - Mentoring of junior staff
Barriers	- Absence of team members from unit - Rotation of staff - Lack of interest in patient care - Physiotherapist's opinion being discredited - Lack of communication between doctors regarding patient care - Lack of professional etiquette - Personality types - Non-ICU trained staff	- Hierarchical structure in unit - Lack of communication among team members regarding patient care - Working in an unfamiliar environment - Inadequate utilisation of the ICU chart /clinical notes - Non-ICU trained staff - Personality types - Lack of professional etiquette - Overlapping scopes of practice - Perceptions of physiotherapy - Language barriers - Staffing levels in the unit - Rotation of staff

Some similarities were expressed by both groups of participants relating to facilitators and barriers to communication with inter-professional team members.

4.2.2.1 **Responses from junior participants**

4.2.2.1.1 Barriers to communication

Some junior participants found the busy schedules of the inter-professional team members resulted in them being constantly in a rush and thus hindered communication. At times clinicians may be absent from their post due to tea or lunch break commitments and due to other responsibilities in the unit. This was expressed to be a barrier in communication: "*They [nurses] see you come to see the patient...the physio is here, I'm not needed...They'll go to their friends in high care or something like that...*" [private sector participant].

Rotation of staff who work in the unit was noted as having an influence on communication with team members: "*...some of us have been in the same ICU for a while and the doctors are consistently rotating and the sisters also swop between day shift and night shift and then you'll get to know a whole shift of nurses and then they swop to night shift and then you have to start all over again*" [public sector participant].

Some junior participants found that when nurses showed a lack of interest in their jobs it posed a barrier to communication: "*Yes they are not really interested...it feels like sometimes, so you rather just do the job yourself than go and speak to them about something*" [public sector participant].

When some of the junior participants felt discredited or spoken down to, they felt it was a barrier to communication: "*When you try and talk to them they sort of speak at a level that is below what you would understand. I find that we know a lot more than they think we know with regard to just the general condition of the patient...*" [public sector participant].

The lack of communication of plans for patient management between doctors leads to uncertainty among physiotherapists regarding patient care: "*...got a number of doctors working with a patient, like you've got a trauma, you've got*

a neuro, you've got an ortho doctor. I sometimes find that between them they don't always communicate" [public sector participant]. Some junior participants found the manner in which professionals approached other professionals resulted in a barrier to communication. They listed a bad attitude and lack of professionalism as factors that hindered communication. One participant stated: "*So sometimes you can get on with some sisters in the ICU and then sometimes depending on personalities, you just clash...*" [private sector participant]. The same participant felt communication may be hindered by the type of day the other professional has had or their mood: "*...and then the next day you can get there and the same sister may be completely different. And it also depends I think on the days they have had...*" [private sector participant]. When messages were not relayed to the intended person it was noted as a barrier to communication.

Lack of display of professional etiquette amongst inter-professional team members was expressed as a barrier to communication: "*To be in a bad mood in front of a patient to me is unacceptable. That kind of behaviour I've...seen [it] in the doctors and nurses...*" [public sector participant].

Some junior participants expressed that conflicting personalities and personality clashes hindered communication. Another participant expressed that at times nurses' behaviour towards them could be the result of how doctors treated them or communicated with them: *"...because sometimes the doctor may shout at them for not doing something right...and then you go and then you [say]...let's mobilize a patient, [nurse responds]...oh no you can't do it..."* [public sector participant].

Under-qualified professionals or professionals not ICU trained and who work in this environment were found to hinder communication: "*In cardiac ICU I've experienced where I've asked a nurse to do something, and I thought she was ignoring me, but it's just because she had no idea what I was talking about. So it's just the lack of knowledge as well..."* [private sector participant].

4.2.2.1.2 Facilitators of communication

The more familiar the inter-professional team members were with the physiotherapist the more communication improved between them: "*I think it's like when we're just rotating to a different section then you don't know the doctors so it takes a while for you to actually get to know them...*" [public sector participant]. Some junior participants found that friendliness expressed to them by other inter-professional team members was a facilitator in communication: "*They always come around, they greet. They also like to know how the patient's doing, so they do make it easy for you to talk to them, because they ask you a question, and they check on how everything's is going...*" [public sector participant]. Another participant stated: "*If they are positive and they have more of a happy attitude, they're easier to work with compared to someone who isn't...* " [public sector participant].

Communication is facilitated when inter-professional team members are present in the unit: "*...they're there all the time especially the doctors and the nurses generally are by the patients...*" [public sector participant].

When the inter-professional team members were pro-physiotherapy this facilitated communication with them: "*...and if they don't see the value then they won't want to help you like as you get to the patient they'll chase you away but the one's that do see improvement in their patients throughout the day then they will be more willing to help...*" [public sector participant].

When top management displayed unity and cohesiveness within the unit this was expressed as a facilitator to communication: "*...from the top physios, doctors and nurses, they [are a] very close team [that] works together, which filters down to the rest of us...*" [private sector participant]. Fostering and building relationships between professionals was found to facilitate communication. Easy access to doctors was found to facilitate communication: "*...they are easy to phone which is nice...*" [private sector participant]. An attitude of willingness to learn displayed by other members of the team was found to facilitate communication: "*They [nurses] want to be there and help you and to see what you're doing and your advice...*" [private sector participant].

4.2.2.2 Senior participants' responses

4.2.2.2.1 Barriers to communication:

Similar to junior participants the seniors felt that hierarchical structures made communication more difficult amongst inter-professional team members in the ICU: "*Doctors have the feeling of being like a hierarchy. The specialists are harder to approach...*" [public sector participant], and another participant expressed similar sentiments:"*[Doctors] not approachable, yes it makes things quite difficult*" [private sector participant]. Another participant felt like a nuisance to consultants: *"All the specialists are fairly senior in their field so I feel sometimes a nuisance coming to tell them..."* [private sector participants].

When clinicians have differing opinions on patient management that are not discussed within the team, the senior participants found that this could form a barrier in communication. Another participant felt that when clinicians in leadership roles couldn't agree on patient management with other clinicians this resulted in a barrier in communication and eventually lead to deterioration in patient care: "*She's in charge of the nursing staff. I think from that point of view sometimes patients really are very ill and yes, they still want to be sitting on a chair and a lot of the times a patient crashes and they eventually pass away...*" [private sector participant].The busy schedules of doctors was expressed as a barrier to communication.

Clinicians working in an unfamiliar environment makes communication with clinicians in those unfamiliar environments difficult: "*...it is more the... locum nurses that don't quite know what to do in ICU.*" [public sector participant]. Another participant also expressed that when nurses were unfamiliar with the ICU environment they posed a great danger to the patient: "*The patient was not even breathing. And she [the nurse]...didn't quite know what to do and I actually had to get the unit manager*" [private sector participant].

When physiotherapy clinical notes on the patient's chart were not read by other inter-professional team members it was expressed as a barrier to communication.

Messages not being relayed to other inter-professional team members were found to hinder communication: "*Then you ask the nursing sister because she is going to see the doctor please can you find out if we can mobilize the patient and they don't...*" [public sector participant].

Unhelpfulness was expressed as a communication barrier: "*...and they don't want to help they see you coming and they go to the tea room because they don't deem it is important to help the patient together...*" [private sector participant].

Similar to junior participants, senior participants felt that differing personalities and emotions hindered communication amongst inter-professional team members: "*Their moods and...their personalities can influence....whether they [are] approachable or not. You know some...are much more approachable than others...*" [private sector participant]. How emotions were expressed by professionals was seen as a possible barrier to communication. Another participant expressed the importance of interpersonal relationships: "*...interpersonal skills and building a relationship...understanding the different personalities and how best to deal with them...*" [private sector participant].

Professionals approach or attitude towards other professionals can be a hindrance to communication if it is negative. Another participant felt intimidated by the nurses' strong personalities and their ownership approach to the patient. Overlapping scopes of practice with certain inter-professional team members can form a barrier in communication if left unaddressed, with specific reference to overlapping scope of practice with occupational therapists (OT): "*Now for example the OT...when they are there in ICU it can cause a bit of friction but if the understanding of the scope of practice is good then the communication is much easier...*" [public sector participant].

Inter-professional team member's perception of that specific physiotherapist plays a role in the communication: "*...their perception of you and your opinion and respecting you and your opinion for what it is worth*" [private sector participant].

Language barrier was expressed as a barrier to communication: "*So there is a bit of a language barrier more with the nursing staff than the other paramedics and other allied health [professionals]...*" [private sector participant].

Exhaustion experienced by doctors was noted as a barrier to communication: "*I just think maybe the doctors are getting more stressed and have less time to stand and chat...*" [private sector participants]. Another participant expressed insufficient staffing in the unit as a barrier to communication: "*...my opinion is that we don't have the registrars, we don't have the interns, we don't have the people you could go to and they would address the issue and take it higher up...*" [private sector participant]. This point was further emphasized by this comment: *"I think they are more in a hurry, they are more stressed, they are stretching themselves between...other hospitals and this hospital..."* [private sector participant].

Rapid staff turnover in ICU was noted by senior participants as another barrier to communication.

4.2.2.2.2 <u>Facilitators of communication</u>

Some senior participants found that familiarity with clinicians made for easy communication.

When consultants take physiotherapy opinion into account, it improves communication: "*...I would like to say in the Burns Unit the consultant does actually ask our opinion and has on several occasions held off an extubation because we said the patient wasn't ready...*" [public sector participant]. The longer the physiotherapists was working at the hospital this created familiarity which was expressed as a facilitator to communication: "*...So we [physiotherapists] are lucky, a lot of the [staff] we work with, we've been around a long time and we work closely with them so they value our opinions and that's positive...*" [private sector participant].

Physiotherapists' positive and respectful approach to others improved communication in the ICU team*: "...it's also us saying we understand your*

point of view however we like to do this, where can we meet?" [private sector participant].

Physiotherapists who display evidence-based knowledge of patient care towards other members of the inter-professional team found this to facilitate communication within the team: "*So all of those facilitates good communication...when we make decisions and we say we want to do something it is based on...evidence and experience and knowledge and when it comes from that [staff] respect that..."* [private sector participant].

When professionals share ideas about patient care this was expressed as a facilitator of communication between team members: "*I think another thing that is an important part of communication is to make sure that it remains a two way street.."* [private sector participant], and another participant expressed: "*You know if you get to a nursing staff member and they say we can't mobilize this patient, I always say but why? And then we will come to an agreement between their reasons for not doing it and my reasons for wanting to do it. So it's not like we are seen as this force that comes in and we do stuff and we walk out again"* [private sector participant]. Another participant expressed listening to other professionals as an essential part of effective communication. Participants expressed that when physiotherapists were willing to work as a team and were involved in the ward rounds and display knowledge of all the patients in the unit, this fostered good communication between the inter-professional team members: "*You know if I'm not there then [my next in line] does it but basically that involves for us to do rounds, check up all the patients, allocate patients to physios so for me I know all the patients and I know what's going on with them so that facilitates communication..."* [private sector participant].

Ensuring that junior staff receive training and mentoring from senior staff while working in ICU was expressed as a facilitator of communication: "...*we really are committed to everybody having a good knowledge base and so there is always somebody around to ask so if the juniors aren't sure, they can find somebody who is more senior and ask us and we do a lot of in service training."* [private sector participant].

4.2.3 Ability to Perform Patient Assessment and Treatment in ICU

The following question was posed to each group: "What factors related to the inter-professional team members, facilitate or hinder your ability to perform patient assessment and treatment in the ICU?"

Table 4.3 summarises the facilitators and barriers that junior and senior participants experience when performing patient assessment and treatment in ICU.

Table 4.3: Factors that Influence Participants' Ability to Perform Patient Care in ICU

Themes	Codes	
	Junior Participants	**Senior Participants**
Facilitators	- Discussion regarding patient presentation - Sharing of knowledge - Consideration of others - Team work approach to patient care - Understanding the role of physiotherapy - Being open to suggestions - Good time management - Mutual trust	- Attitude - Work ethic - Team work approach to patient care - Communication regarding patient care - Orientation of new staff - Staffing levels in unit - Leadership role of unit manager - Staff level of experience - Continuous professional development - Professional conduct
Barriers	- Attitude - Past experiences of physiotherapy - Lack of equipment - Unfair demands on physiotherapy service - Being dismissive to new ideas - Hierarchy in unit - Poor time management - Non-ICU trained staff	- Non-ICU trained staff - Attitude - Staff absence - Past experiences of physiotherapy - Staff fatigue - Lack of trust

Some similar themes were noted by both junior and senior participants.

4.2.3.1 Responses from junior participants:

4.2.3.1.1 Facilitators of patient management

When the opportunity for discussion of patient condition was created in the ICU, this was found to facilitate treatment of patients: "...*watch out for this and this, just be careful, even the nurses would...tell you that. A little bit of*

advice. Sometimes also the doctors come around and they give you a bit of history that...you didn't find in the file" [public sector participant].

When more experienced team members share their knowledge of patient handling with juniors, it was expressed as a facilitator of treatment of patients: "*You have a head injury, you have external fixator, you have lines, but they [nurses] have had experience in this, so they can help you and say okay, let's put this here, do this, put that there. That's what makes it easier."* [public sector participant].

When nurses were willing to work together with physiotherapists during a patient treatment session this facilitated patient care. Another participant explained that nurses were helpful with patient assessment and treatment if a trade was offered for their assistance: "*...when they want to turn a patient over...I think they do tend to help you a bit with your treatment..."* [public sector participant].Team work amongst nursing staff was expressed as facilitator of patient treatment.

Another participant also expressed that the nurses who had a better perception/knowledge of physiotherapy facilitated treatment of patients.

Willingness of team members to be flexible in the way that they work in ICU and to consider recommendations made by others was noted to facilitate patient treatment. Being able to accommodate other inter-professional team members in the physiotherapist's treatment time was found to facilitate treatment: "*...occupational therapists sometimes, they'll treat with us or sometimes...they'll wait for us to finish and then come back and treat."* [public sector participant]. Another participant expressed: *"I find that if I was here with a patient and then the speech [therapist] comes, they'll leave and wait for me to finish..."* [public sector participant].

Optimal use of time in the unit was found to facilitate patient treatment: *"I think if the nurses are ready waiting for you and then you...go there and you...get it [treatment] done"* [public sector participant].

Familiarity and trust between nursing staff and physiotherapists working in the unit was found to facilitate patient treatment: *"...almost like a trust because they [nurses] know some physios...everyone knows there are good physios and there are bad physios and I think that reputation also comes into it [patient management]..."* [public sector participant].

4.2.3.1.2 Barriers to patient management

When the attitude of team members was unhelpful it was expressed to hinder the treatment of patients. A negative attitude of inter-professional team members was expressed as a hindrance of patient assessment and treatment: "*...their [nurses] attitude...if they [nurses] like reluctant... then it does make our [physiotherapy] job much more difficult...'*[private sector participant]. When professionals approach each other with a negative attitude it was considered a hindrance in patient treatment.

The negative perception of physiotherapy from other team members informed by their past experiences of physiotherapy was expressed to hinder the treatment of patients.

A lack of equipment in the ICU was found to hinder treatment of patients by the physiotherapists: *"...like walking frames in ICU. Those machines that sometimes the IV drips connect to, sometimes some of them are a bit faulty, or missing, or it's difficult to disconnect them..."* [private sector participant].

When mature staff members are set in their ways and refuse to adapt new innovations in treatment this can hinder patient treatment: "*...for example...doing lavage while suctioning...it was back in the day they [nurses] used to lavage every single patient while they [nurses] [would] suction and...more experienced sisters are the ones who are putting 10ml's down at a time...[physiotherapist say] 'you know don't you want to maybe just put in a little bit less [saline]...*" [public sector participant]. Another expressed that older professionals did not welcome input from the younger professionals which could hinder treatment. Another participant expressed when nurses were not open to new ideas this hindered patient treatment: *"...they're [nurses] not open to new ideas...[recent] changes in research...*" [public sector

participant]. While another participant expressed that when nurses could not understand variations in physiotherapy treatment this hindered patient management: "*...we'll [physiotherapists] come in and mobilize the patients that's on a ventilator instead of doing chest physio...the nurses then can't understand why we're not percussing every single patient in the ICU...it comes [down] to experience."* [public sector participant].

When participants felt that team members made demands that physiotherapists could not perform, this lead to a barrier in patient treatment: "*...all they[nurses] have to do is a sheet transfer back to bed, they'll[nurses] be like no you're going to come back and do it..."*[private sector participant].

When physiotherapists had to follow hierarchical structures during treatment this was found to lead to interruptions in patient treatment, thus hindering patient care: *"...we [physiotherapists] need to take a backseat and stop what we are doing when the doctors are there or when the nurses want to take blood or something..."* [private sector participant], and : *"The doctors, I think they are a bit interruptive..."* [public sector participant].

Poor time management by members of the inter-professional team in ICU was noted to hinder patient management: "*There are times though that the nurses...don't do the blood gases on time...before you're...allowed to treat them [the patient], you have to wait for them [the nurses] to take... the blood gas."* [public sector participant], and: *"...we [the ICU management] have it here that the nurses suction but they[nurses] take forever to set their station up"* [public sector participant].

When the nurses were not familiar with the ICU that they were working in that was found to hinder patient treatment: "*...when the suction port wasn't working and they [nurses] didn't even know what a portable suction was. The patient needed to be suctioned...Every single nurse that I asked couldn't help me get a portable [unit]...it's how well they know their environment..."* [public sector participant].

4.2.3.2 **Responses from senior participants:**

4.2.3.2.1 Facilitators of patient management

An attitude of respect from team members was expressed as a major facilitator to patient treatment: *"There are certain doctors that are very easy, they're very comfortable, and they respect you."* [private sector participant]. Type of personality and work ethic were noted as facilitators of patient management in ICU.

A teamwork approach to patient care, when re-enforced by team leaders in the unit, was found to improve patient treatment: *"...you will come into the unit and you will find your patient in a chair because the sisters...also...mobilize the patients. And if the doctor wants the patient in a chair [if] they [nurses] can do it without you then they [nurses] will do it without you. And when we [physiotherapists] don't have [co-operation form nursing staff] we go to her [unit manager] and I say to her I don't have co-operation please help me and they will help. She [unit manager] will get everyone working together to help."* [public sector participant].

Building of relationships between inter-professional team members were found to facilitate patient assessment and treatment and through communication and discussion of patient care, relationships are built between professionals :*"...It's about the relationship with the doctor and also discussing the patient with the sister so you have common...goals..."* [private sector participant]. Another expressed that open communication helped establish a common goal that facilitated patient treatment and assessment.

Proper orientation of new staff in the unit and new staff shadowing experienced staff during orientation was found to facilitate patient treatment.

When an ICU was adequately staffed, this was expressed as facilitator of patient treatment and assessment: "*I think with neuro-surgery high-care the nurses often complain about the fact that they are short staffed...it will be one professional nurse and one auxiliary nurse that nurses four patients whereas in main ICU it is one nurse to one patient."* [public sector participant].

Unit managers that value and enforce evidence-based practice in their unit was expressed to be a facilitator of patient management: *"...but I feel if the unit manager would stand her ground and say 'if there is an instruction for a patient to go into a chair they must go into a chair it is your [nurses] responsibility you [nurse] help the physio.'."* [public sector participant].

The level of experience of nurses and their exposure to different ICU work environments was noted to facilitate patient management: *"...I find private [employed] nurses...a lot better trained and a lot more willing to assist."* [private sector participant]

Another participant expressed that more experienced staff had a better understanding of the staff code of conduct and each team member's scope of practice in ICU.

Academic activity amongst professionals in the ICU was expressed to be an important facilitator to patient treatment: *"...and earlier in the year they [physiotherapist] did in-service training on mobilization and how to be careful with your own back and how to mobilize patients and then I [physiotherapist] was in a car accident and I couldn't mobilize my patients but because all the nurses had just done in-service training it was...much easier and now they [nurses] so much more professional at mobilizing because they know how to do it properly..."* [public sector participant].

Professional conduct of team members was expressed as a facilitator to patient treatment: *"...I [physiotherapist] really need to see this patient now, then they [nurses] mostly happy to accommodate us so also the ground rules are clearly understood from both sides. They [nurses] know they can't...go and have tea and do whatever when we [physiotherapists] are there."* [private sector participant]. A senior participant expressed that when junior participants were allowed only to treat patients in ICU in the presence of the nurse, it ensured patient safety which was expressed to facilitate patient treatment.

4.2.3.2.2 Barriers to patient management

When nurses were not ICU trained this was found to hinder patient treatment. When there was a bad attitude resulting in a lack of professional approach to patient care this formed a barrier to patient treatment: "*...we have had an ICU charge sister at ...who used to come in and [I would] say 'right, I need to mobilize this patient' and she'd say '...no...she has had a bad night no, not today.' And the doctor wants the patient mobilized and you need help and they will...refuse...*" [public sector participant]. The attitude of the inter-professional team members was found to be an important factor that effects patient treatment and assessment.

Absence of nurses from the unit hindered patient treatment. Another participant expressed similar sentiments that when protocol was not strictly followed this formed a barrier in patient treatment: "*...they [nurses] are not allowed to go and have tea... [especially if]...the unit is very busy...*" [public sector participant].

Prior experiences and perceptions of physiotherapy by other team members can hinder patient treatment.

Another participant expressed that other physiotherapists, prior to her working in the unit, would look for reasons not to treat the patient: "*...when I [physiotherapist] first came to ICU they [nurses] said most physios would come listen to the chest and say 'no indication for chest physio.' So they [nurses] didn't actually see the point [of physiotherapy] but if people [physiotherapists] who were [there] before...were not interested in doing the physio...the nurses...assumed everybody doesn't want to do [physiotherapy]...*" [public sector participant].

Fatigue experienced by the nursing staff may hinder patient assessment and treatment: "*...and the patients are nursing staff members responsibility for that 12 hour shift, they are responsible for that patient so they are a bit fatigued sometimes to help us [physiotherapist], for me sometimes it's easier just to say 'guys don't worry I can see you are busy I'm going to start and I'm going to carry on, on my own'...*" [private sector participant].

Lack of trust in physiotherapists' level of experience by nurses in ICU was noted as a barrier to patient management: *"...they [nurses] will say to my junior physio 'we are not going to do this.' "* [private sector participant].

4.2.4 Physiotherapists as Members of the ICU Team

The following question was posed to each group: "Do you see yourself as an important member of the ICU inter-professional team? Explain your answer."

Both junior and senior participants felt that they played an important role in the inter-professional team responsible for patient care in ICU and their responses are summarized in Table 4.4.

Table 4.4: Participants' Views Regarding their Role in the Inter-Professional Team in ICU

Themes	Codes	
	Junior Participants	**Senior Participants**
Essential service	- Adequate training - Satisfaction with service - Evidence-based practice - Cost saving	- Cost saving - Confidence placed in service by others - Evidence-based practice - Continuous professional development
Patient-centred care		- Improved patient outcomes - Holistic approach to patient care - Advocacy for patient

4.2.4.1 Responses from junior participants:

4.2.4.1.1 Essential service:

Junior participants felt that they were an essential service in the ICU and that most patients needed physiotherapy service in ICU. This was noted to influence patients' duration of stay: *"...we [physiotherapists] play an important role with getting the patient out of there [ICU] ..."* [private sector participant]. Referral to physiotherapy service when dealing with complex patients in ICU was noted as a supporting factor to the value that other professionals think physiotherapists add to patient management in ICU: *"... [nurses] say 'the patient had physio this morning but now the sats are dropping...can you [the*

physiotherapist] please...come and help to suction,' or 'do something,' so they [nurses] know we can actually make a difference." [public sector participant]. The participants felt that they were an essential service in ICU due to them seeing the patient over a longer time period.

Patients' value the physiotherapists' input and give positive feedback and express gratitude for the treatment: *"...have the odd one or two patients that actually come back and say thank you and will actually thank you for – even it's the smallest thing that you've done..."* [private sector participants]. Feedback received from patients after their discharge from ICU supports the importance of physiotherapy during ICU stay: *"...all of that but also according to mobilizing the patient we've noticed [that] us being more proactive with mobilizing in ICU makes their rehab in the ward so much easier and that's some feedback we've got from the mobilizing we've done in I.C.U. So yes I think we do play a very important role in I.C.U..."* [private sector participant]. Physiotherapists spend more individual time with the patients and ask them questions on their conditions.

Participants felt they received adequate training in their field which made them work safely in ICU: "...*we [physiotherapists] train and we have a good knowledge of the [ICU] setting and of vitals and normal [ranges] so that we are safe with our patients..."* [public sector participant].

Junior participants felt that they contributed by educating the patients on their conditions and the role of physiotherapy in their management: "...*you [physiotherapist] take the x-ray and you show them [patients]'this is what's broken,' or 'this is what's wrong,' or 'this is what's wrong with your chest."...this is what our role is.' So they understand..."* [public sector participants].

Physiotherapy is important in ICU because interventions are evidence-based: "*...the literature shows that what we [physiotherapists] do is effective and we [physiotherapists] do have an important role to play in the ICU."* [public sector participant]. There is evidence in the current literature that physiotherapy is effective and they felt that meant we were strong members of the ICU team. Physiotherapists' application of clinical reasoning in patient assessments was

noted to support their role in the inter-professional team: *"...we [physiotherapists] look more detailed at the X-rays...so often we pick up other things [that were initially missed] but that's why [it helps to be working in] a multidisciplinary team"* [public sector participant]. The physiotherapists felt they were the doctor's second pair of eyes due to their skills in clinical reasoning and level of knowledge: *"...sometimes...we're the ones that pick up that the patient has got a pulmonary embolism or has...an un-drained haemo/pneumothorax...I really do think that we do play an important role..."* [public sector participant].

The value that other members of the team put in the quality of physiotherapy service delivery to patients in the unit was noted as support for the important role that physiotherapists play in the team. By preventing the escalation of diseases or complications that patients may develop the participants felt that they were reducing hospital costs and length of stay for the patients.

4.2.4.2 **Responses from senior participants:**

4.2.4.2.1 Essential service:

The role that physiotherapists play in the prevention of patient complications was noted as support for their important role in the ICU team: *"...it's so important from a post-op point of view to get the patient breathing [deeply] and coughing and mobilizing as soon as possible..."* [public sector participants]. By shortening the length of stay in the ICU for the patients, the participants felt they had a role in cost saving for the patients. Another participant expressed that as part of the ICU team, the physiotherapist played a valuable role in reducing time spent in hospital. Participants felt that physiotherapists played an important role in early mobility in the ICU: *"...quite honestly if we [physiotherapists] weren't there the patient would still be in bed for 24 hours..."* [private sector participant].

Inter-professional team members display high confidence in physiotherapists: *"...the fact that people [inter-professional team members] think they can leave you with a patient and you do whatever you need to do...they [nurses] will call you if they extubated and the patient is not coping they will actually call to say*

'please come back before we try extubating again and see if...the patient might cope instead of re-intubating'..." [public sector participants].

The evidence-based nature of the profession supports the importance of physiotherapy in the ICU team. Physiotherapists are the big drivers behind early mobility in the ICU and therefore are very important team members.

Physiotherapists are keen to use new technologies and educate inter-professional team members in the ICU: *"...in our practice we...say '...we are coming through, there is the power breather, let's start using it. Let's try it' and we committed to in service training so we want to be at the forefront...the early mobility and they [nurses] won't do it without us."* [private sector participant].

Physiotherapists spend time with the patient and apply clinical reasoning to investigative procedures and are therefore more likely to identify red flags: *"...often identify problems...when you [are] working so intimately with the patient, that problems may not have been picked up earlier on."* [public sector participant].

4.2.4.2.2 Patient centred approach:

Senior participants felt they improved the patients' condition therefore improving their quality of life: *"... [physiotherapists have] a role to play in the rehabilitation and the patient getting better and if...we don't play our lifesaving role properly, the patient is at risk as well...there's a lot that we can do well and we do well...So yes definitely, we are important."* [public sector participant].

A participant felt that they were more than chest physiotherapists in the ICU and that they managed the patient holistically. Participants felt that physiotherapists play a pivotal role in planning the patient's management and progression of treatment. Being an advocate for patients and their families was expressed by senior participants as support for the importance of the physiotherapist in the ICU team:*"...being the communication network between the patients families and the doctors...in terms of further patient care*

decisions [that need to be] made and...the family [and] the patient doesn't understand that kind of thing." [private sector participant].

4.2.5 Factors that Contribute towards Planning of Patient Care in the ICU

The following question was posed to each group: "What factors facilitate or hinder your ability, as an important member of the ICU inter-professional team, to contribute towards planning of patient care in the ICU?"

The responses were separated into factors that ease (facilitators) and hinder (barriers) the planning of patient care in the ICU. Table 4.5 summarises the facilitators and barriers experienced by participants in relation to planning of patient care in ICU.

Table 4.5: Factors that Influence Planning of Patient Care in ICU

Themes	Codes	
	Junior Participants	**Senior Participants**
Facilitators	- Screening of patient suitability for physiotherapy - Consideration of physiotherapist's opinion - Clinical reasoning - Communication between team members - Positive attitude towards physiotherapy - Patient management - Teamwork approach to patient care	- Established relationship with other team members - Teamwork - Communication between team members - Clinical reasoning - Confidence
Barriers	- Hierarchy in unit - Rapid patient turnover - Lack of communication within team - Lack of patient funds - Negative perception of physiotherapy - Reluctance from patient - New physiotherapy skills not acknowledged	- Ignorance regarding role of physiotherapy - Unhelpful attitude - Lack of equipment - Unclear notes on ICU chart - Physiotherapy notes not read - Rapid patient turnover

There was some similarity in themes raised between the groups of participants which are further described below.

4.2.5.1 **Responses from junior participants:**

4.2.5.1.1 Facilitators

When participants were given the freedom to screen patients for contra-indications and use their clinical reasoning to provide safe management of the patient, they felt that this facilitated planning of patient treatment. Another participant expressed that being able to screen patients that are appropriate for physiotherapy management facilitated planning of patient management: "*... we get there in the mornings once we've screened we do say 'okay these 3 patients those are checks, that one we'll probably be able to mobilize, this one we're going to need 3 physio's for' and we'll plan the day and then we work from there and 'that one's going to go on the tilt table in an hour, we'll meet back here at 9 o'clock and mobilize'...we do our own planning...we do have our own [ward] round...*" [private sector participant]. Another participant expressed that when their clinical reasoning or opinions were considered for patient management that facilitated planning of patient treatment. Another participant expressed it would be favourable if physiotherapist were allowed to make the decisions using their own clinical reasoning.

Ward rounds were expressed to be a great facilitator of planning of patient management because ward rounds made open communication possible among professionals: "*...being with the doctors and the dieticians you can get an idea of where everyone stands with the patient and you get...a bigger picture of the patient...you get more info from the doctors...*" [public sector participant]. Another participant expressed that when nurses passed on messages between inter-professional team members that facilitated planning of patient management. A participant expressed that when physiotherapists used the clinical notes well this facilitated planning of patient management: "*That's why the notes are so important to see...what everyone is doing, if it's [patient progress] on the right track...*" [private sector participant]. Another participant expressed that when the inter-professional team members included patients in the planning of patient management this facilitated the planning process: "*I spoke to the doctor and the doctor, myself and the patient discussed the issue and then she [the patient] was more willing to move forward...*" [private sector participant] and: "*...the doctor...phoned the old age home to check whether they'd be willing to help, and they were. And*

just from that the patient was up and about more easily, more compliant to the exercise." [private sector participant].

Another participant expressed that when the physiotherapist could refer to other health professionals for their input, that facilitated the planning of patient management: "*...then we call, there's an orthotist...he...comes and he does the whole measure for the crutches...He also provides the toilet seat raises."* [private sector participant]. Another participant expressed similar sentiments: "*...then we're [physiotherapists] involved in the planning...suggest to the doctor to refer to OT [occupational therapist]..."* [private sector participant]. When the doctors reached out to the physiotherapist for their input that was considered to facilitate planning of patient management. Another participant expressed when doctors took the physiotherapists input into consideration this facilitated the planning of patient management.

Another participant expressed that when other members of the inter-professional team were supportive of physiotherapy, this facilitated planning of patient management: "*...the doctor said '...you [the patient] need physio, then you get [to] them [the patient], [and] they're like I've been waiting for you..."* [private sector participant], and: "*Some doctors will come to you and say 'what is your plan with this patient?' '...what do you think you are going to be doing with this patient?'..."* [public sector participant].

A participant expressed that when physiotherapists displayed clinical reasoning this facilitated planning of patient management. Another participant expressed that involving the entire inter-professional team gives them a better position in which to plan patient management*: "...get the whole team involved with the OT, with the dietician, with the speech [therapist]..."* [private sector participant].

4.2.5.1.2 Barriers

The high turnover of patients in the ICU made it difficult to plan patient management. A participant expressed that being busy with high patient volumes in ICU hindered the ability to attend ward rounds and to

communicate effectively with inter-professional team members regarding planning of patient care.

Participants felt that when a patient exhausts his/her medical aid funds for further treatment, in relation to private health care, this was a major barrier to planning of patient management: *"...we can't plan really; you're [physiotherapists] stuck because they're going to go home, they're going to lie in bed. When you see them in three months' time or in a month's time, they [the patient] are going to have regressed..."* [private sector participant]. Planning of patient management is hindered when a patient is unable to afford outpatient follow up treatment. The distance that some patients had to travel to receive continued treatment after discharge formed a barrier in planning of patient management. When a patient's family was unable to assist them at home or to do further treatment this was expressed as a barrier in planning of patient care: *"...but there's also no one at home to look after the patient to assist with rehab or even moving [around] at home..."* [public sector participant].

A patient's negative perception of continued physiotherapy after discharge was seen to be a barrier to planning of patient management: *"...they [the patients]...want to go home. They [patients] don't want to go to another rehab [facility] and then go home..."* [private sector participant]. Another participant explained when patients do not value physiotherapy this was expressed as a barrier in planning of patient management. Another participant expressed that a patients prior experience with lower quality physiotherapy can be a barrier to planning of patient management.

Perception of inter-professional team members is also patient dependant: *"...we can all be there, physio, OT, and the patient's just not willing to do anything...hindering as well to our [patient] management..."* [private sector participant]. A participant expressed that when a patient is reluctant to give consent for treatment that forms a barrier to planning of patient treatment *"...you [physiotherapist] have to get their consent, and they [patients] sign this, and you have to explain about medical aids and the fees involved, if they have questions they're allowed to ask, and with all of that, they [patients] start thinking and they become reluctant..."* [private sector participant].

Another participant expressed when the inter-professional team members in ICU were not open to new scopes of practice of physiotherapists such as involvement in weaning patients from mechanical ventilation, this hindered planning of patient management.

4.2.5.2 **Responses from senior participants:**

4.2.5.2.1 Facilitators

When the inter-professional team members, especially the nurses, are familiar with the physiotherapist and their scope of practice then this was found to facilitate planning of patient management. Another participant expressed that when there was a relationship established between the inter-professional team members and the physiotherapists that this facilitated planning of treatment: "*...when I make certain comments, it is taken seriously. So I think it's more the experience...*" [private sector participant]. Another participant expressed that when professionals were familiar with each other this allowed for smooth planning of patient treatment: "*...boils down to communication and relationships and co-operation and building relationships with the people...that you work with to get the best out of them to co-operate with you...*" [private sector participant]. The duration of time that the physiotherapist had worked with specific doctors in the ICU, facilitates planning of patient care.

Teamwork was expressed as a great facilitator to planning of patient treatment: "*...so between the unit manager, the doctors and me, somebody is going to remember to say 'we need to assess for rehab' and then we will get the rehab team in to come and assess [the patient]...*" [private sector participant].

Open communication and screening of patients, used in combination when planning patient management, was seen to facilitate care When the physiotherapist felt that a certain treatment would benefit a patient, they initiate communication around the topic with the inter-professional team members: "*We contribute in that we will ask the question and we will push the*

question and...we know the patient needs to get up...it depends on the doctor, it depends on what the orders are, it depends on the patient..." [private sector participant]. Another participant expressed that when the physiotherapist takes initiative to engage in dialogue with the doctors this facilitated planning of patient treatment: "*...deciding when to initiate rehab and then also discussing with the doctors...can the patient go home, when can the patient go home and should the patient go for rehab [first]. It is more...us going to the doctors and...informing them that this is our plan for the patient as opposed to the doctors coming in and asking us what would the plan be...'*[private sector participant]. Easy access to open communication lines, for example telephoning the doctor, facilitated planning of patient treatment. Problem solving with the inter-professional team members to ensure that equipment is used for all patients was found to facilitate planning of patient treatment. When open communication was maintained between physiotherapists and doctors this facilitated planning of patient management: "*It doesn't matter if you phone them [doctors] they always take the call, even if they are operating we'll pass the message via the anaesthetist...we have good communication with them..."* [private sector participant].

When patients needed to be progressed in treatment, physiotherapist's clinical reasoning was paramount. When physiotherapists used their clinical reasoning to ensure patient safety in the team this facilitated planning of patient management When physiotherapists were well trained and made valid scientific claims this fostered trust from other professionals: "*...if you want to make decisions and you want to give input, it's got to be valid and it comes back to that knowledge and training base..."* [private sector participant]. When clinical reasoning was used to screen whether patients would be appropriate for certain interventions this was found to facilitate planning of patient management: "*...[physiotherapists]decide if they [patients] are stable or not...if they [doctors] have a concern we [physiotherapists] are not treating they [doctors] will come to us and ask why..."* [public sector participant]. Another participant expressed that when they were given the opportunity to use their clinical reasoning to screen patients in the ICU, this facilitated planning of patient treatment. When progression of patient treatment in the ICU was up to the therapist, this was found to facilitate treatment: "*...progression is up to us,*

you know we do as much as we can within the limits of what we can..." [private sector participant].

When physiotherapists spoke up during ward rounds this was found to facilitate planning of patient management: "*...consultants act differently...on a ward round they will ask as well 'what do you think?'...you [physiotherapists] can actually tell them what you think what your plan is [for patient treatment]..."* [public sector participant]. Another participant expressed that when physiotherapists were bold and outspoken that this facilitated planning of patient management: "*...if we don't stand our ground and if we don't tell the doctors what the plan should be for the patient then they just make the decision without us..."* [private sector participant].

4.2.5.2.2 Barriers

A participant expressed that when professionals were not knowledgeable about physiotherapy that this hindered planning of patient management. Another participant explained that when the scope of practice of physiotherapists was unknown to the team this hindered planning of patient management: "*We [physiotherapists] generally won't be consulted when it comes to ventilation and the safety of extubation...They [doctors] do involve us when it comes to mobilizing..."* [private sector participant].

Another participant expressed that when doctors dictated instructions that this hindered planning of patient treatment: "*...he [doctor] decides the patient is going to have physio BD [twice a day] and he [doctor] says the patient is going to have an incentive spirometer and we [physiotherapists] don't really get a say...but I think it is the physio's fault for allowing it to happen..."* [private sector participant]. When progression to rehabilitation institutions was decided upon by the doctor, this hindered planning of patient treatment: "*...rehab...is always agreed on by the doctor. We [physiotherapist] might be lucky enough that the doctor will come to us and say 'do you think this patient is ready for rehab?"* [private sector participant].

When nurses were unwilling to assist this was found to hinder planning of patient management: "*...we [physiotherapists] are also very hindered...if they [nurses] are not going to help us to get all the drip stuff off and put onto a drip stand so we can mobilize the patient further, we have got a problem, big problem, if they [nurses] are not going to help us to mobilize the patient and it is unsafe for us [physiotherapist] to mobilize on our own...*" [public sector participant].

Lack or short supply of equipment in the ICU hinders planning of patient treatment and compromises patient safety: "*You [physiotherapist] will get one apron for the day so you will treat patient X and then you will go to patient Y and then to patient Z and only when there is a patient in isolation will there be aprons hanging over the door...also you use [the mask]...maybe two three days even if you are lucky, it happens...*" [public sector participant]. Complexities about lack of equipment in ICU and how it influences planning of patient treatment was emphasized by another participant: "*...sometimes...there is not enough walking frames and sometimes you might have a patient who doesn't need a walking frame for himself [in the long run]. So there's no point in getting [ordering] one for the patient but the one in ICU has gone walk about...you can't find it...*"[private sector participant].

When the doctor's notes were hard to read or lacked important information or requests this was expressed to hinder planning of patient management "*...and I didn't pick up my contraindications because of poor notes kept by the doctors and that is a major obstacle to good treatment because I could do damage not knowing...*"[public sector participant].

Another participant expressed that when the physiotherapists notes were not read by members of the inter-professional team that this hindered planning of patient treatment: "*That is a major obstacle. The doctors don't read the notes and they don't write their notes well and that is when accidents happen and at the end of the day it costs tax payers more money too...*" [public sector participant].

Another participant expressed that when the ICU was very busy doctors would miss potential problems that the patient is presenting with: "*We*

[physiotherapists] had a [patient with a] head injury and we totally missed that the patient had a pelvic fracture and obviously it wasn't documented anywhere in the file." [public sector participant]. The high turnover of patients and the rapid demand for ICU beds, hinder planning of patient treatment.

4.2.6 Solutions to Relational Barriers

The following question was posed to each group: "What are possible solutions to the relational barriers that you reported earlier?"

Table 4.6 summarises solutions proposed by participants to overcome relational barriers.

Table 4.6: Solutions Proposed to Overcome Relational Barriers among Inter-Professional Team Members in ICU

Themes	Codes	
	Junior Participants	**Senior Participants**
- Quality improvement	- Physiotherapy presence in the unit - Structured treatment times - Education regarding physiotherapy - Standard of service delivery - Staffing levels - Training of new staff - Chart audit	- Education regarding physiotherapy - Patient care protocols - Continuous professional development activities - Chart audit - Training of new staff - Physiotherapy presence in unit - Salary review
- Harmonious environment	- Teamwork - Friendliness - Confidence - Sharing ideas on patient care - Addressing inappropriate confrontation -	- Teamwork - Friendliness - Empathy - Confidence - Sharing ideas on patient care - Direct communication with team members - Address rivalry between professionals - Swift conflict resolution -

4.2.6.1 **Responses from junior participants:**

4.2.6.1.1 Harmonious environment

Teamwork was mentioned frequently as participants felt that when they were willing to accommodate other professionals and other professionals were

willing to accommodate them then this was a solution to many of the relational barriers expressed.

A willingness to help attitude for the physiotherapist made for a better relational experience between inter-professional team members. When teamwork existed amongst physiotherapists this was expressed as a solution to relational barriers: "*...working in ICU here is...very much like [a] team approach amongst the physio[therapists].We do peer reviews on patients, giving and sharing ideas with each other...*" [public sector participant]. Another participant expressed the same sentiments: "*...if you work with a chief [physiotherapist] that is more willing to come help you with patients than do paperwork then you know you're...in the right area...it's about patient care...*" [public sector participant]. When professionals assisted each other with their duties in patient care this was perceived as relational solution to unhelpfulness: "*...we would do...postural drainage with our chest physio and while [the patient] is...in postural drainage positions the nurse would wash...*" [public sector participant].

A friendly approach was paramount in solving the relational barrier of bad attitude. Another participant expressed that when relationships were built with inter-professional team members this fostered a better teamwork dynamic. Another participant expressed that having a personal interest in the inter-professional team members helps foster good relationships and teamwork: "*So I've just found that taking a personal interest in them [nurses]...generally helped change their attitudes...*" [private sector participant]. Another participant expressed similar sentiments: "*I think if you maybe greet them[nurses] and smile and [say] 'How are you, how's your day?'...*" [public sector participant]. Another participant expressed that learning the inter-professional team members' names was a huge step in fostering relationships and team building. A participant expressed that introducing yourself to unfamiliar staff was a solution to the unfamiliarity barrier. Another participant expressed a creative way to learn staff member's names: "*...someone told me...they'd take a picture [of the staff member] and save it on their phone with the picture and their name with their phone number, but you're using it to remember their name. That's what a friend of mine did...*" [public sector participant].

Participants felt that when physiotherapists were confident and spoke up about their concerns, this formed a solution to relational barriers amongst ICU team members. Participants felt that physiotherapists should demonstrate their knowledge and skill more in the ICU: *"...You show them [nurses] that you also have some sort of skill and some sort of way to help them that they haven't thought of maybe and speak up about it..."* [private sector participant]. Participants felt that physiotherapists need to promote themselves better in the ICU setting: *"Often when you say 'oh I'm the physio' they're like 'ah my back hurts'...clearly physio[therapy] is not promoted well enough [for staff] to know that we work in lots of different settings and we prefer ICU that's what we do..."* [public sector participant].

When professionals consult each other about patient care this facilitates team building in the ICU. When physiotherapists shared ideas amongst themselves and when they share these ideas with other members of the inter-professional team this solved relational barriers: "*...it [sharing ideas] helps you and everyone else because you say 'oh this person did that with that patient maybe it will work with this patient' and you try different things. But I also think that it comes from the Head of Departments so you can't just...look at the ICU environment in terms of physiotherapy in isolation. I think it's the whole attitude of the department..."* [public sector participant]. Journal club meetings and training sessions were seen as a solution to relational barriers. Physiotherapists should share the evidence that is out there with other team members: *"...even show research of how much [value] it is to work as an MDT and to work together that it's better for...the patient's outcome to show...that we are being effective with patients and I think...communication to...what the evidence says..."* [public sector participant]. Another participant expressed the same sentiment: "*It's also nice to share your knowledge because the different institutions teach different things. I mean...the basis is the same but we all have different lecturers that share what you learn at Wits versus what you learn at Tucks versus what you learn at UKZN...I think...rather pool your knowledge..."* [public sector participant]. Members of the inter-professional team should be encouraged to be engaged in academic activity because this was seen to reduce relational barriers within the ICU inter-professional team.

Solutions expressed to address inappropriate confrontation included avoiding a certain professional if they were in a bad mood. Another participant expressed that if a nurse declined for physiotherapy treatment to continue then physiotherapists should be bold enough to ask for reasons. A participant expressed that not taking things personally was a great deterrent of bad attitude from other inter-professional team members: "*...with the nurses' attitude, sometimes it's just good to not take it personally and to just let things go...*" [private sector participant]. Another participant expressed being helpful without expecting anything in return was a great way to foster relationships.

4.2.6.1.2 Quality improvement:

When the physiotherapist's presence was felt in the ICU through being around the ICU for much of the day, this was perceived as a solution to relational barriers of unfamiliarity: "*I think having one [physiotherapist] for just the ICU would be the easiest way but also because it is not a small ICU it is not really viable to have just one person.*" [public sector participant].

Having set times to go into the ICU was perceived as a solution to the relational barriers of professionals not being at the patient's bed side when physiotherapists were present: "*...we [physiotherapists] would go in at exactly eight thirty and we [physiotherapists] would go in at exactly one o' clock to the ICU and maybe two of us would start there, and we[physiotherapists] would help [each other] clear the ICU patient load...*" [public sector participant].

When other professionals were trained about physiotherapy scope of practice in their undergraduate training this might solve the relational barrier of professionals not knowing what physiotherapists do: "*...that [physiotherapy scope of practice] should also be part of their training because they work with us a lot...*" [public sector participant].

A participant expressed that when physiotherapists maintained a high standard of treatment this facilitated better relationships between physiotherapists and inter-professional team members: "*So instead of us just doing a five minute chest treatment, stay a full length and do it for 20 minutes. I think they will appreciate us more...*" [public sector participant].

When it came to staffing in the ICU the participants felt that maybe getting extra staffing to assist nurses could solve some relational barriers.
Orientation and training of new staff into the ICU should be done regularly: "*...so I think it's important that in ICU with the consistency of people changing is that they should help each other instead of thinking... 'I don't know what to do but let me just carry on what I'm doing instead of asking'...*" [private sector participant]. When physiotherapists participate in an educational role in the ICU this might solve the relational barrier of professionals that are unfamiliar with the ICU environment: "*...even the students [nurses] when they come in we [physiotherapists] would do orientation...*" [private sector participant].

Putting systems in place to ensure other professionals read physiotherapy notes might be another solution to relational barriers. Another participant expressed similar sentiments about writing in depth notes: "*I think if you write on [ICU patient chart] and you justify what you say and why you're doing this [treatment]...I think you're solving it [the problem]...*" [private sector participant].

4.2.6.2 **Responses from senior participants:**

4.2.6.2.1 Harmonious environment:

Teamwork was suggested to solve relational barriers. A participant felt that when physiotherapists stated at what time they would be able to assist nurses and lay clear boundaries this might solve relational barriers. A willingness to accommodate other professionals whilst working together with a patient was suggested as a solution to relational barriers: "*I do chest physio for a longer duration, until they are done changing [the patient's linen]...*" [public sector participant]. A participant expressed that if the physiotherapists tried to work around the other professionals routine this may solve relational barriers: "*...very often I would say to the sister 'Do you mind if I come back just before 1:45 PM, just before the two o'clock feed?'...*" [public sector participant]. Another participant expressed that reaching compromise between professionals regarding patient care may reduce relation barriers in the ICU.

Friendliness towards other members of the team was suggested as means to reduce relational barriers. Finding humour in the working environment can reduce relational barriers. Greeting everyone with a smile is a good way to build relationships. Showing appreciation to the nurses after they have assisted you was suggested as a good way of reducing relational barriers: "*They [nurses] become helpful then...once they have helped mobilize [a patient] to say, 'Wow I don't know if I would have been able to manage that without you'...*" [public sector participant].

Having an appreciative attitude towards the nurses may reduce relational barriers. Acting with confidence and speaking up when addressed by other professionals might help to foster good relationships in the ICU: "*...to show the doctors that we know what we are talking of...we have to bring literature articles...to back ourselves up...*" [public sector participant]. When physiotherapists share ideas freely in an engaging manner with inter-professional team members this may reduce relational barriers.

Communication through reading of clinical notes was suggested as a facilitator of relationships in ICU: "*I want to tell them [doctors] something, I write in their section and I write 'physio: please advise[regarding]mobilizing patient today?*" [private sector participant]. Communication with doctors during their ICU rounds or telephonically was suggested as means to facilitate relationships in ICU. Another participant expressed that making yourself known to new inter-professional team members was a great way of building relationships: "*...its building relationships, you've got to introduce yourself [to the doctors]...*" [private sector participant]. Another participant expressed similar sentiments: "*You are new staff to them [doctors], introduce yourself to them and always ask them how they would like things done...*" [private sector participant].

Another participant noted that since physiotherapists are first line practitioners then we need to act as such in ICU to reduce relation barriers: "*...I think that is also making a difference...in private...where the physio says yes boss to the doctors...they [physiotherapists] then need to become more assertive this is our job we know our job. I say that: 'chest physio is contraindicated due to XY and Z and that is my ground.' But unfortunately in private it is a whole*

different ballgame..." [private sector participant]. To reduce inter-practice conflict or politics physiotherapy practices in private sector should be more willing to share workload amicably amongst them.

A zero tolerance approach to bad attitude between professionals could reduce relational barriers. Wisdom displayed by seniors in dealing with individual staff placement in the unit may reduce relational barriers: *"...if there is really two people [nurse and physiotherapists] not seeing eye to eye, then I may not allocate that physiotherapist there..."* [private sector participant].

Orientation of new staff to the unit was suggested as a means to reduce relational barriers: *"...if they [new staff] are shadowing a specific nurse it makes it easier but maybe for that person to have a tick list to ensure everything has been covered [during orientation]."* [public sector participant].

4.2.6.2.2 Quality Improvement:

Exposure to other professionals' scope of practice in undergraduate training can help foster relationships among the ICU inter-professional team: *"...they [doctors and nurses] just think a physio[therapist] is just for...massage. Because a lot of the time when the patient complains about pain in the hands and the legs...they want the patient to have full body massage."* [public sector participant].

Having evidence-based protocols for patient care was suggested. Once clear clinical practice guidelines are drawn every professional should adhere to their job description to avoid relational barriers. Another participant expressed similar sentiments: *"...you the physio[therapist] are working in ICU, you [should] know the protocol and you should adhere to...it..."* [public sector participant].

An attitude of willingness to acquire new knowledge and practice in an evidence-based manner might improve the quality of care given to patients in ICU: *"...the younger group [physiotherapists] has been brought up from undergrad[uate] level with the...[importance of] evidence-based practice...whereas the older physios didn't have that experience [during their*

training]..." [public sector participant]. Another participant expressed that regular education time is important to implement: "*...like an in-service kind of training. Where everybody feels comfortable...also theoretical background [to support what] we...practice, helps a lot..."* [private sector participant]. Another participant expressed that although ICU is a busy environment any type of educational activity is paramount to reduce relational barriers.

The position where the physiotherapy notes were placed on the ICU chart is important and should be easily accessible: "*If you look at some ICU charts like at ...[name removed] hospital they have physio[therapy] blocks but if you look at where they are situated...right at the very bottom right hand corner [of the chart]...nobody is going to see the block down there..."* [private sector participant]..

Increased visibility and presence of physiotherapists in the ICU was seen as a possible solution to relational barriers: "*...also joining the ward round if you're stationed in there as a physiotherapist from eight o'clock..."* [public sector participant].

Increasing pay for nurses to increase quality of care rendered to patients was suggested as a means to reduce nurses fatigue because they will work less shifts to make sufficient revenue: "*...the only reason they [nurses] actually move out of there is because someone else pays better or the hours are better, not because they want to stop nursing..."* [private sector participant].

CHAPTER FIVE

5. DISCUSSION

5.1 FEELINGS ABOUT INTERACTIONS WITH INTER-PROFESSIONAL TEAM MEMBERS IN ICU

Junior and senior participants expressed positive feelings about their interactions with inter-professional team members in the units that they work in especially when the professional was willing to assist them in patient care. A study done on the inter-professional collaboration between nurses, physiotherapists and social workers working in medical wards, highlighted increasingly differing perceptions of teamwork (Reeves et al., 2010). This was reported to be the norm amongst healthcare professionals. Physiotherapists may view team work as nurses' willingness to assist them in patient care whilst nurses may view team work as being willing to assist other nurses in patient care. This difference in views may be due to their differing schools of training and educational backgrounds (Reeves et al., 2010). Regardless of differing perceptions of team work, sharing of responsibility for patient care generates less stress on working relations within the team than having to take sole responsibility. This is particularly important in the management of patients who are critically ill (Van Oostveen, Mathissen and Vermeulen, 2015).

Junior participants felt that when the inter-professional team members in ICU were focused on providing optimal patient care this released positive feelings about their interactions with the team. Senior participants differed slightly in their opinion by expressing that well established and good relationships with inter-professional team members made for positive feelings toward their interactions with inter-professional team members. Junior participants in this study had an average of 2.4 years working experience in ICU and may therefore feel more positive in a patient care driven unit due to their familiarity with EBP. They would have been exposed to EBP during their undergraduate training and if their experience of the level of general patient care in the units that they worked in compared with what they were taught during undergraduate training, this is likely to foster positive feelings towards other team members (Palfreyman et al., 2003). Senior participants had an average of 12.8 years of working experience in ICU and it is therefore not surprising that they felt positive about their interactions with the ICU team when they had well established relationships within the team. It has been reported that nurses value the prior

experience of physiotherapists when interacting with them, fostering improved relationships (Palfreyman et al., 2003).

Junior participants expressed negative feelings when they felt challenged by the ICU environment, when relationships with a specific inter-professional team member was strained and when they were reprimanded for breaking a rule. It is not surprising that junior participants felt intimidated by the ICU environment as, at the time of the interviews, they only had limited years of working experience in this type of environment. It is known that new staff find ICU challenging to work in not only due to the critically ill condition of the patients but also because of the advanced technology (Price, 2013). Coombs and Ersser (2004) highlighted the crafting theme which is when the combination of caring, technology, culture, and organisation power was combined with courage in decision making, vigilance in observation and competency to bring about holistic management of the patient. Competency can be achieved through step by step orientation programs to teach new staff the use of new technology. This could assist in easing these challenges especially if participant engagement and feedback is fostered (Coombs and Ersser, 2004). I feel crafting should be fostered in new staff in ICU through new staff shadowing the more experienced staff for a specific time and then measuring the level of crafting the new staff has reached before being allowed to work independently.

In a study done by Dalley and Sim (2001), respect was identified as an important facilitator to communication between nurses and inter-professional team members; however, the ways in which junior participants express respect to inter-professional team members may or may not be taught in their undergraduate training (Dalley and Sim, 2001). In a qualitative study exploring nurses' perceptions of physiotherapists in ICU in India, it was discovered that limitations existed in the relationship between nurses and physiotherapists. The authors suggested that the strained relationships could be resolved through creating and implementing inter-professional team learning initiatives during their undergraduate training (Gupte and Swaminathan, 2016). Participation in educational activities related to ICU patient care was suggested by participants in this study as a means to overcome strained relationships between team members.

Senior participants felt negative when there was limited availability of doctors in the unit. South Africa has lost intensivists and critical care nurses to the private health

care sector and overseas employment due to the scarcity of these professionals. They are recruited, offered better remuneration, job security and better working conditions (Groutsis and Arnold, 2012; Mathivha, 2002). Due to the shortage of these professionals, intensivists often practice in numerous ICUs in public and private sector at the same time and are stretched for time. Some participants felt doctors had limited availability telephonically for physiotherapists to reach them with questions about patient care. When it comes to critical care nurses, they often hold dual employment in public and private health care sectors with ample overtime hours' opportunities and are therefore difficult to retain which explains their limited availability in the ICU and high staff turnover.

Senior participants felt negative when their skills were side-lined or not recognised in the unit. The literature suggests this could be the result of overlapping scopes of practice (Falk, 1977; Mariono, 1999) which can leave some members of the inter-professional team feeling under-utilised or not recognised whilst giving some inter-professional team members the feeling of being over-utilised or a false sense of dominance and may even lead to occupational exhaustion/burn-out (Falk, 1977; Hall, 2005). Sharing of responsibilities amongst the inter-professional team can assist professionals to not feel side lined or overwhelmed by work load.

Junior participants expressed mixed feelings about their interactions with the inter-professional team in ICU when hierarchical structures had to be followed. Atwal et al. (2006) stated that the way in which medical power and hierarchy in the ICU team was organised poses a challenge to team work and complicates relationships between different genders and races (Paradis et al., 2013). Authors have suggested inter-professional team collaborative meetings to reduce the communication barrier posed by power and hierarchy in the unit, as well as orientation of new staff to a patient information checklist or tools where important information is communicated to the intensivists and unit manager in a systematic way (Rice et al., 2010;Paradis et al., 2013).

Some senior and junior participants had mixed feelings about their interactions with inter-professional team members which could arise as the result of the personality type of the specific team member they are interacting with. One of the reasons for a professional to allow personality or emotions to influence how they treat another professional could be lack of knowledge about the other person's profession which

may result in a negative perception of that profession. In a study done by Varghese et al. (2012) in India, final year students in various health care undergraduate programs were asked to describe their perceptions of physiotherapy. Majority (88.1%) of respondents were found to be lacking in knowledge about the physiotherapy profession and only 53.1% had positive perceptions of physiotherapy (Varghese et al., 2012). Low levels of job satisfaction among nurses in the workplace could lead to the second reason for professionals to allow emotions to influence how they treat others (Hawryluck et al., 2002). According to Hawryluck et al. (2002) daily interactions with health professionals in a complex environment such as the ICU can result in nurses having tension or conflicts, burnout or exhaustion which could create tension among inter-professional team members.

Nursing has traditionally been a female dominated profession and the increased workload in a complex environment such as ICU may predispose them to the factors mentioned above. Majority of participants in this study were females and therefore it would be reasonable to assume that some of these physiotherapists may also experience frustration and emotional disengagement because of working under high pressures in ICU. Such emotions expressed by physiotherapists in their interactions with the inter-professional team in ICU are bound to contribute in a negative way to the relationships. There is evidence that young female professionals with increasing workloads, poor sense of community, reduced remuneration, with little control over their work structure, experience increased incidents of being chronically fatigued, frustrated and emotionally disengaged compared to other health care professionals (Aldrees et al., 2013; Fiabane et al., 2013).

5.2 FACTORS THAT INFLUENCE COMMUNICATION BETWEEN INTER-PROFESSIONAL TEAM MEMBERS IN THE ICU AND SOLUTIONS PROPOSED TO OVERCOME RELATIONAL BARRIERS AMONG INTER-PROFESSIONAL TEAM MEMBERS IN ICU

When asked to identify factors that facilitated communication between team members junior and senior participants agreed that friendliness/familiarity with team members, a positive attitude from team members, positive attitude towards physiotherapy, willingness to work together (cohesiveness in the team) made for improved communication. The literature emphasizes the importance of politeness and respect between healthcare professionals as a foundation of successful inter-

professional communication where professionals communicate clearly, providing sufficient information and are responsive to other inter-professional team members. Notifying the correct health care professional about the patients' condition including any changes in the condition was highlighted to be important for junior health care professionals to be made aware of during ICU orientation (De Meester, 2013). When professionals high up in the hierarchy such as physicians engage in active listening and encourage other professionals to share their ideas this improves inter-professional communication (Kapersky and Toronto, 2000).

Using specific communication tools (e.g. surgical safety checklist) during inter-professional communication is recommended to ensure all relevant information is sufficient and clear to reduce communication errors and enhance patient safety. Another such type of communication tool listed in the literature is Situation, Background, Assessment, and Recommendation (SBAR). The professional uses this tool to discuss the patient condition clearly, highlighting vital and relevant information (De Meester, 2013). Due to high staff turnover in ICU, an acronym used in handover of patients at the end of a health care professional's shift is A.N.T.I.C.I.pate (Administrative data, New information/clinical update, Tasks, Illness details and contingency plan) to ensure all relevant patient information is communicated clearly and effectively to the next shift of health care professionals (Patterson, Roth and Woods, 2004). This acronym can be used by other inter-professional team members for example, the physiotherapists can use the A.N.T.I.C.I.pate acronym when handing over patients to the weekend locum to ensure patient information is communicated clearly and effectively (Patterson, Roth and Woods, 2004).

Junior participants felt that presence of inter-professional team members in the unit was a facilitator to communication. The literature says that when nurses are a highly qualified, well trained workforce (Lakanmaa et al., 2014), this reduces errors in treatment, betters patient outcomes, improves patient safety and ensures EBP healthcare principles are adhered to (Robnett, 2006; West et al., 2009; Kendall-Gallaghe and Blegen, 2009; Penoyer, 2010). Evidence has shown that 1 out of 10 deaths in the ICU can be avoided if patients are managed by intensivists (Pronovost et al., 1999). Because these professionals are in short supply, e-ICU can be a worthwhile solution to allow better inter-professional team support (Breslow, 2004).

Senior participants felt that when physiotherapists demonstrated EBP patient care this facilitated communication among inter-professional team members. A demonstration of EBP to other professionals may boost the inter-professional team members' confidence and reliance on physiotherapy, creating an atmosphere where the inter-professional team is more willing to assist the physiotherapist because they have seen the beneficial responses by patients who received physiotherapy treatment.

Junior and senior participants found the lack of communication among team members regarding patient care to be barriers in communication. In the literature Gupte and Swaminathan, (2016) discovered that between nurses and physiotherapists, there were limitations in their interactions due to lack of team work, and not discussing patient goals because of their different schools of training (Gupte and Swaminathan, 2016). Inter-professional education (IPE) in the form of undergraduate training programmes amongst health care professionals is the first step towards professionals knowing their role in the team. This would require the Schools of health sciences, clinical medicine, and nursing colleges to develop curricula, that is supportive of IPE. This should be priority in training institutions so as to reduce future communication barriers among ICU inter-professional team members and thereby improving overall patient safety (Lumague et al., 2008, Zwarenstein, 2005). IPE would teach healthcare students to value the role of other professionals in the team without fear of crossing their scope of practice, to share ideas and expertise and to commence a positive approach to inter-professional team collaboration, working towards safe and economical patient care (Lister, 1982; Mitchell et al., 2006). When education of other team members regarding physiotherapy is done in the undergraduate training of health care professionals this may improve perceptions of physiotherapy amongst healthcare professionals. In the literature a study done on undergraduate health care professions in India found only 53.1% had positive perceptions of physiotherapy and 88.1% did not understand what physiotherapy entailed (Varhgase et al., 2012). Increasing awareness of the physiotherapy profession among healthcare professionals would increase positive perceptions of physiotherapy. The junior participants felt solutions to identified barriers were: a) having structured treatment times and b) increasing standards of service delivery. Use of inter-professional team inclusive protocols in ICU has been supported by literature in improving patient outcomes (Marelich et al., 2000, Grap et al., 2003). Juniors and senior participants felt that sharing of ideas on patient care

could solve relational barriers. A study by Moritz et al. (2008) regarding sharing of information by physicians with nurses was found to improve nurses' autonomy and facilitated nurses' ability to think critically, and to act more independently and confidently (Moritz et al., 2008). Sharing of ideas on patient care could be facilitated by using a patient outcomes driven ward round tool or checklist.

Junior and senior participants felt that non-ICU trained staff being employed in ICU posed a barrier to communication. The need for competent nurses is a global phenomenon due to the increasing size of the aging, sickly population resulting in the increased demand of ICU patient care (Gill et al., 2012; Flinkman, 2014). Juniors and seniors felt that solutions to overcome relational barriers of non-ICU trained staff being employed in ICU and rotation of staff in and out of ICU was: regular training of new staff by offering collaborative simulation training to the inter-professional team members in ICU. In the literature a study found that to assess and build team work within the neonatal ICU inter-professional team members, simulation training was beneficial, valuable and that they were able to formulate new ideas to improve their teamwork (Colacchio et al., 2012). It was also concluded that simulation training similar to that used in the aviation industry to mimic real life crises in ICU, might be of great benefit and should be prioritised, where available (Miller et al., 2008).

Junior and senior participants found differing/clashing personality types to be barriers in communication. Evidence shows that nurses represent a large portion of inter-professional team members and this may give nurses a false sense of control and dominance which could lead to other professionals feeling undermined, side-lined or irrelevant in their presence and severely cripple the ICU inter-professional team working together in a collaborative way (Piquette, Reeves and LeBlanc, 2009). Some evidence suggests that daily interactions with health professionals in a complex environment such as the ICU can result in tension or conflicts and contribute to low levels of job satisfaction in the workplace (Hawryluck et al., 2002). The literature does mention that working in the ICU has been proven to increase emotional stress, in the nursing staff, due to the high pressured environment and the high standards set for patient treatment which, may or may not be met, due to the patient's condition (Elpstein et al., 2005). When management provides resolutions to rivalry between professionals and addresses competition for resources such as time, space, and finding literature, this can reduce the inter-professional team members' tension or conflict. However if one group of professionals is perceived to receive more support

from management than the next group of professionals this can add further strain to inter-professional interactions (Hawryluck et al., 2002). Management plays a vital role in resolving tensions among inter-professional team members by being neutral to all professionals and treating them equally without favouritism.

Senior participants felt that when physiotherapists' opinion was discredited or undermined this formed a barrier to communication with inter-professional team members. I think that this could be as a result of physiotherapists not possessing the confidence and not speaking up to inter-professional team members which could result in them feeling undermined. Undergraduate courses in professional etiquette, confidence or assertiveness, displaying respect and speaking to be heard could assist in alleviating this problem.

Junior and senior participants felt that the lack of professional etiquette amongst team members was a barrier to communication. Atwal et al. (2006a) stated that how much knowledge each professional understood on teamwork and how much an individual's professional perception of teamwork differed from the next might pose a challenge to the effectiveness with which staff worked collaboratively in ICU. A person's professional etiquette is informed by school of training which differs amongst inter-professional team members in the ICU. Professional etiquette is taught in physiotherapy courses at undergraduate level at universities in South Africa but the content taught may differ between the professional courses.

Junior and senior participants felt that the rotation of staff in and out of ICU was a barrier to communication. South Africa has lost most of its skilled intensivists and critical care nurses to the private sector and overseas employment due to better remuneration, job security and better working conditions (Mathivha, 2002). The public healthcare sector will continue to experience these regular staff rotations unless remuneration packages for skilled staff members are adjusted to match or exceed those of the private sector. In South Africa more nurses who are not ICU-trained are asked to work in ICU so as to cover the reduced critical care work force due to the loss of professional ICU-trained nurses (Groutsis and Arnold, 2012). According to literature 469 medical practitioners of South African origin are practising in Australia due to highly skilled medical personnel being on the Australian elite migrants list which gives them preference over other professionals and improved job security (Groutsis and Arnold, 2012; Iredale, 2000). Recently numerous nursing schools had

to be closed down by the South African government which gave rise to bogus nursing college money making avenues, instead of producing high quality training to improve the quality of health care (Makhubu, 2016). This is one of the reasons that ICU nursing staff has a high turnover due to staff feeling that they are unable to cope with the demands or when nurses feel they are inadequately treating their patient (Laporta et al., 2005).

Senior and junior participants felt that a lack of physiotherapy presence in ICU posed a barrier to communication. Physiotherapists could increase their presence in the ICU by the physiotherapist or physiotherapy management attending ward rounds, unit leaders meetings and inter-professional collaborative meetings. Engaging in dialogue with inter-professional team members on a daily basis and having annual physiotherapy awareness campaigns amongst inter-professional team members such as back care classes, lifting techniques, or an exercise and stretch regimen for the inter-professional team member working in ICU. Another method suggested to improve communication in the ICU is through virtual ICU centres called e-ICU where physiotherapists can have live feeds via camera, electronic screening of patient monitors, links to X-rays and ventilator settings. This could be a means of supervising junior physiotherapists' patient management without being physically present in the unit. These e-ICUs exist in the United States of America and help curb the shortage of skilled professionals but there are currently none in South Africa (Nowlin, 2004). The absence of team members in unit is an ongoing problem due to the challenges mentioned above but they can be minimised by setting times in which professionals will be available in the ICU and encouraging telephonic communication or speed dials to reach professionals.

Junior participants felt that lack of interest in patient care and bad attitude from inter-professional team members were barriers to communication. I feel that due to the high pressure of working with a critically ill patient, technology, and swift decision making needed in end of life care puts demands on staff working in the ICU, which may lead to emotional exhaustion, bad attitude due to burnout and emotional dissociation from staff and patients (Elpstein et al., 2005; Laporta et al., 2005; Norlund et al., 2010; Fiabane et al., 2013). Seniors and junior participants felt a possible solution to the communication barrier of bad attitude of inter-professional team members was physiotherapists displaying a confident attitude. A study done on Dutch physiotherapists' personality traits on patient outcomes showed that being

calm and relaxed in their approach to patients and having life experience, produced positive patient outcomes (Rice et al.,2010). Another solution to bad attitude of inter-professional team members is creating a positive environment in the ICU by making team building a priority. According to Thyer, (2003) when team building was a priority in the unit, nurses felt acknowledged by professionals and sharing of information was ongoing and regular between professionals, their collaboration improved. This could curb inadequate staffing levels in the unit by ensuring happier team members and ensuring that skilled personnel are retained in the unit (Thyer, 2003).

Senior participants felt that one of the barriers to communication was the language barrier. I feel that nurses who spend the most time with the patient are the major communicators in the inter-professional ICU team. The responsibility of relaying messages between professionals and facilitating communication between patients and professionals, the family members and the professional, falls heavily on them (Person et al., 2004). The language barrier was identified by senior participants who qualified outside of the country and since all nurses are fluent in English and examinations to allow professionals to practice in South Africa are written in English, the language barrier could be between patient and physiotherapists and perhaps a lack of willingness from the nurses' side to interpret for them. A solution to this could be to that training in a basic Nguni language course should be made compulsory for foreign qualified health professionals to attend before they are allowed to practice in South Africa so as to ensure patient safety and avoid overburdening nurses with the task of playing language interpreter between patient and health care professional. Such a language course could also be included in the training of physiotherapy students in South Africa.

The senior participants felt solutions to identified barriers to communication were: a) fostering direct communication with team members during ward rounds, b) collaborative efforts in drawing up and implementing patient care protocols, and c) collaborative CPD. The researcher felt that physiotherapists should use their skills and expertise in EBP knowledge together with inter-professional team members to draw up ICU protocols, which can be implemented in a manner that allows for inter-professional peer auditing and feedback.

Senior participants felt that inadequate utilisation of the ICU chart and clinical notes were a barrier to communication. Nurses are trained to document all information on

patient charts so that the attending physician can utilise the information to monitor patients' conditions. Physiotherapists receive similar training in documentation, but physicians don't always seem to read these notes in the detail in which they are written. Physicians paying special attention to read the notes of other professionals would improve the clear and free flowing exchange of information amongst the ICU inter-professional team (Barker and Oandasan, 2005). The participants felt that untidy notes from the physician and unrealistic orders for physiotherapy patient management posed a barrier to written communication. In the literature physicians and intensivists written communication is very important as it directs and guides the inter-professional team members in patient management and planning (Poissant et al., 2005). The written communication should be legible and use of standardised abbreviations, discussion between doctors and physiotherapists regarding rationale behind orders given, that deviate from the norm, should be encouraged. Methods of conveying the degree of urgency should be standardised (Mitchell et al., 2006; Morrison, 2007).

5.3 FACTORS THAT INFLUENCE PARTICIPANTS' ABILITY TO PERFORM PATIENT CARE IN ICU

When asked to identify factors that enabled patient care amongst the inter-professional team members junior and senior participants felt that a good work ethic and good time management were facilitators to patient care. In the literature it was found that good time management was a facilitator of patient care where the workload was appropriately distributed to allow inter-professional team members time to do the job and time for CPD activity (Nancarrow et al., 2013). Providing inter-professional team members with time and physical resources for CPD activity such as access to internet, free wireless connectivity, a desk, private room to make calls, access to video or virtual presentations (Rosenfield et al., 2000) and written documents to introduce the ICU policies, share the vision of the ICU, the role of the new staff member as a form orientation programme (Nancarrow et al., 2013) is important to facilitate improved patient care.

Participants felt that communication regarding patient care and sharing of knowledge amongst inter-professional team members, were facilitators of patient management by the ICU inter-professional team. According to the literature communication between inter-professional team members has to be assertive, strategic, structured,

and measurable and audited regularly (Schmalenberg et al., 2005). The use of communication checklists and tools is recommended because these tools reduce errors and omission of critical and relevant patient information (De Meester, 2013). Participants also felt that CPD was a facilitator of patient care. The literature states that opportunities for gaining new knowledge must be prioritised in the team annual calendar and sharing of this knowledge through CPD activities should be done (Hammick et al., 2007). The inter-professional ward round is the ultimate time for education of team members. Each member should get an opportunity to communicate their role in patient management, express their concerns and new literature supporting patient care can be discussed. Hierarchy is minimised in such a way that every member is given equal opportunity to speak and each member is encouraged to express themselves (Der, 2009).

Junior and senior participants highlighted team work approach to patient care as a facilitator to patient care. In the literature factors that contribute to successful collaboration were shared responsibility, non-hierarchical relationships, team based decision making approaches, willing and co-operative behaviour from inter-professional team members (Henneman et al., 1995). Time, patience and nurturance were noted as vital to build relationships so that collaboration becomes a norm. According to a concept analysis done by Henneman et al. (1995) commitment from all parties in the inter-professional team, competence in skills, and confidence in each inter-professional member's capabilities contributes positively to a team work approach to patient care (Henneman et al., 1995).

The senior participants felt a facilitator to patient care amongst the inter-professional team members was adequate and experienced staffing in the unit with good leadership offered by the unit manager. The literature states that a unit manager can apply a personal rewards systems to be given to inter-professional members to incentivise hard work, team building initiatives, coming up with new ideas or solutions and implementation of new creative ideas or solutions to solve problems (McCallin, 2003; Raey et al., 2003). Paradis et al. (2013) stated that when nursing leadership was easy to access, approachable and could maintain a strong supportive, physical presence in the ICU this improved nurses' confidence in carrying out autonomy and in improving overall patient care (Raey et al., 2003; Paradis et al., 2013). Evidence shows that when nursing leaders are present in the ICU and address matters of staff motivations, education, skills building, team building and play a role of facilitative

interaction and supervision of professionals, this improved the inter-professional team work dynamic (Rosegran et al., 2007).

The junior participants felt a facilitator to patient care was a good understanding of the role of physiotherapy. The researcher felt that other inter-professional team members' understanding of the role of physiotherapy can be facilitated through physiotherapy awareness programs among the inter-professional team members and by involving other professionals in the physiotherapy treatment sessions. The literature says that inter-professional collaborative patient care goals should be approached in the Specific, Measurable, Achievable, Reliable, and Time-limited (SMART) approach (Lewis, 2010). If the SMART approach is used than this can encourage discussion of patient care goals by incorporating physiotherapy, nursing and intensivist patient care goals.

Junior participants also felt that mutual trust in relationships between nurses and physiotherapists is a facilitator of patient care. Trust is built by showing respect for other professionals, using appropriate language when addressing colleagues and turning to colleagues for answers. When inter-professional members support each other when mistakes are made and celebrate one another when success is achieved a trusting relationship is established (Bridges et al., 2011).

Junior participants felt that hierarchy in the unit posed a barrier to patient care. The literature states that being open to new suggestions from other team members assists in minimising tensions associated with hierarchy. Research evidence stresses the importance of limiting hierarchical structures in patient care by empowering inter-professional team members to use clinical reasoning and develop the confidence to carry out their autonomy (Pagnini and Bousso, 2014). Hierarchy in the unit was seen as a barrier to patient care by junior participants which could result with each professional focusing on interaction amongst their own profession as a way of avoiding organisational professional power and hierarchy (Rose, 2011). When inter-professional team member education is done via undergraduate IPE training programs in future, this would improve inter-professional collaboration in ICU as professionals would have a greater understanding of each team members' role in the team (Lumague et al., 2008; Zwarenstein, 2005).

One of the barriers to patient care highlighted by both junior and senior participants was the fact that non-ICU trained staff work in ICU. In South Africa there is an extreme shortage of critical care nurses due to the reasons mentioned earlier in the discussion. This can add strain to the inter-professional interactions between physiotherapists and nurses as a result of differing levels of clinical knowledge and expectations resulting in conflict in patient handling.

Another barrier to patient care identified by senior participants was bad attitude. In the literature it has been said that interactions can be tense between nurses and physicians as a result of brief and irregular exchanges of patient information, due to poor time management resulting in physicians not having enough time for free flowing communication regarding patient care (Moritz et al., 2008). The literature states that working in an ICU can be chaotic, labour intensive, and complex which can lead to a bad or negative attitude amongst inter-professional members as a coping mechanism. Coping mechanisms arise in intensely stressful working conditions and these are emotional disengagement of staff members and isolating oneself from inter-professional interactions (Rose, 2011).

Senior participants felt that another barrier to patient care was staff absence. The literature says this could be attributed to poor nurse leadership when nurses' leadership is focused on financial administration and dictatorship of policies without consultation of staff and can lead to emotional exhaustion, absenteeism and eventually reduce nursing staff performance in the ICU (Filkins, 2003). Due to the shortage of critical care nurses, a solution is recruiting and retaining more nursing staff in the unit and in the literature the importance of mentorship programmes has been highlighted (Brediger, 2009). The mentorship programme works by pairing experienced, qualified critical care nurses with young, inexperienced, under-qualified nurses to mentor, advise, guide, and support these nurses throughout the first six months of their career in the ICU with the added requirement of attending EBP ICU courses. This serves to form a positive atmosphere in the inter-professional team.

The barriers to patient care highlighted by junior participants were unfair demands placed on physiotherapy service. The physiotherapists in South Africa are trained in ICU at undergraduate level and are not required to do specific ICU training before they are allowed to work in ICU after obtaining their Bachelor of Science degree (Hanekom et al., 2015). The differences in training between nurses and

physiotherapists and the requirements for working in ICU could be one of the reasons that physiotherapists and critical care nurses develop tension or conflict in relation to patient care in ICU. The unfair demands put on physiotherapists could be as a result of exhaustion experienced by nurses working in a chaotic, labour intensive ICU trying to find some relief from their own overwhelming responsibilities.

Junior participants felt one of the barriers to patient care was team members who were being dismissive of new ideas in current EBP. Evidence shows that nurses did not value EBP but valued unit protocols and prior experience as references for patient care while physiotherapist had a better familiarity with EBP as a result of their undergraduate training (Parlfreyman et al., 2003). I feel that physiotherapists should educate nurses on EBP using current literature to market new ideas or new treatment modalities as a way of introducing new ideas to the inter-professional team before commencing the new treatment modality. This would make nurses feel like part of the team, would encourage future consultation from other professionals regarding treatment strategies and would give them an opportunity to ask questions. Adult learning strategies to educate the inter-professional team members, such as using practical clinical presentations at patients' bedside with an ICU round, video presentations, or poster presentations are all validated (Perrecone, 2006).

5.4 PARTICIPANTS VIEWS REGARDING THEIR ROLE IN THE INTER-PROFESSIONAL TEAM IN ICU

All participants felt they were important members of the ICU inter-professional team as they played a role in saving cost for the patient through implementation of early mobilisation exercises aiding in preventing ICU acquired weakness, multimodality chest physiotherapy, MHI, ventilator hyperinflation and airway clearance techniques which help reduce rates of ventilator associated pneumonia, and reduce duration of ventilator dependency. All of which reduce the patients LOS in ICU and in hospital (Hanekom, Fourie, Coetzee 2007; Bourdin et al., 2010; Thomas, 2011). Senior participants felt that they played a role in advocacy for the patient and both junior and senior participants felt that appreciation and confidence placed on participants by patients and professionals made them an essential service in the unit.

Participants felt their role in ICU was important due to the high levels of patient satisfaction they achieved. The literature says that patients that are satisfied with

treatment are most likely to respond well to healthcare. Patient satisfaction involves patients' expectations being met or exceeded, and patients being affirmed with enhanced self-esteem (Hills and Kitchen, 2007). According to Aguilar et al. (2013) the professional values that guide Australian physiotherapists are professionalism, EBP patient treatment, the humanitarian theme of physiotherapists having empathy, honesty, being caring towards their patients. Partnership between the therapists and patients was very important and involved building a relationship and fostering trust between the patient and the physiotherapist (Aguilar et al., 2013). These values are also reflected in the South African Health professionals council scope of practice of physiotherapists (GN R2368/76, www.hpcsa.co.za>PBPhysiotherapy).

Physiotherapists felt they were given autonomy in the ICU because they were able to assess patients for suitability for physiotherapy and were not completely reliant on referrals from medical personnel. A qualitative study was done in Greece using 30 minute semi-structured interviews on 10 physiotherapists. It was discovered that physiotherapists were limited in their autonomy due to the medical hierarchy controlling the referral of patients to physiotherapists (Chanou and Sellars, 2008). The study did conclude that inter-professional collaboration from all stakeholders was needed to empower physiotherapists in Greece to practice their autonomy (Chanou and Sellars, 2008). Senior participants felt they were important team members because they played a role in education of professionals and patients. Participants felt their EBP educational background, their clinical reasoning combined with their autonomy in the ICU placed them in a favourable position to educate inter-professional team members in the ICU. Junior and senior participants felt they were adequately trained in EBP and they ranked themselves high in clinical reasoning skills to assess and address patients' needs appropriately to bring about positive patient outcomes. High level evidence exists to support the fact that early rehabilitation of patients in ICU and application of multimodality respiratory therapy reduces duration of mechanical ventilation, improves patients' functional abilities and decreases ICU and hospital LOS (Stiller, 2013).

5.5 FACTORS THAT INFLUENCE PLANNING OF PATIENT CARE IN ICU

Senior and junior participants felt the facilitators in planning of patient treatment in ICU were: a) communication between team members, b) use of clinical reasoning and c) team work approach towards patient care .The literature shows that team work can be enhanced between inter-professional team members by using IPE

training programmes where the inter-professional team members are given practical, real life patients to collaboratively assess, treat, and problem solve (Lidskog et al., 2008). Physiotherapists have been well trained in EBP and are in a position to use their clinical reasoning confidently to screen patients for physiotherapy treatment which makes them assertively practice autonomy in decision making which facilitates planning of patient treatment.

The junior participants felt that these were the barriers to planning of patient treatment: a) rapid patient turnover, and b) the lack of or exhaustion of patient funds to continue with treatment due to the rising costs associated with ICU admission. The literature does highlight the rising demand of ICU admission due to the increasing burden of the HIV population in South Africa, aging, sickly population, and therefore ICU beds are in short supply (Pronovost et al., 2002).

The senior participants felt that these were the barriers to the planning of patient treatment: a) unclear notes on ICU chart, and b) physiotherapy notes not being read. Literature suggests regular inter-professional chart reviews or audits should be done where ICU charts are reviewed, analysed, updated to best practice guidelines and to ensure compliance to previously suggested standards are being adhered to (Zapatochny et al., 2008). Electronic health records could also be a solution to the unclear notes on the chart but with ICU being a time pressured environment documentation using electronic means has the potential to take away time from patient care. A study was done on the use of electronic health records for patient case studies in undergraduate IPE training (Titzer et al., 2015). The purpose was to allow inter-professional team members to increase their competency in quality patient information entry, analysis, and application in collaboration with other inter-professional team members (Titzer et al., 2015). The results showed that patient information was lost during transitioning of patient care and it was important that a structured communication tool was used to communicate patient information verbally and structured format was used with clinical notes (Titzer et al., 2015).

5.6 LIMITATIONS OF THE CURRENT STUDY

There are several limitations to this study. First, the researcher, being a physiotherapist working in the ICU, may have allowed her prior experiences with inter-professional team members to influence her interviewing process to focus on aspects that personally resonated with her. Laskin, (2001) felt that it could be difficult

for the interviewer to step back and be objective. Secondly, the study was limited to four public hospitals and four private hospitals in urban Johannesburg. The perception of physiotherapists working in ICUs in low population, semi-urban areas may be different. The issue of being able to generalise the results of this study may not be fully addressed (Topping, 2010). Further studies are warranted to generalize the results. Thirdly, the independent coding of themes into categories and sub-categories was only done by the researcher which limited her single coding structure to her physiotherapy background. Having other researchers from other health care diverse backgrounds could provide different coding structures.. The study focused on the physiotherapists' perceptions of inter-professional team members which are based on events that may have occurred months before the interviews took place and may have been distorted. Direct observation of inter-professional team members interacting with physiotherapists would corroborate the findings of this study.

5.7 RECOMMENDATIONS

5.7.1 Future research:

Future studies could explore other members of the inter-professional ICU team's perceptions of interactions with physiotherapists. This could assist in the identification of key factors that influence the inter-professional team interactions in ICU and further solutions to barriers to inter-professional team collaboration can be identified. Further research can focus on observational studies of inter-professional interactions in ICU.

5.7.2 Clinical practice:

The structure of hierarchy in ICU was identified as a major barrier to interactions among the inter-professional team and future research on the ICU inter-professional team organisation, culture, hierarchy may identify further interventions to the barrier that translates to clinical practice. Hierarchy is minimised when every member is given equal opportunity to speak and researching the means of each member expressing themselves may translate to improved ICU clinical practice (Der, 2009).

CHAPTER SIX

6. CONCLUSION

This is the first study to the researchers' knowledge that explores physiotherapists' perceptions of interactions with inter-professional team members in the adult ICU setting. Physiotherapists are important members of the inter-professional team in the ICU and exploring their interactions with other team members has raised up issues that may, if addressed adequately, improve patient outcomes and collaboration efforts between inter-professional team members. However other team members' perceptions of interactions with physiotherapists in ICU may shine more light on inter-professional relations involving the physiotherapist in the ICU setting. Results from this study showed that being able to communicate with the patient is equally as important as being able to communicate with other professionals in the ICU setting. Therefore adjusting the physiotherapists' undergraduate training programme to include curricula in IPE, communication and professionalism is needed. The participants in this study were aware of the value of IPE in ICU as a solution to relational barriers. The physiotherapists EBP background makes them perfect professionals to be the driving force behind critical care IPE training programmes.

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APPENDIX A

- **INFORMATION SHEET AND CONSENT FORM**

Participants INFORMATION SHEET

Dear Colleague

My name is Mahitsonge Ntinga. I am a Physiotherapist currently registered for a Master's degree in Physiotherapy at the University of Witwatersrand. As part of my course requirements, I am expected to conduct a research study. I would like to invite you to participate in this study titled:

Physiotherapists' experiences of interactions with inter-professional team members in the adult intensive care unit (ICU) setting.

I would appreciate your contributions in this matter as physiotherapists play an integral part in the ICU and your daily interactions with the inter-professional team members can generate solutions to further improving patient outcomes and working relations in the ICU. Participation in this study is purely voluntary and permission has been obtained form the HOD/practice owner. Semi-structured group interview sessions will be conducted in a quiet private room at your Physiotherapy Department during your lunch break or at a time more convenient for you. The data obtained will be used for research purposes only. Anonymity and confidentiality of the identities of participants will be ensured through allocation of code numbers to all verbal and written data obtained. The identity of participants will be known only to the researcher that will be conducting the group interview sessions. You may choose to withdraw your participation at any time without any penalty.

If you do agree to participate in the study, you need to sign a consent form to indicate your acceptance. You would need to put aside a time that is convenient for you at your place of employment to sit down with you to conduct the group interview session.

If you are a junior physiotherapist (less than five years' working experience) who is currently working in the Adult ICU setting daily, your attendance and participation would be appreciated. If you are a senior physiotherapist (more than five years' working experience) working in the Adult ICU setting daily your attendance and participation would be appreciated.

I will be using an audio-recording device to record the discussions from each group interview session. The audio-recording acts as a source of reference for the discussions held in each session to ensure accuracy of the data captured. Anonymity of participants during audio-recording will be ensured by not using participants' names during the group interview session. I will need your signature on a consent form to indicate your acceptance of audio-recording of the group interview sessions in which you will participate. You are free to choose not to be audio-recorded. In that instance, a separate interview will be conducted with you and your responses will be hand written by the researcher. During data collection and analysis access to this information will only be available to the researcher and her supervisor.

All data will be managed, stored and destroyed according to the University of Witwatersrand guidelines. The raw data (written and recorded) will be stored in a secure area under lock and key. All data will be destroyed after two years following publication of the research or after six years if no publication was done.

I appreciate that you will get no direct benefit from participation in the study however refreshments will be served. I hope that the study will provide valuable information and possible solutions towards facilitating improved working relations between the physiotherapist and inter-professional team members in the Intensive Care Unit.

The appropriate research committees and persons at the University of Witwatersrand have approved the study and its procedures.

Thank you for reading this information letter and for responding to my invitation. If you require any more information you are welcome to contact me.

Please forward dietary requirements for the refreshments' that will be served.

Yours Sincerely

Mahitsonge Ntinga (MSc Physiotherapy student)

Please contact me if you have questions about the study:

Email: mnntinga1@yahoo.com

Cellphone no: 073 3822697

APPENDIX B

- **PARTICIPANT CONSENT FORM**

Physiotherapists' experiences of interactions with inter-professional team members in the adult intensive care unit (ICU) setting.

Researcher : Mahitsonge N Ntinga
Program : MSc By course work (research report)
Student no : 741537
University of Witwatersrand, Department of Physiotherapy
(cardiopulmonary)
Supervisor : Associate Professor H Van Aswegen
Johannesburg South Africa

Participant Consent Form

I..... (Physiotherapists" name) hereby give my consent to participate in the group interview sessions. I have read and understood the information sheet. I retain the right to withdraw participation from this study at any time. I have had an opportunity to ask questions about the study which the researcher has answered adequately.

Signature : .....
Date : .....
Witness : .....

Participants Consent for Audiotape Recording

I ..... (Physiotherapists' name) hereby give my consent willingly to audiotape recording of the group interview sessions.
I have understood the content in the information sheet and the researcher has clarified verbally the purpose of the audio taping of the individual interview sessions and the freedom to reject the audiotape recording.

Participants Signature : .....
Date : .....
Witness : .....

APPENDIX C

- **DEMOGRAPHIC INFORMATION SHEET**

Please answer the questions below. Please do write your name on this page. Your responses will be kept separate and will not be linked or recorded with your name in any way. This will allow us to make an accurate description of the sample.

Name :

Age :

Gender :

Working Environment: Private Sector /Public Sector

Other :

How many years have you been working in the ICU?

What type of adult ICU are you working in?

Cardiac	General	Surgical	Trauma

Undergraduate Qualification:

Year of Qualification	Institution	Level of Qualification

Highest level of Qualification if not same as above:

Year of Qualification	Institution	Level of Qualification

APPENDIX D

- **STIMULUS QUESTIONS FOR GROUP INTERVIEW SESSIONS OF JUNIOR AND SENIOR PHYSIOTHERAPISTS**

QUESTION 1:

How do you feel about interacting with the inter-professional team members in the ICU where you are working?

1a) When answering, highlight your emotions and you can link it to an incident that happened when interacting with team members?

QUESTION 2:

What factors influence your communication with the inter-professional team members in ICU?

2a) Name three factors that facilitate and three factors that hinder your communication.

QUESTION 3:

What factors related to the inter-professional team members, facilitate or hinder your ability to perform patient assessment and treatment in the ICU?

3a) What makes one inter-professional team member facilitate your ability to perform patient assessment and treatment in the ICU compared to another that might hinder your task? Feel free to give examples to both?

QUESTION 4:

Do you see yourself as an important member of the ICU inter-professional team? Explain your answer.

QUESTION 5:

What factors facilitate or hinder your ability, as an important member of the ICU inter-professional team, to contribute towards planning of patient care in the ICU?

5a) Name three factors that facilitate your ability to contribute towards planning of patient care in the ICU?

5b) Name three factors that hinder your ability to contribute towards planning of patient care in the ICU?

QUESTION 6:

What are possible solutions to the relational barriers that you reported earlier?

6a) For each barrier give a possible solution or a way of how it can be minimised.

QUESTION 7:

How can facilitators, that contributed to interactions with the ICU inter-professional team (as reported by some members), be used to create a more harmonious working environment in your current setting?

7a) For each facilitator elaborate on practical means on how it can be implemented in the ICU setting to improve patient care.

APPENDIX E

- **ETHICAL CLEARANCE CERTIFICATE**

R14/49 Ms Mahitsonge Nomusa Ntinga

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140345

NAME: (Principal Investigator)	Ms Mahitsonge Nomusa Ntinga
DEPARTMENT:	Physiotherapy University of the Witwatersrand
PROJECT TITLE:	Physiotherapist' Experiences of Interactions with Inter-Professional Team Members in the Adult Intensive Care Unit (ICU) Setting
DATE CONSIDERED:	28/03/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof Heleen van Aswegen
APPROVED BY:	Professor P Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	09/05/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.
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 resubmit the application to the Committee. **I agree to submit a yearly progress report**.

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

APPENDIX F

- **EXAMPLE OF CODING AND THEMES EXTRACTED FROM TRANSCRIPTS OF JUNIOR PARTICIPANTS**

Question: 'Do you see yourself as an important member of the ICU inter-professional team? Explain your answer.'

Code	Category	Themes
Big demand for physiotherapy	Satisfaction with service -A2, A9, A10, A11, A13, A14	Essential service
Training on vital information	Training - A3, A6, A7, A12, A15, A16, A17, A18, A19, A20, A24	
we educate the allieds	Evidence-based practice - A4, A5, A8	
literature shows we are valueable	Cost saving - A21, A22, A23, A25	
expertise in physiotherapy techniques		
knowledge of precautions and contra-indications		
education of inter-professional team		
we start early		
other professionals value us		
other professionals value our input		
expertise is a scarce skill		
patients are grateful		
we spend time explaining things to the patient		
training of staff		
innovation in weaning		
innovation in mobilisation		
identify missed diagnosis		
we examine x-rays with more detail		
identify missed diagnosis		
we see first patient acutely		
get patient moving quickly		
prevent complications		
we provide palliative care		
rehabilitation to improve quality of life		

APPENDIX G

- **TURN-IT-IN REPORT**

Research Report Nomusa Ntinga

ORIGINALITY REPORT

5%	4%	2%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

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Student Paper

EXCLUDE QUOTES	ON	EXCLUDE MATCHES	OFF
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