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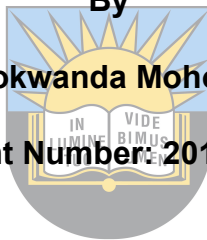
Experiences of Emergency Care Technicians with Regards to Inter-facility Transfers of Critical Patients in Mangaung Metro, Free State

A mini dissertation submitted to the Department of Public Health of Fort Hare University in fulfilment of the requirement of the Master of Public Health Degree

By

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University of Fort Hare
Supervisor: Dr. N.T Nkutu
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June 2023

DEDICATION

To my family, for all their love and support.



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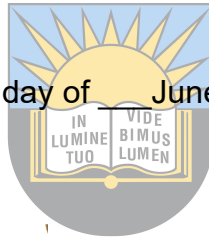
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DECLARATION

I declare that this mini dissertation is my original work done in the fulfilment of my master's degree in Public Health through the University of Fort Hare. It has not been submitted to any other institution. I declare that this mini dissertation contains acknowledgements of other people's work through in-text referencing and reference list attached herein.

Signed in Durban on this __14__ day of __June__ 2023



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N.T Mohoto



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DECLARATION ON PLAGIARISM

I, Nokwanda Mohoto, student number 201928135, declare that the contents of this mini dissertation are my own work. References have been made to the work of others used in this document.

Name: Nokwanda Teddy-Bear Mohoto



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Signature: _____

Date: 14 June 2023



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CERTIFICATION

This mini dissertation titled “**Experiences of Emergency Care Technicians with Regards to Inter-facility Transfers of Critical Patients in Mangaung Metro, Free State**” meets the guidelines outlining the award of the postgraduate degree, **MASTER OF PUBLIC HEALTH**, at the Fort Hare University and is approved for contribution to scientific knowledge and literary presentation.

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Supervisor: _____

Signature: _____

Date: 14 June 2023

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Free State, Mangaung ECTs, thank you for taking time off your busy schedules and assisting me with this research. Your line of work is a demanding one and I am humbled by your support.

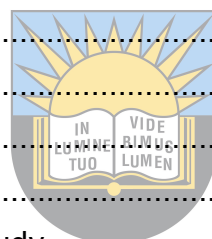
To my family. I cannot thank you enough for the love and support you have shown me through all I do. For believing in me when I felt like I could not make it. I am overwhelmed by your support and trust in me. I thank God for you.



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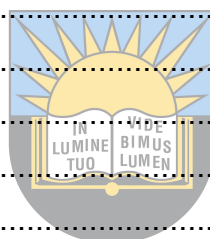
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LIST OF ACRONYMS

ALS Advanced Life Support

ECP Emergency Care Practitioner

ECT Emergency Care Technician

EMS Emergency Medical Services

FSCOEC Free State College of Emergency Care

HPCSA Health Professions Council of South Africa



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ABSTRACT

Background: Over the years, the increase in the number of inter-facility transfers of critically ill or injured patients has placed a burden on the healthcare system. Critically ill or injured patients are transferred to higher level facilities/hospitals so that they can receive specialist care. The inter-facility transfers require a multi-disciplinary healthcare system which includes the referring physician/nurses, emergency medical services and the receiving physician/nurses. The nature of these critical transfers has placed great emphasis on the high quality treatment and management required from emergency services. This has pushed emergency services to introducing new qualifications with better capabilities of treating and managing critically ill or injured patients. In Mangaung Metro, Free State, EMS personnel with the required capabilities have not been employed within operations post 2011. This has left personnel (ECT) with lower qualifications and capabilities employed within operations to be the ones undertaking inter-facility transfers of critically patients.

The **purpose** of the study was to explore the current operational ECT's experiences on inter-facility transfers of critically ill or injured patients.

Objectives were to explore the ECT's experiences on inter-facility transfers of critical patients in Mangaung; to describe the challenges encountered by ECTs concerning inter-facility transfers of the critical patients in Mangaung and to describe the strategies that can be implemented to improve the experiences of ECTs during inter-facility transfer of critically ill patients.

Methods: A qualitative approach with a exploratory design was used throughout the research to explore the ECT's experiences with regards to inter-facility transfers of critically ill or injured patients. Interviews were held with 9 consenting ECT's under strict COVID-19 protocols. The ECT's/participants were coded. An interview guide was used to explore the ECT's experiences, challenges and strategies to enhance outcomes. A tape recorder was used to record the interviews. The interviews were then transcribed verbatim and sent to a co-coder for verification and analysis.

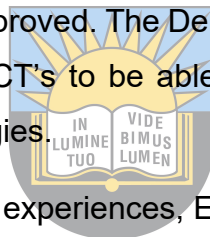
Results: Four themes emerged: 1) Experiences of ECT's conducting inter-facility transfers of critical patients, 2) lack of knowledge regarding inter-facility transfers of critical patients, 3) challenges experienced by ECT's regarding inter-facility tranfers of

critical patients and 4) strategies required to enhance safe inter-facility transfer of critical patients.

Majority of the participants expressed negative experiences with regards to inter-facility transfers. These negative experiences were due to a lack of proper equipment to undertake critical transfers, poor management, lack of capabilities or limited scope of practice, poor pre-hospital and in-hospital relationships and communication, amongst other things. The study revealed that critical patients required highly qualified EMS personnel with a broader scope of practice and capabilities to undertake inter-facility transfers of critical patients.

Conclusion: ECT's revealed how overwhelmed they felt undertaking inter-facility transfers of critical patients and expressed the need for more highly qualified personnel to be employed operationally. More focus should also be put on training/refreshing the ECT's to current protocols. Communication between the multi-disciplinary system needs to be improved. The Department of Health needs to procure more and better equipment for ECT's to be able to perform their duties as well as invest in proper managerial strategies.

Key words: inter-facility transfers, experiences, EMS,



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CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

Inter-facility transfers of patients play an integral part in ensuring that patients receive the best healthcare. These transfers require a multi-disciplinary approach, which includes nurses, physicians and the Emergency Medical Services (EMS). Fried, Bruce, Colquhoun & Smith (2010:136) state that the need for specialist care, the lack of critical care facilities in referring hospitals, the capacity of staffed critical care beds and repatriation are all reasons why inter-facility transfers occur.

A latest study by Van Lieshout, Binnekade, Reussien, Dongelmans, Jeffermans, de Haan, Schultz & Vroom (2016) placed great emphasis on the importance of a transfer team. This transfer team needs to ensure that the care a patient receives in transit is equivalent to that they receive in the Intensive Care Unit. This ultimately translates to having highly qualified personnel, with capabilities of giving such care, being the ones transporting critically ill or injured patients.

Due to the low level of care and distance of the surrounding hospitals in Mangaung, critical patients are usually transferred to Bloemfontein's Regional and Academic hospitals. These transfers are done by EMS personnel. Currently, the highest qualification of paramedics within Mangaung is an Emergency Care Technician (ECT).

Pre- 2011 the highest qualified paramedic employed in the Free State was the National Diploma. These paramedics were more concentrated in Bloemfontein and were the operational paramedics doing these transfers of critical patients. Post 2011, the National Diplomas in Bloemfontein were absorbed into the Free State College of Emergency Care (FSCOEC) for training purposes. This left a gap within operations, as their absence meant that patients requiring advanced medical care would not be able to receive such, thus creating medico-legal hazards. It also left the Department of Health in the Free State having to outsource these services to private EMS, as the service had to be provided by advanced personnel whom the Department did not have. The removal of the National Diplomas left the ECTs as the highest qualified operational paramedic, who could not perform other advanced skills during patient treatment.

With the ever-changing protocols, scope of practice and even more developed training, the current paramedic guidelines advocate those transfers of critical patients be conducted by the Emergency Care Practitioner (ECP). Mangaung Metro has had no ECPs employed operationally after 2011, as they are all at the FSCOEC engaged in the training of EMS personnel. These ECPs are sometimes operational, but even then, it is merely for Work Integrated Learning (WIL) of students. It is only around this time that the ECP can fill in the gap operationally. Transfers of critically ill or injured patients have, therefore, been left to lower qualified personnel to perform, thus giving rise to medico-legal hazards (Jeffs, Lyons, Merkley & Bell: 2013; 1).

This brought about an evolution within EMS training, which aimed at increasing the availability of highly qualified EMS practitioners with advanced skills required to care for the critically ill and injured patients during inter-facility transfers (this EMS practitioner being the Emergency Care Practitioner [ECP]). The state of available EMS practitioners in Free State, as of March 2021, is tabled below:

Table 1.1: Free State EMS current staff complement



Category	Number of Staff	Percentage	Type of Practice
BLS	1115	68%	Supervised
ILS	437	27%	Independent
ECT	87	4.5%	Independent
ALS	7	0.5%	Independent

Table 1.1 shows the number of staff Free State EMS has according to their different levels of qualification, from Basic Life Support (BLS) being the lowest, to Advanced Life Support (ALS) being the highest qualified staff. Only BLS staff practice under supervision.

Table 1.2: Free State EMS skills mix

District	BLS	ILS	ECT	ALS	Total
Control Centre	112	21	11	0	144
Fezile Dabi	188	70	12	2	272
Lejweleputswa	218	126	17	2	363
Mangaung	199	77	15	2	293
Thabo Mofutsanyana	310	101	22	1	434
Xhariep	88	42	10	0	140
TOTAL	1115	437	87	7	1646

(S.S.Towa, 2021, pers. Comm., 20 March 2021)

Table 1.2 depicts the different districts Free State is made up of, with the total number of staff within each district. It also shows the skills mix (the different qualifications within EMS) and how the number of lower qualified personnel (BLS) exceeds the number of highly qualified personnel (ALS) across all the districts.

In an email communication with the Free State Department of Health's Communications manager, the current skills mix is outlined. In the skills mix, there were no ECPs available in all the districts. This meant that ECTs were left to care for the critically ill and injured patients operationally. ECTs are lower qualified and their skills/capabilities are limited, therefore, treatment given by the ECT, which is of lower quality, may result in medico-legal hazards within the profession (Jefferies et al., 2013: 1-2).

1.2 Statement of the problem

Over the years, there has been a demand for the healthcare system to provide inter-facility transfers of high quality. This was due to the increase in the burden of disease

and demographic challenges. The increase in the numbers of transfers has proven to be a global dilemma. In Scotland, Fried, Bruce, Colquhoun, and Smith (2010:136) found the increase from 74 000 transfers per annum in the year 2004/5 to 78 000 transfers per annum in the year 2006/7 to be quite significant, requiring a more radical and integrated approach. The Free State Province in South Africa has shown no difference. A study conducted by Schoon (2013:535) found an increase in the number of transfers recorded between 2011 and 2012, and this was just maternity transfers alone. The study highlighted the importance of EMS on inter-facility transfers and how their availability and prompt response times had a positive impact on maternal mortality. Thus, an integrated healthcare system is mandatory to provide the best healthcare.

The increasing number of transfers and the critical nature of these transfers has led to EMS evolving in the context of the larger healthcare profession. Before, EMS was merely composed of Basic Ambulance Assistants (BAA) or Basic Life Support (BLS), who had undergone a short course with basic first aid. This evolution was also in transition with healthcare reform. It expanded the scope of services EMS provided and the scope of practice as well, advancing clinical skills towards those of critical care nursing, for the care and transport of patients from one hospital to another (National Emergency Care Education and Training Policy [NECET] 2017).

The studies conducted on transfers of critically ill and injured patients do not investigate EMS personnel's experiences with regards to inter-facility transfers. There are fewer studies, to my knowledge, that specifically look into inter-facility transfers of critically ill or injured patients by highly qualified personnel. Such studies include that of a South African study by Hodkinson, Argent, Wallis, Reid, Perera, Harrison, Thompson, English, Maconochie and Ward (2016), in which they plotted the pathways followed by critically ill children from the first presentation through to Paediatric Intensive Care Unit (PICU) admission or death. In their study, they highlighted the complexity of this pathway and focused their attention on certain issues, one being the continuity and quality of care at each step throughout the process. Their data was collected from 641 consultations across different healthcare facilities, majority (292) of which came from EMS transfers. This study, however, did not focus specifically on the continuity and quality of care given by EMS personnel conducting those transfers of critically ill patients or their experiences with such. Their study had similarities to this

study in that it highlighted the importance of EMS's role in inter-facility transfers and the quality of care received by critical patients being transported, as this has shown to be one of the ECT's negative experiences in Mangaung. Another South African study by Slabbert and Smith (2011), while evaluating the effectiveness of the current referral system from rural areas to tertiary care in Cape Town and gaining insight into transfer patterns and patient outcome, found that focused training of EMS personnel, amongst other things, may help improve patient outcomes. However, the study did not directly look into EMS specifically regarding inter-facility transfers of critical patients by a specific EMS group/qualification. The similarities in this study were that of the lack of training and the improvement of services should training be received, as highlighted by the ECT's experience in this regard. There is a paucity of studies describing the inter-facility transfers within the health care sector, more so, the experiences of ECT's with regards to inter-facility transfers of critical patients. This is what prompted the researcher to conduct a study of this nature within the Free State, Mangaung Municipality.

1.3 Purpose of the study

The purpose of the study was to explore the current operational ECT's experiences on inter-facility transfers of critically ill or injured patients.

1.4 Objectives of the study

The specific objectives of the study were as follows:

- To explore the ECT's experiences on inter-facility transfers of critical patients in Mangaung.
- To describe the challenges encountered by ECTs concerning inter-facility transfers of the critical patients in Mangaung.
- To describe the strategies that can be implemented to improve the experiences of ECTs during inter-facility transfer of critically ill patients.

1.5 Research questions

- What are the experiences of ECTs with inter-facility transfers of the critical patients?
- What are the challenges encountered by ECTs with inter-facility transfers of the critical patient?



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- What are the strategies that can be implemented to improve the experiences of ECTs during inter-facility transfer of critically ill patients?

1.6 Significance of the study

The significance of the study is for contribution to research (to add to the body of knowledge) as well as for contribution to practice (influence policy and decision-makers within the Department of Health in Marga Mulya) in ensuring that the public receives the most advanced paramedic care during transfers to improve clinical outcomes.

1.7 Delimitations (Scope) of the study

The study is focused only on healthcare workers who were ECTs registered with the HPCSA and employed within the public sector. The ECTs had to be practicing in any of the EMS bases within Marga Mulya Metro and were fluent in English, as this is the first medium of communication recognized within the profession.

1.8 Limitations of the study

The limitation of the study is that it is only conducted within the public sector within a specific geographic area. Therefore, the results of the study cannot be generalized to the private sector or other provinces of the country, but findings can only be suggested or used by other researchers elsewhere.

1.9 Operational definitions of key terms or concepts

Inter-facility Transfer

In this study, inter-facility transfer refers to the movement of critical patients and those requiring specialty care from a low-level hospital to a hospital where specialized healthcare services are available. Specific terms operationalised in this study include:

Advanced Life Support (ALS)

ALS is a 3 year qualification leading to an ALS scope of practice of an array of invasive techniques.

Emergency Care Technician (ECT)

ECT is a 2 year individual with a mid-level qualification leading to a limited number of skills within the ALS scope of practice.

Emergency Care Practitioner (ECP)

ECP is a 4 year professional with a Bachelor degree within the ALS scope of practice with an additional scope of practice which includes thrombolysis and rapid sequence intubation (Ashokcoomar and Naidoo, 2017:515).

1.10 Theoretical framework

The level of theory that was applied in the study is a middle-range theory. This theory examines a portion of reality and identifies a few key variables. The data collected was about an area of practice and experience of the participants.

The study was guided by a practice theory. Brink, van de Walt and Van Rensburg (2018:18) define a practice theory as one which is characterized by its goal of prescriptive action for health care practice. Dickhoff, James and Wiedenbach (1968:202), as cited in Brink, Van de Walt and Van Rensburg (2018:218), identify four levels of practice theory based on the existing body of knowledge about a phenomenon, these being:

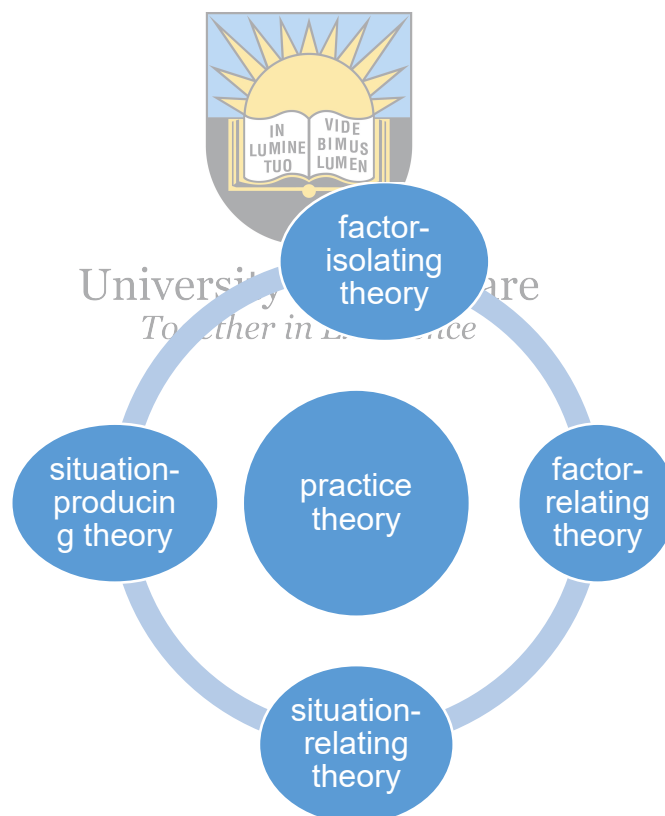


Figure 1.1: The practice theory model

Source: (Brink, van de Walt and Van Rensburg, 2018)

- Factor-isolating theory: the researcher has ensured that interviews of the participants were well conducted. From there, descriptions were made and concepts were identified (coding).
- Factor-relating theory: the concepts identified between the participants were named and related to one another
- Situation-relating theory: This theory suggested the inter-relationship between concepts/findings from participants regarding the phenomenon.
- Situation-producing theory: this theory aimed at bringing about change. The researcher aimed to prescribe the activities necessary to reach goals from the data collected/ findings within the phenomenon.

1.11 Methodology

A qualitative approach was used to explore the ECT's experiences with regards to inter-facility transfers of critically ill or injured patients. This approach was convenient for this study because of its ability to get to the deeper insights of the ECT's experiences. More of the methodology will be discussed in chapter 3.

1.12 Ethics

Ethical clearance was obtained from the University of Fort Hare's Health Research Ethics Committee on the 20th of October 2021. Ethics will be discussed in more detail in Chapter 3.

1.13 Conclusion

In this chapter, the background of the study was provided. The researcher stated the research problem and what prompted her to conduct research of this nature. The chapter also described the aim of the study, study objectives, research questions and the significance of the study. More detail of some of the aspects in this chapter will be described in detail as the researcher gets to chapter 3. The next chapter is describing how related literature was reviewed, analysed and synthesised.

oooOooo

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A literature review by definition is “An organised written presentation on what has been published on the topic by scholars” (Brink, van de Walt and Van Rensburg, 2018:57). This literature gives insight to the readers into what is known with regards to the topic, so that they can have a better understanding of the phenomena. Many sources and publications have been sought out in this chapter to help understand the area being researched. In this chapter, the researcher focused on a systematic search on the topic. Search engines Google Scholar, Ebsco Host, Pubmed and BMC were accessed, using the key terms inter-facility transfers, EMS role in inter-facility transfers, inter-facility transfer processes, EMS training and capabilities.

2.1.1 Importance of Inter-facility transfers

Patient transfer is an important public health concern. This is due to the centralization of specialist services. According to Hunt and Prior (2015:153), a transfer should only occur if it will result in an improvement in the patient's overall condition, so the risks and benefits must be evaluated by an experienced clinician with advice from the receiving specialist. With this said, literature has emphasized the importance of striving for a transfer team, which will ensure that the care a patient receives in transit is equivalent to that they receive in the Intensive Care Unit (Van Lieshout *et al.*, 2016:1151).

In a study conducted by Singh, MacDonald, and Ahghari (2014:9), it was found that inter-facility transfers of critical patients resulted in critical / adverse events such as hemodynamic instability, among others. They, therefore, advocate skilled transport teams which may avert clinical deterioration and adverse events through timely critical interventions. Hunt and Prior (2015:153) support this by further stating how, in their study, UK EMS together with specialists, paid close attention to the training of paramedics, specifically, in obtaining a Diploma in Retrieval and Transfer Medicine.

Challenges presented in the Jeffs *et al.* study (2013:1), where they stated that patients with complex health conditions frequently require care from multiple providers and are particularly vulnerable to poorly executed transitions from one health care setting to

another. Poorly executed care transitions resulted in negative patient outcomes (for example, medication errors, delays in treatment) and increased healthcare spending due to rehospitalisation or emergency room visits by patients (Jefferis *et al.*, 2013:1). In their study, the health care providers facilitating these transfers are EMS personnel. Although the importance of having the right level of health care provider conducting the transitions/transfers is not emphasised, it is suggested by the findings in their study. This could also mean that the referring doctor/hospital and the receiving doctor/hospital did not have effective communication with each other, as these were the apparent results from the Jefferis *et al.* study (2013:3). Therefore, the role of both the doctor and EMS personnel is important in ensuring that inter-facility transfers are executed effectively to improve patient outcomes.

A Canadian study by Hawilo and Taneja (2020:1), while looking at healthcare outcomes and utilization of helicopter EMS (HEMS) versus ground EMS (GEMS) transporting critical patients from one facility to another, found that when patients receive care from Advanced Life Support certified EMS, whether by HEMS or GEMS, healthcare outcomes for both groups did not differ considerably. The benefit to patient outcome, decreased mortality, morbidity or disability, was more dependent on the care the patient received. The study also showed that patients transported by physicians via HEMS stood a much greater chance of survival, as compared to if the patient was transported by e.g., BLS personnel. In the pre-hospital environment, EMS does not have physicians on board but the scope of practice of the higher qualified EMS personnel (ECP) covers a broader clinical scope, which patients would benefit from, as they would be receiving advanced care.

2.1.2 Inter-facility processes

Abraham and Reddy (2010:122) state that the patient transfer process impacts both organizational and clinical goals of the hospital. Therefore, ensuring that patients are transferred efficiently and quickly is crucial to achieve effective patient flow within the hospital. They also state that the patient transfer process impacts whether appropriate care is delivered in a timely and effective manner (Abraham & Reddy, 2010:122). In a study conducted by Gillman, Jacobs and Fatovich (2014:567), it was found that, in the Perth Metropolitan area where the study was conducted, the majority of the transfers were from non-tertiary hospitals to either tertiary or academic hospitals. This study had

indicated how system inefficiencies had been associated with delayed transfers that resulted in longer emergency department length of stay and increased workloads when arranging inter-facility transfers (Gillman, Jacobs & Fatovich 2014:567). Therefore, this study together with Abraham and Reddy's study (2010) clearly indicated the need and importance for a transfer process to be in place to avoid the challenges they had found in their studies, although Abraham and Reddy (2010:112) investigated the challenges intra-departmentally (from one ward to another in the same facility) while Gillman, Jacobs and Fatovich (2014:567) investigated these challenges inter-departmentally (from one facility to the next). The findings were very similar with the conclusion that transfer processes are absolutely required and are of great benefit. In support of this, Liu, Liu, Duan, Pan & Yang (2019:1) state that, as much as many practice guidelines have been developed in developing countries, both the referring and receiving facilities need to act together to ensure the safety, continuity and coordination of patient care during the transfer process, which includes the initial decision of transfer.



Schiff, Ansell, Schlosser, Idris, Morrison & Whitman (2019:227) identifies these processes for an inter-facility transfer to occur. The medical doctor identifies the need for transfer (patient requiring specialist services or admittance to a tertiary hospital). The patient is informed and signs consent if they can, or else informed consent is carried out with the family. A phone call is made to the receiving hospital. Transfer documents are prepared, these documents must reflect the name of the patient, transferring hospital and doctor. If the receiving hospital accepts, the referring doctor needs to notify transport teams and identify the right level of care to carry the transfer through. In most cases, these transfer teams are EMS personnel (Schiff *et al.*, 2019:227). Although Lee, Lo, Yeung, Tang & Chan (2010:51) identified three stages of inter-facility transfer, which were pre-transport, during transport (on route) and post-transport, these processes have not changed from then until currently. Lee *et al.* (2010:51) further state that the pre-transport preparation comprises of communication, documentation, equipment support, pharmaceutical preparation, risk assessment and determination of transport configuration, which is by far the most referrer-dependent stage and prone to problem rising. Lee *et al.* (2010:51) highlight how on route management quality depends, not only on the skill of the accompanying staff, but also on their ability to anticipate and prevent possible deterioration. Without

directly emphasising the need for the highest qualified EMS personnel to be the one conducting inter-facility transfers of the critical patients, there rises a suggestion from the study that ECP in this regard be the EMS personnel of choice, due to their level of skills training and decision-making and/or other capabilities.

In a study conducted by Bosk, Veinot and Iwashyna (2011:5), while investigating inter-facility transfer processes, it was found that one of the barriers still faced by community hospitals to actually getting the patient to the receiving hospital was that there was conflict with EMS transfer teams, as well as difficulties with the availability, timelines and skill level of ground transportation systems. In their study (2011:5) they also reported on how basic EMS teams often had policies or practice against the transport of patients who were perceived to be unstable, even though such instability might be the thing that required transfer and provider's belief that such transport would be safe. Advanced EMS teams were seemingly in short supply. Due to these barriers, aeromedical transfer was sometimes used because the crews were perceived to be more likely to transport critically ill patients rather than some specific aeromedical need (Bosk, Veinot, and Iwashyna, 2011:5).

2.1.3 The role of healthcare providers on Inter-facility transfers

In a study conducted by Govender *et al.* (2012:61), while investigating the pending loss of ALS paramedics in SA, it was found that the role and value of Advanced Life Support (ALS) was subject to the geography, healthcare needs, resources and medical and social culture of the country involved. South Africa is a country burdened with high rates of trauma, increased poverty and communicable diseases, maldistribution of healthcare institutions and emergency facilities, and long pre-hospital times, which result in the need for pre-hospital ALS and inter-facility transfers of patients by the ALS (Govender *et al.*, 2011:61). The ALS in question, as studies have indicated, should be one holding a high qualification within the field of EMS. This is warranted so that the high qualified ALS is able to provide the appropriate care for critically ill or injured patients, to prevent medico-legal hazards and improve clinical outcomes.

2.1.4 EMS training and capabilities

The importance of Emergency Medical Services in South Africa (SA) has been evident by its evolutionary practices to date. South African EMS is not more unique than the rest of the world but does have differences in framework, training, qualification and clinical practice guidelines/protocols, following the country's needs.

A United Kingdom study by Hunt and Prior (2015) found how United Kingdom EMS together with specialists paid close attention to the training of paramedics to ensure advanced patient care is given in order to avoid medico-legal hazards. In South Africa, Schoon (2013) found how EMS availability had a positive impact on maternal mortality, but there was no specificity on EMS personnel's experiences with having to perform transfers of such critical nature.

In a UK study conducted by Dunn, Gwinnutt and Gray (2007:40), they had found that the need for standards and training in critical patient transfers were emphasized >10 years ago (1997). In 2007, they had dealt with this, to some extent, by the Safe Transfer and Retrieval course which was implemented then. Before then, however, in 2006, Woollard (2015:4) explained how ECPs in one of the ambulance services undertook a multi-professional Bachelor of Science in Emergency Care, which includes competencies based on those developed by the Higher Education Ambulance Development Group. Woollard (2015:5) further stated that researchers who had compared ECP report forms with those of 'standard' paramedics reported key themes from stakeholder interviews and reflective reports indicated that ECPs had a beneficial impact on deployment of resources, improved decision-making and leadership skills, improved inter-agency collaboration, and improved care through immediate treatment and/or referral.

Currently, in a preamble of the National Emergency Care Education and Training Policy (NECET 2017), the former Minister, Dr. Motsoaledi, stated that, in keeping with the provisions of the National Development Plan (NDP) 2030, the National Health Insurance (NHI) had to address key areas for improvement within EMS. One such intervention involved a critical assessment of emergency care education and training and subsequent alignment with the provisions of the Higher Education Act, 1997 (Act 101 of 1997). This ensured that the education and training of EMS providers, after

many conducted research, meets international standards in providing effective and efficient EMS providers under their scope of practice.

Recent studies conducted by the Professional Board of Emergency Care and the Health Professions Council (HPCSA) have found evidence supporting the expansion of EMS provider's scopes of practice. Again, this was to ensure that there was deliverance of appropriate healthcare when and where patients needed it. This tried to address past challenges and align South African standards with international standards.

In South Africa, the different qualifications/levels of EMS providers registered with the Health Professions Council of South Africa (HPCSA), that are being trained following the NECET policy are:

- Basic Ambulance Assistants (BAA), which fall under Basic Life Support (BLS),
- Ambulance Emergency Assistant (AEA), which falls under Intermediate Life Support (ILS),
- Paramedic, which includes Critical Care Assistant (CCA),
- Emergency Care Technician (ECT) and National Diploma: Emergency Medical Care (ANT) and
- Emergency Care Practitioner (ECP).

Although the CCA, ECT, ANT, and ECP are all referred to as Advanced Life Support (ALS) paramedics, the ECP is the most highly qualified with a more expanded scope of practice. In the study, the researcher will tabulate the capabilities of the ECT and the ECP to understand the differences in their scope of practice to the NECET policy.

Table 2.1: Capabilities of emergency care providers: 2017

Capability	ECT (NQF 5)	ECP (NQF 8)
Airway Management		
Suctioning of the airway (endotracheal)		X
Suctioning of the airway (extraglottic)		X
Endotracheal intubation facilitated by induction, neuromuscular blockade, mechanical ventilation, and airway adjuncts		X
Video laryngoscopy		X
Surgical cricothyroidotomy	X	X
Oxygenation and ventilation		
Needle thoracentesis (Neonate)		X
Interfacility mechanical ventilation (pediatric and adult without cardiovascular support)		X
Mechanical ventilation (neonate)		X
Non-invasive ventilation with mechanical ventilator		X
Non-invasive ventilation- oxygen driven (without mechanical ventilator)	X	X
Mechanical infant resuscitator	X	X
Use of capnography/capnometry- via endotracheal tube/extraglottic device		X
Use of capnography/capnometry- via facemask/nasal cannula	X	X
Humidification		X
Circulatory Management		
Peripheral intravenous cannulation (infant scalp)		X
Peripheral intravenous cannulation- limbs and hands (<1 year old)		X
External jugular vein cannulation		X
Oral rehydration via NGT		X
Endotracheal drug administration		X
Use of intravenous infusion devices including pressure infuser, volumetric infusion pump and syringe driver	X	X
Topical hemostatic agents	X	X
Use of non-pneumatic anti-shock garment	X	X
Precordial thump	X	X
Synchronized cardioversion		X
Vagal manoeuvres		X
Central line management of lines in-situ		X
Transcutaneous cardiac pacing		X
12 lead ECG diagnosis		X
Fibrinolysis (with documented telemetry or equivalent)		X
Targeted temperature management (inter-facility transfers where capabilities exist)		X
Obstetric Management (Diagnostic and Clinical Aids)		
Use of ultrasound		X
Fundoscopy		X
Use of an otoscope		X
Use of a Snellen Chart		X
Arterial blood gas sampling and analysis		X
General		
Peak flow measurement and interpretation	X	X
Spinal movement restriction	X	X
Application of pelvic binding devices	X	X
Application of vacuum mattress	X	X
Urinary catheterization		X
		X
Suturing		
On-scene discharge		X
		X
Approved PBEC-CPD activity without formal assessment. Where skill is involved, this may involve the practical performance of the skill.		
Approved PBEC-CPD activity with formal assessment. Where skill is involved, this may involve the practical performance of the skill.		

(HPCSA Clinical Practice Guidelines: 2017)

Table 2.1 clearly indicates the capabilities of the ECT and ECP. Some of the capabilities that the ECT can perform still need for them to be assessed on those skills before they can be performed. This might also take time, as the FSCOEC caters to every emergency care provider within the province. Some skills are required for providers to know in the transfer of critical patients, for example, endotracheal intubation, the use of a mechanical ventilator, synchronized cardioversion and targeted temperature management, all of which are not in the scope of practice of the ECT, but is in that of the ECP. The hypothesis, therefore, would be that, during an inter-facility transfer carried out by the ECT, they may not be able to deal with adverse events of the critical patient in transit, should they arise, and may not transfer intubated patients on mechanical ventilators.

2.1.6 Benefits of ECP facilitated transfers

Critical patients being transferred oftentimes require airway management or support and are therefore intubated. As to who is best to intubate the critical patient in EMS remains controversial. However, the new clinical guidelines submitted by the Paramedic Board of Emergency Care (PBEC) have stipulated that only the ECP is eligible to do so due to the medication they use and the training they receive. In a study conducted by Crewdson *et al.* (2017:5), the literature review revealed how a patient intubated using rapid sequence intubation (RSI) drugs (induction agent and a muscle relaxant) resulted in improved outcomes for the patient, as compared to if no drugs were used. Other studies have evaluated the benefits of RSI performed by ECPs and drug-facilitated intubations (using a sedative and analgesic) performed by ANTs and have found that RSI groups resulted in improved outcomes compared to the other group. The critical patients undergoing inter-facility transfers are usually intubated using muscle relaxants and are therefore maintained throughout the transfer using these medications that are within the scope of the ECP, hence the need for ECP to be the paramedic of choice to transfer these critical patients. This is just one example among many, which highlights and supports the need of ECP to transfer critical patients.

Dunn *et al.* (2007) stated that, in the transfer of critical patients, equipment for advanced airway management, appropriately sized for the patient (for example, endotracheal tubes) and should be carried, as should basic resuscitation drugs.

Supplemental drugs for sedation, analgesia and sedation should be considered on an individual patient basis, as should vasopressors, inotropes and antiarrhythmic. This is equipment being carried and used under the ECP scope of practice.

Where studies have investigated and compared the effectiveness of physician/nurse and paramedic-based transfers to paramedic only transfers, it was found that the physician/nurse and paramedic-based transfers resulted in a significant decrease in mortality rate, due to prompt adverse events interventions in transit. This study also highlighted the importance of the health worker's scope of practice in the success of patient outcomes. The more expanded the scope of practice was, the better the care the patient received in transit (Van Lieshout *et al.*, 2016:1151-1153).

In the South African context, however, health workers doing inter-facility transfers are mainly EMS providers alone. With supporting literature from the above study, the importance of the most highly qualified personnel managing critical patients during inter-facility transfers is then apparent because they have a more expanded scope of practice, which enables them to perform more advanced clinical skills and interventions on the critically ill and injured patients.

A research report submitted by Chatsika in 2016 to the University of Witwatersrand in Johannesburg, while describing the demographics and clinical characteristics of patients transported with helicopter emergency medical services (HEMS) and the indications for HEMS dispatches, found that ALS with national diplomas (ANT) attended to 61% of all inter-facility transfers, while ECPs attended to 39% of the inter-facility transfers (Chatsika 2016:7). The report describes the interventions performed by the paramedics on the route, which can only be performed by ALS, hence the need for the recommended qualification of at least one healthcare provider involved in the inter-facility transfer to be an ALS.

We can reason that the national diploma paramedic attends more inter-facility transfers due to the fact that the BHSc (four-year degree course [ECP]) is fairly new (initiated in 2011) and, therefore, not many ECP paramedics have been produced thus far (ECPs as from October 2018 latest statistics: 660, compared to the ANT: 1521 [HPCSA, 2018]). These are EMS providers registered with the HPCSA. Hackland and Stein (2011:65) had further investigated the loss of ALS in South Africa, concluding that reasons for ALS migrating or leaving EMS as a whole were due to remuneration,

amongst many other things. As this may be true, it does not take away the need for and importance of a more highly qualified ALS to be the one doing inter-facility transfers of the critically ill and injured patients, due to the evolutionary field of medicine and training provided to the ECP in accordance with this.

2.2 Conclusion

The reviewed literature has revealed the evolutionary nature of the service and the need for the EMS personnel with different levels or qualifications and different capabilities. The dispatch to any case depends on what the patient presents with and what level of qualification the EMS personnel is. Studies argued the importance of having highly qualified EMS personnel performing inter-facility transfers also highlighting great benefits on the ever-increasing numbers of inter-facility transfers. The next chapter will describe the methodological processes followed for this study.



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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Chapter three will focus on the methodology, which is meant to inform the reader of the processes and steps taken to conduct this research, for them to better understand the intention of the study.

3.2 Research approach and design

The study explores the experiences of ECTs, thus making it a qualitative study due to its exploratory nature. The reason for this approach was to understand the lived experiences of the participants, which could not be put in a graph or any other form of mathematical context. Understanding the participants' lived experiences gives an insight into the phenomena being studied by focusing on what is happening in the life of that individual and from there understanding what alterations are needed (if any) through the eyes of the individual (in this particular study, the ECT who is operational and is physically involved in transferring critical patients). Brink, Van der Walt and Van Rensburg (2018:105) describe this type of approach as phenomenological research, which may lead to the development of concepts and themes that can be further developed into interventions to be applied in practice. This is important for this study because what also needs to come from it are strategies that can be employed to ensure clinical governance and medico-legal hazards are prevented.

3.3 Research setting

The research setting is in Mangaung Municipality, Bloemfontein in the Free State. Mangaung is a Metropolitan Municipality within the Free State Province, consisting of three major towns, which are Thabanchu, Botshabelo, and Bloemfontein. Within Mangaung is one Regional hospital (Pelenomi Regional Hospital in Bloemfontein), three District hospitals (Dr. J.S Moroka-Mantsopa Hospital in Thabanchu, Botshabelo District Hospital in Botshabelo and National District Hospital in Bloemfontein) and one Academic hospital (Universitas Academic Hospital in Bloemfontein). The district hospitals transfer critical patients to either the regional or academic hospital in Bloemfontein. According to Statistics South Africa, the population of Mangaung Municipality is 747 431 as of 2011 and is estimated to be 878 330, if the growth rate

would be the same as period 2001-2011 (approx. 1, 48% / year). 83, 3% of this population is made up of black Africans, of which the majority utilises public services for medical needs.

The distances of the hospitals from each other are as follows:

Table 3.1: Distance between Mangaung hospitals

Distance between Mangaung Hospitals			
Referring Hospital (District)	Receiving (Provincial/Academic)	Distance in km	Average times
National	Universitas	3,7	7min
National	Pelonomi	5,3	11min
Dr J.S Moroka	Universitas	69,5	57min
Dr J.S Moroka	Pelonomi	65,9	48min
Botshabelo	Universitas	66,1	58min
Botshabelo	Pelonomi	62,4	49min

www.municipalities.co.za

EMS personnel, who is the ECT, registered with the HPCSA, and are doing transfers from facility to facility, working within Mangaung, were selected.

3.4 Participants

The population of the study is healthcare providers within Mangaung Metropolitan. The target population are paramedics registered as ECTs with the Health Professions Council of South Africa, performing operation functions and directly involved with the transfer of critically ill or injured patients.



Figure 3.1: Map of Mangaung

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3.5 Sample and sampling procedure

A purposive sampling technique was used. This was done because the researcher intended on selecting the sample based on the target population's knowledge of the phenomena being studied. The sample and the procedure used for sampling ensured that data saturation was reached so that results can be reflective of the true phenomena being studied (Brink, Van der Walt and Van Rensburg, 2018:129).

The researcher facilitated access to participants by writing to EMS base managers. Participants then reached out to the researcher. Participants were also requested to share information with other participants who had not made contact with the researcher and ask for their cellphone numbers, which they agreed to. The information shared with the participants was that the study explored their experiences with regards to inter-facility transfers. The recruitment period was from December 2021 to September 2022. Saturation was reached after the 9th participant out of 12, three of whom did not consent to participating by face to face or telephonic interviews. Member checking of the participants was done using the HPSCA online portal. The participant's registration numbers were entered into the system for verification of registration.

3.6 Inclusion criteria

The sample included EMS personnel who were registered as ECT's with HPCSA, practicing in Mangaung Metro, Free State and employed by the Free State Department of Health.

3.7 Exclusion criteria

The sample excluded EMS personnel who not registered as ECT with HPCSA, or who's license was not current with HPCSA, was not working in the Mangaung Metro and those employed within the private sector.

3.8 Research instrument

The research instrument used was a focused group interview. The interview had open-ended questions (unstructured), with the use of prompts to probe the participants on issues that were of significance or were meaningful to them. The interviews were digitally recorded and transcribed verbatim. Each group consisted of a minimum of three participants due to space capacity and COVID-19 rules of distancing initially, but progressed to individual interviews, after consultation with the supervisor due to time constraints and availability of participants.

3.9 Trustworthiness

According to Brink, Van der Walt and Van Rensburg (2018:158), instrument validity seeks to ascertain whether an instrument accurately measures what it was supposed to measure, given the context in which it was applied. In this study, the researcher used content validity by ensuring that the interview structure was based on the literature review. The instrument (interview structure/questions) were then discussed with highly qualified personnel or experts in healthcare (EMS and in-hospital staff) to evaluate the data quality. The instrument was presented to a group similar to the participants of the study to pre-test the instrument for its rigour (Brink, Van der Walt and Van Rensburg, 2018:158).

Lincoln and Guba (1985), as cited in Brink, van der Walt and van Rensburg (2018:158), base trustworthiness on a model. This model proposes four criteria for developing trustworthiness:

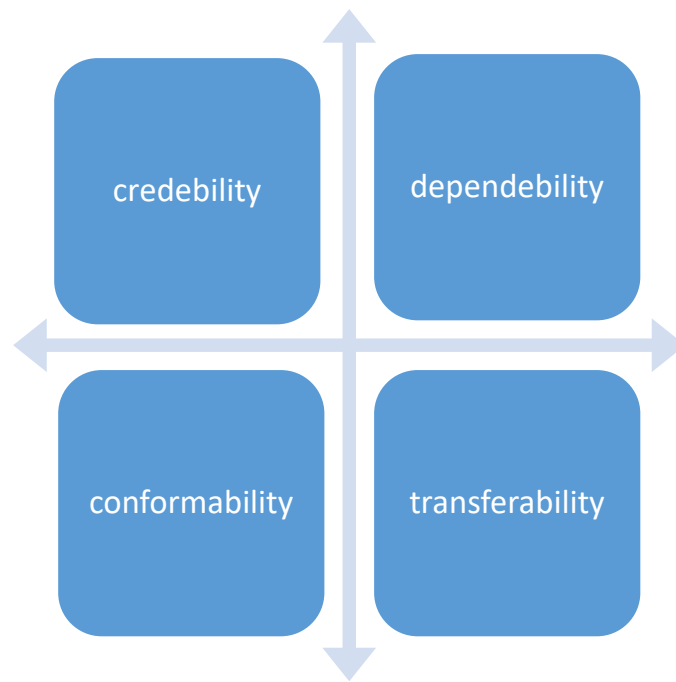


Figure 3.2: Trustworthiness model

3.9.1 Credibility

According to Brink, Van der Walt and Van Rensburg (2018:158), credibility alludes to confidence in the truth of the data and the interpretation thereof. Data must be collected in such a way that findings are credible/believable.



In this study, the researcher ensured credibility by engaging more with the research/data until saturation was reached so that there is greater understanding and knowledge gained into the phenomenon. The researcher also conducted a peer debrief amongst peers of similar status, who know the methods used or the phenomenon being explored. Member checks were also done. This means the findings of the study will be taken back to the participants to ensure that data interpretation was done accordingly, and they were not misinterpreted.

3.9.2 Conformability

Conformability refers to the compatibility of data in terms of accuracy, relevance or meaning. It ensures that the data is a representation of the information given by the participants and not necessarily influenced by the researcher (Brink, Van der Walt and Van Rensburg, 2018:159:

Triangulation was used to ensure that there is conformability and to remove the researcher's biases from the study. Inquiry audits were employed to examine the documentation produced by the researcher to ensure that the instruments are dependable.

3.9.3 Transferability

The ability to apply findings of the research in other contexts or other participants was observed under transferability by defining the observations within the specific contexts in which they occurred within the research (Brink, Van der Walt and Van Rensburg, 2018:159). Transferability was demonstrated by the purposive sampling selected by the researcher.

3.10. Ethics

Ethical approval was granted by the University of Fort Hare's (UFH) Ethics Committee. Approval to conduct the research within the FS, Mangaung, was sought from the Department of Health (Addendum 5, authorization documents). Written consent letters (Addendum 6- Informed Consent Form) were given to the participants before the conduction of the interviews. Consent to use participants' voice recordings were also sought from the participants. The participants provided their practicing registration numbers with the HPCSA for validation by the researcher. Confidentiality letters were also guaranteed to the participants (Addendum 2B- Confidentiality Agreements).

The EMS base managers were informed (via the district manager) and permission sought after approval from the Department of Health, to visit the sites in Thabanchu and Botshabelo (Addendum 5- Authorization Documents). A request to the FSCOEC manager in Bloemfontein was sent to use the venue for the ECTs in Bloemfontein on their off days.

3.10.1 Confidentiality

The participants are known to the researcher because of the validation of registration with HPCSA, but confidentiality was ensured by keeping password protected files on soft copy, with hard copies being locked away in a drawer. The information was not recorded in a way that linked the responses to the participants. Participants were coded rather, and these codes were known only to the researcher.

3.10.2 Anonymity

The participants remained anonymous, affording them the right to their privacy, and participated voluntarily. Participants were advised on how they could decide at any point within the study, if they wished to withdraw.

The participants were also given the right to refuse clarification of any information relating to the research provided by them without being ill-treated by the researcher.

3.10.3 Beneficence

The participants were protected from any harm, emotionally or otherwise, through the study. Again, if the participant felt any discomfort, they were advised that they may withdraw from the study without any penalties. Stressors, such as fatigue, were prevented by having a 15min tea break in-between the interview. Benefits to the society and the profession were explained to the participants so that they were able to outweigh the benefits versus the risks of the study anonymously, this informed their participation.



3.10.4 Justice

To promote the principle of justice, the researcher selected the participants fairly and treated the participants fairly. The researcher ensured that the resources, financial, human or material, were managed effectively and efficiently. The researcher also ensured that data was obtained from reliable sources and that the work of other authors was acknowledged and there was no plagiarism. This was ensured by submitting all documents to Turnitin. The researcher accessed different information sources to avoid biases.

3.11 Data collection procedures

Data was collected from 9 participants (ECTs) out of 11 in the Mangaung Metro via interviews. The interviews started as focused group interviews, with a minimum of 3 participants per group. There were 3 groups of 3 participants due to the space availability. After many months of trying for minimum participation, the process proved to be a challenge, as participants were never available at the same time or same day due to work constraints and personal reasons. The researcher had to resort to interviewing the remaining 2 participants individually, as time was a major factor in the

submission of the research. The transcription was done and submitted. The ECT's current registration was verified against the HPCSA database.

The information given to the participants included the title, the aims and objectives of the study. The background to the study was also shared with the participants for their better understanding of the study. This information was sent to the Bases for managers to share with the ECTs including consent forms and the researcher's contact details. The consenting ECTs then made contact with the researcher. Some ECTs were sought by the researcher, and further information was shared telephonically. Interviews of the ECTs practicing in Bloemfontein were held at the FSCOEC by the researcher. The researcher travelled to Thabanchu and Botshabelo to hold interviews of the ECTs in those areas further from Bloemfontein.

All participants were provided with a written consent letter before the interviews were conducted. The interviews took approximately an hour with a 15min tea break, as it was unstructured. The interviews were digitally recorded and transcribed verbatim and data collection ceased when saturation was reached.

The eligible participants were identified via available FS EMS data system on operational ECTs within the Department. Once these individuals were identified, the study was explained to the potential participants. Informed consent was sought while maintaining ethical standards. *Together in Excellence*

3.12 Data analysis

Transcripts were typed into a word document and coded. This was done as soon as the data collection began. Analysis was undertaken, using Ritchie and Spencer's five interconnected stages inherent in the framework analysis (Noble, Prout and Nelson, 2015, cited in Ritchie and Spencer, 1994):

3.12.1 Familiarization with data: listening to recordings, re-reading field notes and transcripts, and listening to key ideas and recurrent themes.

3.12.2 Identifying a thematic framework: reviewing the data and identifying key issues, concepts and themes informed by the research aims and the issues raised by the respondents themselves.

3.12.3 Indexing the data: systematically applying the thematic framework or index to each of the transcripts. This framework may be adjusted as it is applied to subsequent transcripts.

3.12.4 Charting: lifting the data from the transcripts and rearranging it according to its thematic reference. At this stage, a chart can be drawn up.

3.12.5 Mapping and interpretation: comparing and contrasting themes, searching for a structure, and using diagrams to explore relationships.

3.13 Conclusion

The research is a qualitative study, therefore, the researcher highlighted the methodology undertaken for the study, which included the setting, participants, research instrument used as well as the procedures used to undertake the study. The study was conducted under strict COVID-19 regulations, which were adhered to at the facilities. Ethical approval was also discussed in this chapter. The next chapter will present results and discuss them.



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CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

Patterns were derived from the analysis and were then coded to produce explanations of what had been said in the interviews (Brink, Van der Walt and Van Rensburg, 2018:1). These were then themed. This chapter will look at the different themes and discuss them further. The demographic information of the participants was as follows:

Table 4.1: Demographic information

Participant No	Age range	Sex	Race	EMS base	Years of service
P001	30-40	Male	African	Bloemfontein	8
P002	30-40	Female	African	Bloemfontein	5
P003	30-40	Female	African	Bloemfontein	7
P004	41-50	Female	African	Bloemfontein	8
P005	>50	Female	African	Thaba Nchu	7
P006	30-40	Male	African	Bloemfontein	5
P007	30-40	Male	African	Botshabelo	5
P008	30-40	Female	African	Botshabelo	6
P009	41-50	Male	African	Botshabelo	9

All of the nine participants were Black, six of them were between the 30-40 age range and two were aged 41-50, with one aged >50. Four participants were male, while the remaining five were female. There was 1 focused group of 3 participants. The second focused group had 2 participants that arrived on the day of the interview. The researcher had to resort to individual interviews, as the requirement was not met. Individual interviews of the rest of the participants continued thereafter. Five participants were based at the Bloemfontein base, so interviews were conducted at Bloemfontein EMS College. One participant was from Thaba Nchu but her interview was conducted in Botshabelo, as she was close by the Botshabelo EMS base. The three other participants were from Botshabelo and were interviewed at their base.

From the above participants' interviews, the data was transcribed and then co-coded and analysed as individual interviews. After recording the interviews, the researcher transcribed them verbatim. The transcription was sent back to the participants to confirm if everything was correct and written as accurately as they had said/meant. All participants verified the transcription to be true. The transcription was then sent to the co-coder for analysis. It emerged from the interviews that participants did not clearly understand some of the questions asked and needed more clarity and the rephrasing of what was being asked. Despite this challenge, the co-coder was able to devise themes and subthemes from the conducted interviews. These themes and subthemes will be discussed individually in this chapter.

Table 4.2: Experiences during interfacility transfer by ECTs

NO	THEMES	SUB-THEMES
1	Experiences and capabilities	1.1 Impact on the patients 1.2 Impact on ECT's
2	Lack of knowledge regarding inter-facility transfers of critical patients	2.1 Nature of information explored 2.2 Knowledge about consequences of inter-facility transfers of critical patients. 2.3 Best practice of a safe inter-facility transfer
3	Challenges experienced by ECT's regarding inter-facility transfers of critical patients	3.1 Ambulance 3.2 Equipment 3.3 Professional staff's attitude 3.4 Lack of communication between hospitals to hospital. 3.5 Scope of practice.
4	Strategies required to enhance safe inter-facility transfer of critical patients.	4.1 Regional meetings 4.2 Training (In service training) 4.3 procurement of equipment 4.4 Hire more ECP qualified persons 4.5 Salary improvement 4.6 Ambulance to be more equipped

		4.7 Employment of staff in the control centre 4.8 Improve communication between hospitals
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4.2 Themes and subthemes

4.2.1 Theme 1: ECT's conducting of inter-facility transfers of critical patients

Most of the participants had negative experiences that they had developed as a result of these transfers, such as feeling pressurized or bullied into transferring critical patients that were above their scope of practice; a feeling of helplessness due to lack of appropriate resources to help critical patients; tensions and frustrations between themselves and management regarding day to day functions. These negative experiences made them dislike performing any type of critical transfer and have a negative attitude towards the service altogether. Such experiences, therefore, had a negative impact on the patients and the ECTs themselves. This was because of a lot of challenges the participants shared, which overwhelmed them and, at times, risked patients' lives.

When asked if the participants had any good experiences to share, participant 002 expressed that there were none. Participant 003 agreed to that by adding that, *"On what 002 said, you know this thing of hospital it's a problem because you just asked us what transfer we did that was making us feel that it is good. On my side I don't remember anything because starting from the hospital with critical patient it's like they want this patient to be removed in front of them."* (Participant 003, female, 30-40 years)

This was in reference to the many critical transfers the participants undertook. The negative impacts of the ECTs' experiences are discussed further below.

4.2.1.1 Impact on the patients

Through the participant's narratives, there were indications that critically injured and ill patients were not receiving optimal care as the ECTs' capabilities were limited to giving this care. Critical patients required advanced interventions to be performed on route

and also be monitored during the transfer. These advanced interventions were, therefore, not done to/for the patients, yielding negative clinical outcomes. Participant 009 admitted to disconnecting a mechanical ventilator which assisted the intubated critical patient on route because he did not know how to use the machine. He resorted to using a BVM to ventilate the patient. The definitive management of the compromised airway is intubation, as it performs optimally to delivering oxygen to the patient via a ventilator, as compared to the BVM (Nee, Bengner and Walls, 2008:100). In another incident, participant 006 retold his experience transferring a critical patient when the patient's breathing deteriorated on route because he could not give the patient advanced intervention.

"I can say for one example I once did a transfer so the patient along the way changed the condition, so I had to call for backup in Bloemfontein for intubation and stuff. So, the backup took long but I managed to bag the patient up until the hospital..." (Participant 006, male, 30-40 years)

Participant 001 also alluded to removing a mechanical ventilator of the patient so that they may transport the critical patient.

"With regards to inter-facility transfers I think it's just the scope of practice that is controlling our, uh, because we transfer any type of patient, but the scope of practice limits us from some of the, transporting some of the patients, like ventilated patients. If I have to transfer a ventilated patient, I have to take off the ventilator and use a BVM. You must remember all the drugs that are being used during or to this patient, some are not on my scope of practice." (Participant 001, male, 30-40 years)

Although some of the critically ill or injured patients made it to the receiving hospital, their outcomes and prognosis were not followed up upon to see if the interventions received or not received benefitted the patient or not.

Participant 007 expressed how the challenges they faced within the department had negative effects on patients, as patients did not receive the care they needed due to the challenges encountered, such as the lack of equipment and the right personnel to be transporting the critical patient.

"Honestly when you get there, when you arrive on scene or when you arrive at the hospital where you are going to take the patient and at your destination and if you get

honest, tell them honestly that I don't have this and that but I'm here to transport the patient, there are those that assist, like some of their equipment can, they can actually borrow you so that you transport that patient. Not all their equipment is mobile so some of the equipment they can assist you with.” (Participant 007, male, 30-40 years)

“I mean like, what the patient needs. If the patient can get what they need for example the drugs. If the patient can get the right qualification that can transport that patient.” (Participant 007, male, 30-40 years)

Another concern expressed by participant 008 was that critical patients were sometimes left at the referring hospital because they were above the ECT's scope of practice, and this then had negative clinical outcomes on the patient as the critical patient could not receive tertiary services required in time.

“Sometimes you find that you have that challenge but at the end of the day maybe you, maybe the controller will say to you just leave the patient then, the patient is above your scope of practice.” (Participant 008, female, 30-40 years).

A study conducted by Verma, Singh, Shantanu and Sharma (2019:4), while trying to identify critical gaps in transferring trauma patients, found that patients who had a decreased level of consciousness and were supposed to be intubated (placement of a definitive airway), were not. They outlined how this may reflect a paucity of trained professionals who recognize the need or lack the ability to perform the skill. The ramifications of this were detrimental to the patient. This was the case with the ECT's experiences in conducting transfers of this nature. The discontinuation of ventilating the critical patient increased the potential of the mortality and morbidity of the patient. The impact that ECT facilitated inter-facility transfers of critical patients had on patients indicates a medico-legal risk. This aligns with Hawilo and Taneja's study in literature (2020:1) where they had advocated for highly qualified personnel to be the ones undertaking inter-facility transfers of critical patients as they are more equipped to deal with challenges arising from the transfer or troubleshooting against adverse events better than lower qualified personnel can.

4.2.1.2 Impact on healthcare workers

Evidently, the ECTs were worried about the patient's clinical outcomes. They expressed their wishes to transfer the critically ill and injured patients from hospital to

hospital with no challenges. The negative experiences and impact on patients were heartfelt by the participants and worsened their experiences with critical transfers, as they felt that they could not help the patients further with their limited capabilities and lack of resources.

Although there has not been any standardized definition of what a healthy workplace is, a Canadian study by Shamian and Jardali (2007: 8) has defined it, amongst many other things, as actions and practices that are put in place to improve worker's health and well-being, quality of care and patient safety.

The experiences of the ECTs gave a clear indication that their workplace was not healthy in many ways (which will be discussed in theme 4.3). The actions of their superiors and practices they were made to work under put them at risk of losing their operating licenses, as they were made to practise outside of their scope.

"The...should I say the department or management, they expect you to...they expect your scope to cover all patients, to cover all IHT patients so at times when you get a patient which is above your scope of practice you get negative energy towards you from your superiors. They feel that you don't want to do what you're supposed to do. They understand that it is not within my scope, I don't know why they...I think they get frustrated because if I get to the hospital and realize that this patient maybe needs a ventilator, I don't have a ventilator, I don't know how to use a ventilator then I get there and I tell them unfortunately I cannot transport this patient. Obviously, they're going to report me to my superiors and then when they calm down, they come with this negative energy feeling that you don't want to do what you are supposed to do."(Participant 007, male, 30-40 years).

Such coercion from management frustrated the ECTs, as they were made to perform tasks that were above their scope of practice, risking patient's lives. This resulted in ECTs having a negative experience and attitude towards their work, as they did not feel supported.

"Sometimes we don't have a choice. You will find that the patient is intubated. There is no ALS backup then you will have to transport the patient without backup, ALS backup." (Participant 008, female, 30-40 years).

"We are struggling a lot..." (Participant 001, male, 30-40 years). This was in relation to the experiences 001 had on the field as he retold the many challenges he had encountered with transfers of critical patients.

4.2.2 Theme 2: Lack of knowledge regarding inter-facility transfers of critical patients

Participants often expressed a lack of knowledge with regards to inter-facility transfers of critical patients. This knowledge ranges from their curriculum in relation to inter-facility transfers, to their scope of practice or best practice for a safe inter-facility transfer. This raised some concerns, as it indicated the possibility of a need for refresher courses. The participants did express how they would benefit from having courses provided to them to refresh or to add onto their existing scope of practice.

4.2.2.1 Nature of information explored

The participants had knowledge of how to treat or manage the patient during inter-facility transfers, however, they did not have knowledge of their curriculum during training with regards to inter-facility transfers. They did not know the exact processes or procedures required to facilitate an inter-facility transfer. Their knowledge of the current scope of practice was also explored. The participants did not seem to know fully what the current practices were for them and their different qualifications within EMS. Participant 004 (female, 41-50 years) battled to remember parts of the curriculum regarding inter-facility transfers and had this to say: *"I don't remember because usually at our college we didn't do the inter-facility transfer because it's only on the operational."*

"Yes, we were taught how to transfer the patient from the hospital bed to the stretcher." (Participant 006, male, 30-40 years).

Participant 007 (male, 30-40 years) remembers inter-facility-transfers being covered in the curriculum more under HEMS, *"What was covered I remember we did the flying in of patients, more HEMS related. How to calculate the oxygen that you're going to need for that type of a patient and then depending on the distance yes."*

"I think... curriculum in terms of what I've studied in terms of transfers? Mostly it was all about neonatal transfers where we used incubators and there is this new equipment that we are using but they have not yet acquired them, the Neo-puff. It is useful but

normally we borrowed them from the hospitals so that we can use them to ventilate the baby when we are transferring. Other than that, it's... it's only that.” (Participant 009, male, 41-50 years).

All the participants received training at the Free State College of Emergency Care, however, the participants had different knowledge of their training. During the interview, there was no indication on whether the participants had ever gone back to the college to refresh or update their knowledge on current training and protocols.

In a study conducted by Neumayer and Malone (2009:7), which looked into the collaboration of the delivery of rural health services between NSW ambulance and Greater Southern Area health services, it was found that in order for there to be progress in providing services and quality level of care, the training programmes to upskill healthcare workers (EMS and emergency department staff) needed to be clearly established and regularly delivered. This concern was expressed by the participants, as seen above, about the importance of receiving training for them to be able to provide quality services for critical patients. Furthermore, Jeffs et al (2013:3) had also placed great emphasis on the training of personnel undertaking inter-facility transfers of critical patients. Training can improve the personnels clinical skills and decision making, thus placing the personnel at a better position of treating and managing the critical patient using updated literature. This was highly recommended for the ECT's.

4.2.2.2 Knowledge about consequences of inter-facility transfers of critical patients

The consequences of not having enough knowledge on how to perform your job within this profession is detrimental, as it can lead to clinical or bodily harm to critical patients and put the ECT at risk of having their operating license revoked by the HPCSA. Participants understood that they needed to be adequately equipped to facilitate safe inter-facility transfers of critical patients and understood that they needed to have the knowledge to operate that particular equipment.

“From the start point I think it's to ensure that the equipment is operational, the oxygen is fully in the cylinder and then the vehicle is roadworthy, and all my drugs and vaco-litres are up to date and then, I think those are some of the things I need to check before I can go there.” (Participant 009, male, 41-50 years).

The participants were knowledgeable about how they needed to have particular skills to manage the critical patient and understood what would happen if they did not. Some skills were above their scope of practice, and they were, therefore, able to recognize the need to have another higher qualified personnel for assistance.

“When you find that the patient is above the scope, we have to call the correct person who is above you or call the doctor to arrange that patient. So, when we arrive at hospital must attend the patient quickly because you are under qualified for that patient.” (Participant 005, female, >50 years).

The participants were knowledgeable about how the challenges they encountered affected them and the patient negatively. They understood how strategies to mitigate against these challenges needed to be in place. Participants understood the importance of their safety and that of their patients. They had knowledge of the logistical part of running operations within EMS but were challenged in understanding how the processes of inter-facility transfers are initiated from hospital to hospital up until the very end of handing over the patient and what happens after.

In a similar study by Lambert and Wade (2018), their findings revealed that lower qualified personnel that carried out high acuity paediatric cases were not confident in doing so and these participants had acknowledged the poor outcomes that may be experienced in such incidences. Similarly, the above participants were also knowledgeable on the consequences of conducting inter-facility transfers of critical patients at their level.

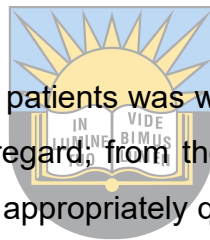
4.2.2.3 Best practice of a safe inter-facility transfer

Best practice of a safe inter-facility transfer depends on the ECTs' capabilities, their scope of practice and guidelines or protocols in place for them to adhere to, amongst other things. These guidelines are changing constantly depending on the newer research conducted with regards to the particular treatment of patients. The participants were not knowledgeable on the new guidelines and protocols, and standards they need to adhere to, as from 2020. This raised concerns as it meant that patients were being treated or managed using old protocol, which was not in line with the new guidelines.

“If they can do more CPG’s than I think the matter will be much better.” (Participant 004, female, 41-50 years).

“The other thing is that yes, we come from...a long time we come from college and if they can do something like a refresher after 6 months or a year, a refresher then they have to refresh us and they do the interview the way that we are doing. What we met on the streets, what we supposed to do so we have that dialogue with them.” (Participant 005, female, >50 years).

Participant 004 above was clearly unaware of the Clinical Practice Guidelines courses offered at the FSCOEC since their release. Other participants also admitted to being unaware of the courses running within their district. In support of this Slabbert and Smith, 2011, in their study, highlighted the importance of focused training of EMS personnel who conduct inter-facility transfers of critical patients as this may help ensure the best patient outcome and also help make the best use of limited resources available within EMS.



The safety for themselves and the patients was well established, as they understood what needed to transpire in that regard, from the maintenance of the vehicles and equipment they use, to having the appropriately qualified personnel with the required skill set to manage the patient.

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“We strap the patient on a stretcher with the straps and then to always try to drive in an immediate speed which is 120 or 100 and also to fasten all the equipment that are in the vehicle so that they are not lose that they can hit the patient. By doing so I think it is one of the things to maintain the safety of the patient.” (Participant 009, male, 41-50 years).

“The best practice I will start first with the vehicle with very well equipped and also with the relevant practitioner with a relevant patient that is not above your scope of practice, yes. I think that’s best practice.” (Participant 004, female, 41-50 years).

In a study conducted by Singh, MacDonald, and Ahghari (2014:9), they advocate having skilled transport teams, which may avert clinical deterioration and adverse events through timely critical interventions. This was clearly expressed by the ECT’s as they were well aware of the dangers of not giving best practice interventions to critical patients. The importance of this best practice cannot be exaggerated because

with it, the patient is protected from any bodily harm that may be caused by the ECT and the ECT is protected from litigations. The fact that the ECT works alone in the ambulance transferring critical patients, unlike the transfer teams that literature has suggested, makes it imperative that the best practice is undertaken at all times.

"I would say the right treatment to the right patient at the right time." Was participant 007's response to what a safe transfer was (male, 30-40 years), supported by participant 004 (female, 41-50 years):

"To add on that I think also I should be the right person who is transferring according to my scope of practice because if I'm not that one it also put the patient at risk because maybe I will do anything that I'm not supposed to do, yes."

"Best practice is one of the things that you can do whenever you are not comfortable or you do not know, or you don't know some of the things that you need to perform on this patient, you are free to consult a doctor or a high ranking officer in your operation to assist so that is regarded as one of the best practices because even if the scope is beyond yours but consulting and asking for assistance from the higher ranking officers is regarded as best practice." (Participant 009, male, 41-50 years)

"A safe transfer, like my colleague says, we need more ECP's. somebody who can take care of any kind of situation that may arise on route or a paramedic if we have somebody like that, or maybe if we can have as ECT's one ECP at the control room that we can contact at any time should there be a problem on route." (Participant 001, male, 30-40 years).

A study by McLane, Tate, Reid, Rowe, Estabrooks and Cummings (2020:15), while addressing communication breakdowns during emergency care transitions of older adults, found that suboptimal transitions in care between long-term care facilities and emergency department resulted in increased hospital length of stay, reduced quality care, adverse events and increased patient dissatisfaction. This is the reason why highly qualified personnel is required to transfer critical patients, so that such negative outcomes are prevented. This were also the experiences of the participants, as reflected above.

Furthermore, Lambert and Wade (2018:31) found that much data has been accumulated over the past 30 years that suggests that, to reduce adverse events in

inter-facility transfers, the best practice would be to ensure that the appropriate level of trained personnel be the one transferring critical patients, in the case of their study, with these critical patients being neonates. They further state how, in other countries, specialized teams are responsible for the transfer of critical neonates, but how, in the South African context, these critical transfers should ideally be attended to by ECPs who have completed a four-year bachelor degree in prehospital emergency care.

4.2.3 Theme 3: Challenges experienced by ECT's regarding inter-facility transfers of critical patients

Most of the participants experienced similar challenges during the process of transfers. These challenges ranged from vehicular, practitioner skills, call delays, scope of practice and human resources. The relationship between EMS and hospitals also seemed to be of a great challenge and posed threats to the well-being of patients, as the discoordination was apparent.

4.2.3.1 Ambulances

Most participants expressed how there was availability of ambulances, as there were even new ambulances procured. The problem they seemed to have was that of the shortage of staff to operate these vehicles and equipment to stock these vehicles. Only participant 009 felt that there was a shortage of ambulances within the department.

“Yes, the challenges that we are facing currently is this one of the shortages of vehicles and the delays when we get to the receiving facilities, so those are the most challenges that we are facing at the moment.” (Participant 009, male, 41-50 years).

“...and the other thing I think it's the rapid response because they normally struggle with us, EMS, we normally delay to respond to their calls due to shortage of vehicles normally on most days we operate with only four ambulances so you can imagine Botshabelo is big so for ambulances, so when will it be in Bloemfontein held there and then the other one would be needed to come in take patient to Bloemfontein, we will say you know what by taking two ambulances to Bloemfontein now we are going to compromise the patient even worse so rather just wait until those ambulances come back...” (Participant 009, male, 41-50 years)

Lambert and Wade's study (2018:29) also found that similar challenges in Johannesburg were experienced by healthcare workers. Their participants stated that

the possibility of delays experienced with inter-facility transfer was mainly due to a shortage of ambulances, the illogical placement of ambulances and delays in getting authorization in using private services. Their participants also felt that there were not enough ambulances to meet the demand of the city.

Participant 002's challenge with ambulances was that ambulances were getting 'stuck' at the hospitals when they bring patients there for example, CT scans and other similar appointments as they had to wait in line for the radiographers to be available.

"Stucking of the ambulance due to the hospital bed and oxygen ports in the hospital. Everyday it's happening." (Participant 002, female, 30-40 years).

Other challenges encountered with ambulances were that they were not equipped according to EMS standards and ECT protocols, for them to undertake transfers of critical patients.

"Yes. To add on that if they can provide us with relevant equipment like ALS's because we, our ambulance is like a BLS ambulance. There is nothing that you can point that this one is for ECT, this one is for transfers." (Participant 004, female, 41-50 years).

"There will be ambulances yes but are not fully equipped." (Participant 001, male, 30-40 years)



4.2.3.2 Equipment

Equipment was one common challenge participants had. It was either equipment was unavailable and needed to be procured or the equipment was there but purposefully not made available to the ECTs, and that equipment was not serviced regularly. Participant 002 expressed her frustrations of how not having the appropriate equipment had resulted in the demise of a critical patient and how this had ultimately affected her well-being.

"In what 003 said I think the actual DM of Mangaung must engage with the ALS before he can make a procurement of equipment and ask what exactly you guys are you needing. The critical equipment before they can go to others. If he can start with the critical equipment because I think some of the ECTs they lose the patience because of the, we don't have equipment so this critical patient they end up traumatizing us. You ask yourself if I'm going there, I'm like this. When the patient dies that thing even

if you are alone at home, it comes back when you refresh your mind. It comes back that if I was having this in could have done this maybe that patient would be saved. I think it's that thing." (Participant 002, female, 30-40 years).

"All in all, let's say its equipment and preparation for your patient. We do have some of the machines but are not working. I think it's only 2 ECGs that I'm working with and 2 NiBPs. The other 2 our NDip, yes that's the challenge because if someone is doing a transfer that needs to be monitored, they will ask me hey man can you borrow us NiBP machine so that we can monitor this particular patient to Bloemfontein. I have to borrow them the machine then for me I have to use the manual stuff because I do have them. The other challenge of a higher qualified person here in Botshabelo." (Participant 006, male, 30-40 years).

Yeung, Yeung, Chan, Lee, Tang, Graham and Chan (2008:162) found that the key to a positive inter-facility transfer outcome relied on pre-transport preparation that would ensure that all equipment to be used functioned properly to avoid any equipment mishaps during transfer.

"Equipment. That's the biggest issue. If I can make an example, sometimes you're transferring a patient to another institution then you come across an MVA, you are unable to assist that patient because the vehicles that we use inter-hospitals are not the same as the ones at operational. Not to say the ones at operational do have equipment but at least with the ones at operational you can do more on an MVA patient, unlike the inter-hospital vehicles." (Participant 007, male, 30-40 years).

"Yes, I would say so, however, in terms of equipment I'm not sure why our management is not procuring the equipment that is needed such as the infusion pumps syringe drivers..." (Participant 009, male, 41-50 years).

Lambert and Wade's study (2018:32) reported how all of their participants had expressed their dissatisfaction on the lack of functioning equipment to perform paediatric transfers. It seemed that their ambulances were more equipped for adult patients and this created challenges with regards to paediatric transfers. It was found in their study that ambulances lacked basic equipment such as oxygen. It is widely acknowledged that to conduct inter-facility transfers of critical patients, ambulances must be equipped with specialized equipment in good working order. This will prevent adverse events and poor clinical outcomes.

4.2.3.3 Professional staff's attitude

Most participants were especially unhappy with the relationship they had with the in-hospital staff. Within EMS, the participants were disgruntled by their seniors who did not assist them with the inter-facility transfers of critical patients, even though these patients were within the scope of practice of the senior. This caused ECTs to be unhappy with performing such critical transfers, as in-hospital staff did not understand their capabilities.

Participants 001, 002 and 003, amongst other participants, all agree that the relationship between EMS personnel and in-hospital staff, nurses and doctors is not good. The ECTs felt that this was because, sometimes when they got to the hospital to transfer critical patients and they asked the nurses about the patient to be transferred, the nurses would give them attitude and were rude to them because most times they do not know things, such as the patient's vital signs, the patient's condition or the management given by the doctor. This increased frustration on either side of the profession and caused tensions amongst EMS and in-hospital staff.

"The relationship is not good so far and it's coming a long way, a long way. Mostly the problem will be the person giving you the patient and don't have knowledge about the patient." (Participant 001, male, 30-40 years).

"Our relationship with the hospitals is not good at all. Like when you arrive, like 001 has mentioned, you ask them the hand over and now the sisters what they are doing now they say when you go with the transferring letter, guys can you please, like they will write the abbreviation of the medical and you don't understand that word, what is this? Please I don't know about the green letter please go to the doctor. Now the handover will be given by the doctors, and you find that the doctor is angry, I wrote everything there! Yes, doctor you wrote everything, but I don't understand and that side they are going to want the report from me." (Participant 002, female, 30-40 years).

"The attitude from the hospital when we are going to take the patient, really, the others are so rude because the others they just give you the referral letters, here's the patient. So, what's happened with the patient? No, it's the doctor who wrote there. So, but it's you who's giving me the patient. You have to explain to me what is going on with this patient and they will never talk to you nicely." (Participant 005, female, >50 years).

"I would say they have a bit of negative attitude because of what I said previously, because we do not have equipment and then again, the dispatch time and the time the call was received, the delay causes them to have a negative attitude and then the equipment obviously. You will get there without this and that but then obviously they feel that you are doing what it is you are supposed to do. On the other hand, it's not actually on you it's from somebody else, the department." (Participant 007, male, 30-40 years).

"My experience normally is with regards to the receiving facilities, normally internal medicine in Bloemfontein. The attitude toward us and the patient is unacceptable. They will just tell you wait there on the corridor we don't have beds and you will wait for four to five hours..." (Participant 009, male, 41-50 years)

"There is no relationship. As soon as they see you, they become so... I don't know, angry or what'. They've got that anger, as if you are bringing a load of what? Patients to them. You are creating, you are giving them work, I don't know maybe they don't want to work or something but... As soon as they see us coming." (Participant 008, female, 30-40 years)

"Yes, a CCA. We are always fighting. We are always fighting when it comes to a critical patient but just a transfer like I said maybe orthopaedic, there's no delay." (Participant 004, female, 41-50 years).



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This statement by participant 004 was in relation to their current seniors who did not assist them with transfers of critical patients that were within their scope of practice. This resulted in some of the participants having bad attitudes towards their seniors.

"Those people they don't want to work. I don't know here at Botshabelo and at Thaba Nchu that guy doesn't want to work. You can see that if I'm qualified like him, I will always be the one doing the work." (Participant 004, female, 41-50 years).

Only participant 007 felt differently than the rest of the group. Participant 007 felt that the negativity from the in-hospital staff was caused by the negative attitudes of the EMS personnel in performing their duties.

"Honestly, it's negative but then the negativity...I picked up that our guys caused that negativity because some of them are doing what they are not supposed to be doing

so unfortunately all of us will be painted with one brush because of certain individuals.”
(Participant 007, male, 30-40 years).

“On the attitude side that I’ve experienced, some of the sisters and doctors you find they have a bad attitude, especially if you’re telling them that this patient is above my scope. They will tell you we told control we need ALS. You will tell them yes; I am ALS but with limited scope. There’s no such thing, how can the ALS have limited scope. All ALS they are doing all of this kind. You will tell doctor; doctor please don’t push something that you don’t know. We end up fighting with words, changing of the words and this thing will reach the... I end up saying can I speak with the matron of the ward then the matron will come...” (Participant 002, female, 30-40 years)

One participant highlighted the attitude EMS personnel had towards ECTs. He felt that as ECTs were sometimes treated unfairly because of jealousy. This frustrated him; however, no other participant reported this to be of a challenge.

“You know the other thing we’re facing; I don’t know whether it’s the right word when they call it professional jealousy. You were a BLS, and you went with the ILS and ILS manager or supervisor. Now you are an ECT they become very much jealous of you. One thing they want to do is to frustrate you, you understand, instead of saying wow I’m happy now that I have an ECT and they call you put you down, this is how we would want to work with you...” (Participant 001, male, 30-40 years).

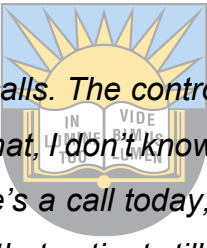
Participant 005 (female, >50 years) also alluded to the fact that the nurses’ negative attitudes sometimes came from them being short staffed at the wards they work in, so that when EMS comes with a transfer to that ward the nurses speak to them badly, out of frustration of being overwhelmed with patients.

“The other thing is, when you, more especially on the maternity, nowadays the sisters there is a shortage of nurses there. When you arrive you find one sister, one doctor or two sisters. When we arrive with the patient it seems as if we transport that patient just because we supposed to transport so I told them it’s not me who’s transferring this patient and the patient was discussed from doctor to doctor. I don’t know what the doctor say to the other doctor. I’m just transporting this patient to you but the way they talk to us, you can’t... sometimes you see that these sisters they are not supposed to talk with us like that because we are colleagues and I’m doing my job.”

4.2.3.4 Lack of communication between hospitals

Liu, Liu, Duan & Yang (2019:1) state that, as much as many practice guidelines have been developed in developing countries, both the referring and receiving facilities need to act together to ensure safety, continuity and coordination of patient care during the transfer process, which includes the initial decision to transfer. This entails that there be communication between the referring hospital, the EMS control centre, EMS personnel transferring the patient and the receiving hospital.

The participants felt that there was poor communication between hospital to hospital and between their control centre (call taker and dispatcher) and the ECT transferring the patient. The lack of communication between the hospitals delayed patient treatment as they found that either the transferred patient was not discussed, in that instance, they had to take the patient back to the referring hospital, or that the discussed patient's clinical presentation was not that which the patient presented with upon arrival at the hospital.



"The challenge is the delay of the calls. The control they delay with the call and when they delay the other thing you find that, I don't know whether it's the delay of the control or the changing of the shifts. There's a call today, they were called about 11 O'clock but tomorrow when I come in, I find that patient still waiting so I was wondering what...it was on the day and the night. The following day I have to transport this patient. The other one challenge is the transfer back. You find it's your first day, they told you about that transfer back that the patient was called for from about 4 to 5 days but you when you arrive on the first day you have to go and collect that transfer back." (Participant 005, female, >50 years)

"Most of the times it's between those doctors the one who is arranging for the patient. When you get in the hospital you find the doctor does not know anything about the patient. The doctor was not informed about the patient." (Participant 008, female, 30-40 years)

Participant 007 expressed how the lack of communication from referring hospital to EMS control centre and from control centre to the ECT discouraged him, as information usually given did not reflect the true nature of the call.

“The time between the call when it was received and when it was dispatched and again the time they waste at hospitals when we get there because in most cases what happens at the hospital, they log in a call, you get there and they’re still preparing the patient, so you must wait. Somehow it discourages me.” (Participant 007, male, 30-40 years)

Neumayer and Malone’s study (2009) found that, in order for there to be progress in delivering better services to communities, communication links needed to be established between all healthcare workers involved, being EMS and in-hospital staff. Lack of communication between hospitals and EMS have shown to be a great concern all around the world because these entities operate using different protocols, guidelines and procedures. It is important to find a link to integrate these so that patients do not suffer the consequences.

In support of this, Lambert and Wade (2018:32) reported one of their participants expressing his disappointment regarding communication between EMS and hospital staff as a result of different protocols that they have to adhere to. Interestingly, they had also reported poor communication from the control centre to EMS personnel, as the control centre personnel lacked knowledge of basic medical terminology and, therefore, could not correctly prioritize the transfer. Their study seem to have yielded similar results in Johannesburg as in Bloemfontein.

4.2.3.5 Scope of practice

The participants were knowledgeable on their scope of practice; however, this was an outdated scope of practice, as there seemed to be lack of knowledge on their current scope of practice, as of 2020. They were also unaware of the updated scope of practice or guidelines of their juniors and seniors (the different qualifications) in the field. They acknowledged the limitation of their scope in treating critical patients and expressed how they would like to mitigate against such challenges (discussed in theme 4).

“With regards to inter-facility transfers I think it’s just the scope of practice that is controlling our, uh, because we transfer any type of patient, but the scope of practice limits us from some of the, transporting some of the patients, like ventilated patients.” (Participant 001, male, 30-40 years).

Participant 003 (female, 30-40 years) supported Participant 001 by adding:

“You see when it comes to training, our scope of practice limits us in terms of transporting patients that we have to transfer like a patient that is intubated obviously I didn’t do intubation and I don’t know anything about the ventilator as a ECT, so now me transporting that patient I would say is out of my scope of practice actually and it means that somebody who has the highest qualification, an ECP must come do the call. At some point you find that we don’t have ECP that is available, yes and uh in operational I can say.”

EMS training is important in that it has shown to have great benefits on decision-making and leadership skills. It improved inter-agency collaboration and improved care through immediate treatment and/or referral (Woollard, 2015:5).

The participants were, at times, unable to give immediate care to the critically ill or injured patient as they lacked the ability and capability to do so.

Participant 004 (female, 41-50 years) indicated how the hospitals would call on the CCA on duty to help them intubate.

“Yes, because they know that this person he did know how to intubate.”

This clearly indicated that she was not aware of the current guidelines and protocols of the CCA, as this skill had been removed from their scope of practice as of 2020. When the interviewer indicated this change to participant 004, she responded by saying:

“I did hear that but I don’t know...”

Although the participants were aware that there were new CPGs out and available for them to use in the management/treatment of critical patient transfers, they were not knowledgeable on what those CPGs were. Only participant 009 had some knowledge of the changes employed in these CPGs.

“According to CPGs, recent CPGs, for trauma patients they want us to restrict spine by using vacuum mattress...” (Participant 009, male, 41-50 years)

Participant 007 (male, 30-40 years) expressed how the limitation of their scope of practice caused negativity towards them as ECTs from hospital staff and how this impacted on the inter-facility transfer of the critical patient.

“The...should I say the department or management, they expect you to...they expect your scope to cover all patients, to cover all IHT patients so at times when you get a patient which is above your scope of practice you get negative energy towards you from your superiors. They feel that you don’t want to do what you’re supposed to do. They understand that it is not within my scope, I don’t know why they...I think they get frustrated because if I get to the hospital and realize that this patient maybe needs a ventilator, I don’t have a ventilator, I don’t know how to use a ventilator then I get there and I tell them unfortunately I cannot transport this patient. Obviously, they’re going to report me to my superiors and then when they calm down, they come with this negative energy feeling that you don’t want to do what you are supposed to do.”

4.2.4 Theme 4: Strategies required to enhance safe inter-facility transfer of critical patients

The participants had different strategies that they would love to enhance to ensure that they mitigate against the challenges they encountered with inter-facility transfers. These strategies will be discussed in detail below.

4.2.4.1 Regional meetings

Participant 008 expressed how holding meetings between the hospital personnel and EMS personnel would be of great benefit in enhancing safe interfacility transfers. She highlighted how this would help both these departments in understanding what they require from each to ensure that transfers are done without any challenges.

“If they can have those meetings maybe once a month and discuss those problems that we have with them.” (Participant 008, female, 30-40 years)

Participant 001’s concern was more with regards to the EMS team and the experiences and challenges they encountered. He felt that they could achieve more as a group of ALS within the department by sharing their experiences and addressing them as a unit.

“I think it should start at our...with us. If we’re having sessions that we hold, discussing our challenges and finding ways as to...all ALS come together in our region, I can’t say Free State because it’s big, Mangaung, we call each other and we hear our experiences. We hear our challenges and all of that and see or find a way as to how we can deal with those challenges...” (Participant 001, male, 30-40 years)

Apart from meetings between clinical practitioners, participant 004 felt that meetings between themselves and management were paramount in enhancing safe inter-facility transfers. She expressed how these meetings could help management understand their needs and this, in turn, would help management in better procurement of equipment required to undertake a safe inter-facility transfer.

“I think they do have, only if they can come to us. They can come to us so that it’s only us who know what the challenges are. They don’t know about them but if they can come to us and ask us about that, how can we improve our day to day, maybe challenges, what can be done for you to give the best practice. It doesn’t seem like they don’t have but they can.” (Participant 004, female, 41-50 years)

4.2.4.2 Training

Participant 007 (male, 30-40 years) expressed how important it would be for him if both nurses and EMS personnel held workshops to educate each other on what it is that the other person’s scope of practice entails and how they could assist each other in ensuring that the patient receives the best care.

“I think if we can get workshops, if we can workshop our guys, they can get workshops, and maybe I think what we can do is every now and then maybe, if possible, we workshop them including the hospital staff, including the nurses or doctors so, just a workshop. Generally, on patient treatment, I would say...” (Participant 007, male, 30-40 years)

“I think what needs to be done, because I’ve noticed that even our managers don’t know our capabilities as their personnel, so if maybe we can with our management to learn our capabilities according to our qualifications, then they will know how to manage accordingly when the shift starts and then there is a transfer then there won’t be any delays all those commotions.” (Participant 009, male, 41-50 years)

“As much as the nurses that are working in the ICU wards that are left all night alone or maybe not even all night, they are monitoring patients on all these ventilators and all these drugs and everything, if there is such thing with nurses, why can’t there be such a thing with us you understand, so that we get to know, we get the training. Now and then, there is training on the ventilator. When the new ventilator comes in now and then there is training on these ventilators. We know how to handle these things

because another day I transported a patient on an infusion pump. Somewhere somehow the line kinked. The alarm went off. I don't know how to use it." (Participant 001, male, 30-40 years)

"Our college is supposed to function, or they're supposed to do a whole lot of refreshers in-service training. A whole lot of that and they have to find the way to equip people out there because the need out there should point to them that we have a college but why are our people still like this you understand. So, if most of the research should probably...the department should face it to our college, college we are having this much problem in the province. What can we do? Please find out what can we about this." (Participant 001, male, 30-40 years)

"To add on what 001 said, in service training would also help with giving us as personnel, as ALS, the...restore our confidence in treating the patients because you find that some of the transfers that are being delayed are between, I mean the inter-facility transfer is due to sometimes you find that some of the ECT's have lost that confidence to treat the patient." (Participant 003, female, 30-40 years)

"The other thing is that yes, we come from a long time we come from college and if they can do something like a refresher after 6 months or a year, a refresher then they have to refresh us and they do the interview the way that we are doing. What we met on the streets, what we supposed to do so we have that dialogue with them." (Participant 005, female, >50 years).

4.2.4.3 Procurement of equipment

"I'm going to go back again to equipment. Procurement of equipment." (Participant 007, male, 30-40 years)

Participant 007 above expressed, multiple times, the importance of procurement of equipment they lack on their units to undertake inter-facility transfers. This was also agreed upon by participant 009.

"...in terms of equipment I'm not sure why our management is not procuring the equipment that is needed such as the infusion pumps syringe drivers..." (Participant 009, male, 41-50 years)

Participant 002 shared the same sentiments with participants 007 and 009. She also highlighted the importance of management's consultations with them in employing the strategy of procuring equipment, since they had knowledge of what is required operationally for them to undertake inter-facility transfers.

"In what 003 said I think the actually DM of Mangaung must engage with the ALS before he can make a procurement of equipment and ask what exactly you guys are you needing. The critical equipment before they can go to others. If he can start with the critical equipment because I think some of the ECT's they lose the patience because of the, we don't have equipment so this critical patient they end up traumatizing us." (Participant 002, female, 30-40 years)

Participant 004 discussed how she thought that the DoH did not have enough resources to procure but had resources to outsource services for their personnel and equipment. She expressed how, what she sees as management's failure to assist them, negatively affected her in the service.

"I think they don't have. What I usually see nowadays they usually outsource. They outsource maybe some company so that they can maybe control those challenges. They don't come to us. What they do they criticise, but they don't come to us, why this and this happened? Why do you guys don't do this and this so that we can tell them that if you can provide us with this and this and I think..." (Participant 004, female, 41-50 years)

4.2.4.4 Hire more ECP qualified persons

"I think also it should be, it should start there at the top, people that are managing EMS, let's say Free State they, I can say the highest qualification now is intermediate. Now if its intermediate I don't think they will understand the necessity of the...they would know how important it is to have proper equipment. They would not understand why they should buy ventilators for the ECP's or why should they hire more ECP's and put them on the salary level that they qualify on or also to fix the salary level for other qualifications like ECT's I mean you find that as an ECT you have 7 years you're still on the same grade but according to the OSD you should be on grade 2, I mean if only the top management can be changed according to me. Highly qualified people can be there, and it will be easier to manage." (Participant 003, female, 30-40 years)

This was expressed by participant 003. She felt that the higher qualification not only had the necessary clinical skills to manage inter-facility transfers of critical patients, but also possessed better leadership and management skills that could help the personnel on both clinical and administrative basis.

Participant 007 (male, 30-40 years) felt that critical patients needed the right treatment by the right qualified personnel at the right time. He expressed this acknowledging that the ECT scope of practice was limited for the critical patient and that the critical patient, therefore, required ECP interventions.

“I mean like, what the patient needs. If the patient can get what they need for example the drugs. If the patient can get the right qualification that can transport that patient.”

The importance of highly qualified personnel transferring the critical patient was also made apparent by participant 008 (female, 30-40 years) when she acknowledged its safety.

“At least if you don’t have that ECP, one of the doctors must jump into the ambulance and escort the patient for the patient to be safe.”

This evidently highlights the need for the department to hire highly qualified personnel, who, in this case, are the ECPs. Participant 001 supports this by also stating that for a safe transfer, they need more ECPs who will assist them.

“A safe transfer, like my colleague says, we need more ECP’s. somebody who can take care of any kind of situation that may arise on route or a paramedic if we have somebody like that, or maybe if we can have as ECT’s one ECP at the control room that we can contact at any time should there be a problem on route.” (Participant 001, male, 30-40 years).

Sae-Sia, Sangchan, Songwathana, Makpadup, Narktong and Marksri (2018:90) in their study, state that the reduction of mortality and morbidity rate among patients can be improved by ensuring that patients receive the quality of care they need from the scene to the emergency department and also inter-facility transfer. In the case of the ECTs, the quality care critical patients need is that of the ECPs who are able to treat more vastly with their more advanced scope of practice and interventions.

The need for highly qualified personnel to be transporting critical patients was also highlighted by Lambert and Wade (2018) in a South African study looking into challenges relating to the inter-facility transport of high acuity paediatric cases in Johannesburg. They found that the infant and neonatal mortality rate remained unacceptably high, one of the reasons being that the appropriate level of care had not been provided during transfer. They further stated how poor clinical outcomes may result, unless there is initiation of appropriate interventions by appropriately qualified personnel (Lambert and Wade, 2018:29), in this case being the ECP.

4.2.4.5 Salary improvement

Participant 003 introduced a different challenge from the rest of the participants when she expressed how the current management's inability to assist them be on their relevant salary scale had much to do with the fact that they were below the qualification required to lead and manage the service, hence they did not understand the administrative work that needed to be done in ensuring that the ECTs are translated into their relevant salary levels. She further expressed how having higher qualified personnel, with such skills would be better for them so that they are assisted accordingly.

"...and put them on the salary level that they qualify on or also to fix the salary level for other qualifications like ECT's I mean you find that as an ECT you have 7 years you're still on the same grade but according to the OSD you should be on grade 2, I mean if only the top management can be changed according to me. Highly qualified people can be there, and it will be easier to manage." (Participant 003, female, 30-40 years)

"...and the hospital and also hospital seniors just to understand the, how do we operate because if I can say training, yes, we are getting trained, but I mean further I can say but at the end of the day, people leave because of our salary and they feel that I cannot stay in Free State because they haven't used the OSD adjustment. They know that if I go to Jo'burg I'll get something better than what I'm getting in Free State, so people get trained, they leave." (Participant 003, female, 30-40 years).

In a study conducted by Hackland and Stein (2011:65) while identifying factors influencing the departure of South African paramedics from operational practice, it was

found that there was an extensive number of factors shared by the respondents. They presented the top 15 factors. Out of these, they found that, in the top 3, was dissatisfaction with remuneration (65%). This was the current case with the ECT's pay rate not being effected after they had qualified and started practicing as ECT.

Similarly to Hackland and Stein's study (2011), the participants expressed a great level of frustration and intention to leave operational work. Remuneration played an integral part in the participant's livelihoods, as they currently could not meet their needs and those of their family member's. They further expressed frustration outside of their work life due to what they felt was inadequate remuneration.

Another more current similar study is by Blau and Chapman (2016). While determining why EMS professionals leave the workforce, it yielded similar results to Hckland and Stein (2011). They also found that extrinsic job satisfaction (e.g. pay and benefits) had a significant role in determining the EMS professional's intent to leave the job or the profession. In support of the participant's need for translation into an ECT salary after ECT training, Blau and Chapman (2016:S110) found that dissatisfaction with remuneration was as a result of ALS having higher salary expectations, given their increased investment in education.



4.2.4.6 Ambulance to be more equipped

The participants agreed that their ambulances needed to be more equipped for the use of inter-facility transfers of critical patients. They shared information on how some of the equipment was available but little for all ambulances to use, and so they had to share the equipment. This was disadvantageous because if one vehicle had the equipment and another vehicle received a critical patient in their care, then that critical patient was not monitored correctly for them to treat the patient accordingly.

“Yes, and you find that as an ECT we don't have more, we are not equipped, the tools that we have to use as an ALS. The ALS they have all equipment because on the other one why I say that because on the SPO2 you find that they have everything ALS but us...” (Participant 005, female, >50 years)

“All in all, let's say its equipment and preparation for your patient. We do have some of the machines but are not working. I think it's only 2 ECG's that I'm working with and 2 NiBP's. The other 2 our NDip, yes that's the challenge because if someone is doing

a transfer that needs to be monitored, they will ask me hey man can you borrow us NiBP machine so that we can monitor this particular patient to Bloemfontein. I have to borrow them the machine then for me I have to use the manual stuff because I do have them.” (Participant 006, male, 30-40 years)

Ambulances have guidelines and lists of equipment that needs to be in them. The DoH has teams that usually do inspections to see if the correct specification of the equipment and the correct amount of the equipment is indeed in the vehicle. If the EMS base being inspected meets the requirements, they get a certificate of compliance. Participant 004 felt that these requirements were not met as ambulances were not fully equipped as they should.

“I think if the department can hire more qualified person and if they can give us more training. If they don’t hire than they provide us with more training and also if they can...our ambulance, they can be more equipped as they should.” (Participant 004, female, 41-50 years)

“I think our managers need to employ personnel and buy IHT vehicles and buy proper equipment for transfers so that we know this equipment, this vehicle is for only transfers so we will have a proper and safe transfer all the way if we can have that.” (Participant 006, male, 30-40 years)



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4.2.4.7 Employment of staff in the control centre

Participants 002 and 003 expressed how employment of higher qualified personnel or personnel who was more clinically experienced would benefit them as a service because this person would be able to classify or code cases coming into the control centre accordingly. This would help in dispatching the necessary personnel to the case, preventing delays. This person would also ensure that receiving and referring hospitals are aware of the patient’s condition and EMS movements so that necessary preparations are done for the critical patient.

“First of all, it must start with the control centre. I feel that control centre should employ, on...okay, with the, in terms of qualification, they should be able, employ people that should be able to class calls according to qualification. I mean if you know that you’re sending a BLS they know that a BLS obviously will be able to handle that call, also, take enough information so that when you dispatch you don’t end up sending a wrong

qualified person I mean yes a wrong qualified person of which at the end of the day you'll get frustrated there and also get demoralized by the situation or been intermediate been called because they know that I cannot do this. I cannot handle this patient. So, control centre should be, they should go for more training if I can say again.” (Participant 003, female, 30-40 years)

“Adding on what 003 said I don't know if it's possible on the transfers control centre if they can put ALS there so that, on the transfer note it's written receiving doctor, when they log the call she will ask who is the receiving doctor. The receiving doctor is doctor who and then the numbers are there. The transfer doctor is this one then the numbers are there. Then before, especially on the critical patient, before he/she can dispatch the ambo, she calls the receiving doctor, doctor are you aware of the patient that's coming from National, a diabetic patient? Patient that has been intubated, transferred by doctor who. Are you aware of that patient? Then the doctor will tell the dispatcher, no I am not aware or I'm aware. If he's not the dispatcher is coming back to the caller, doctor we called the receiving doctor. The doctor is not aware of the transfer that you are transferring. Can I conference you with him or can you call him and make the arrangements for the patient before I can dispatch the alpha and then when you are done with the arrangement you will call us again and then I will dispatch the alpha and then I think it's going to work in that way.” (Participant 002, female, 30-40 years)

A literature review by Sae-Sia *et al.* (2018:90) titled “Trauma care in hospital, emergency department and inter-facility transfer” found that another factor requiring intervention to reduce death was that of delayed response time interval between call receipt and arrival on scene or during the transferring the patients to an emergency department. The delayed timeresponse was as a result of poor clinical decision making, which compounded the lack of communication between dispatcher and operational personnel. This is true with EMS's control centre personnel that is not well trained in clinical decision making. Attention to this detail may improve control centres' knowledge on patient's clinical condition and, therefore, whom to dispatch for which patient at what time, thereby reducing delays to patient care and probable death.

4.2.4.8 Improve communication between hospitals

The participants mostly felt that communication between hospitals was poor. They did not communicate about the patient, or, if they did, did not give the receiving doctor a

true reflection of the patient's presentation. This impacted negatively on them because when they got to the receiving hospital, they were made to wait with the critical patient on their stretcher for an available bed or to take the patient back to the referring hospital.

"I think if they can deal with those sisters at hospitals and the patients that are sent to another hospital without any discussion with the other doctor, yes, I think that's all."
(Participant 008, female, 30-40 years)

This poor communication between the hospitals also made participant 002 distrust the referring doctor. They would then take it upon themselves to call the receiving doctor to verify that indeed the patient has been accepted before transferring.

"So, I usually do that if I arrive, I check the receiving doctor, okay doctor who transferring. I'm asking the transferring doctor, can you call this doctor and...be aware that he's expecting, he's aware of the patient that is coming then the doctor that doesn't have attitude understands the situation. She will call or then call without hesitating but others they will tell you I already arranged you see." (Participant 002, female, 30-40 years)

"Then before, especially on the critical patient, before he/she can dispatch the ambo, she calls the receiving doctor, doctor are you aware of the patient that's coming from National, a diabetic patient? Patient that has been intubated, transferred by doctor who. Are you aware of that patient? Then the doctor will tell the dispatcher, no I am not aware or I'm aware. If he's not the dispatcher is coming back to the caller, doctor we called the receiving doctor. The doctor is not aware of the transfer that you are transferring. Can I conference you with him or can you call him and make the arrangements for the patient before I can dispatch the alpha and then when you are done with the arrangement you will call us again and then I will dispatch the alpha and then I think it's going to work in that way." (Participant 002, female, 30-40 years)

"Then this thing of chaos, they didn't...and then it ends up bringing the attitude out because you want that side to them to take the patient because patient is for, they said is coming to internal medicine, I'm here now you're telling me that you didn't arrange and then it's being a long way to go back to that doctor again with a critical patient."
(Participant 002, female, 30-40 years)

Participant 005 felt that sometimes even with communication by both parties (the referring and the receiving doctor), the receiving end would sometimes not want to take the patient due to lack of human resources on their side and they would therefore allow their frustration to treat EMS personnel unfairly.

“The other thing is, when you, more especially on the maternity, nowadays the sisters there is a shortage of nurses there. When you arrive you find one sister, one doctor or two sisters. When we arrive with the patient it seems as if we transport that patient just because we supposed to transport so I told them it’s not me who’s transferring this patient and the patient was discussed from doctor to doctor. I don’t know what the doctor said to the other doctor. I’m just transporting this patient to you but the way they talk to us, you can’t... sometimes you see that these sisters they are not supposed to talk with us like that because we are colleagues and I’m doing my job.” (Participant 005, female, >50 years)

Ashokcoomar and Naidoo (2016:518) outlined the importance of communication and coordination between all role players in their study, which investigated delays in the transfer of neonates between healthcare facilities. They found that, to achieve a high standard of neonatal care and monitoring, it was essential that there be effective communication. This was also found to yield clinical excellence. The ECT’s experiences with poor communication within facilities was clearly met with delays in patient care and frustrations between themselves and the in-hospital staff. This had a negative impact on the patients, as some patients had to be transferred back to the referring hospital and could not receive appropriate secondary or tertiary care.

4.3 Conclusion

This chapter presented how analysed data was grouped into themes and sub-themes as per the participant’s interviews. The results were then discussed and backed up with literature for the reader’s understanding of the explored experiences, challenges and strategies to enhance the practice of participants. The participant’s experiences were mostly negative with regards to inter-facility transfers of critically ill or injured patients. This was due to the many challenges participants expressed in this chapter. The strategies to required to enhance safe inter-facility transfers were also discussed as the participants felt that these were strategies that could help them improve their

working environment and patient outcomes. The conclusion, summary, limitations and recommendations of the study are discussed in the next chapter.

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CHAPTER FIVE

CONCLUSION, SUMMARY, LIMITATIONS AND RECOMENDATIONS

5.1 Conclusion

The purpose of the study was to explore the current operational ECTs' experiences on inter-facility transfers of critically ill or injured patients with three specific objectives which were: to explore the ECTs' experiences on inter-facility transfers of critical patients in Mangaung, to describe the challenges encountered by ECTs concerning inter-facility transfers of the critical patients in Mangaung and to describe the strategies that can be implemented to improve the experiences of ECTs during inter-facility transfer of critically ill patients.

Four themes emerged from the findings of the study: 1) ECT's conducting of inter-facility transfers of critical patients, 2) assessment of knowledge regarding inter-facility transfers of critical patients, 3) challenges experienced by healthcare workers regarding inter-facility transfers of critical patients and 4) strategies required to enhance safe inter-facility transfer of critical patients.

The study findings indicated that healthcare workers did not have good experiences with inter-facility transfers of critical patients. This was based on factors such as having to transfer critical patients, which were above their scope of practice and, therefore, limited them in performing required interventions on/for the critical patient. Their negative experiences also stemmed from the poor inter-personal and professional relationships they had amongst themselves, their managers and the hospital staff (doctors and nurses). The lack of appropriate human resources and equipment contributed greatly to the negative experiences they had when doing inter-facility transfers. Often the healthcare workers' (ECTs') qualifications and/or capabilities were misunderstood, and this resulted in greater frustrations between them, that is, doctors and nurses referring critical patients. The environment in which these inter-facility transfers were conducted, was not conducive enough for the ECTs and this led to their overall negative experiences.

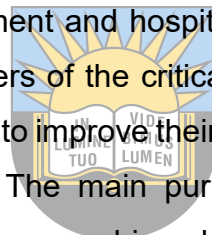
5.2 Summary

Due to the low level of care and distance of the surrounding hospitals in Mangaung, critical patients are usually transferred to Bloemfontein's Regional and Academic

hospitals. These transfers are done by EMS personnel. Currently, the highest qualification of paramedics within Mangaung is an Emergency Care Technician (ECT).

Qualitative research with an explorative design and phenomenological approach was undertaken in this study to understand participants' lived experiences. The study objectives were to: 1) experiences of healthcare workers regarding inter-facility transfers of critical patients, 2) assessment of knowledge regarding inter-facility transfers of critical patients, 3) challenges experienced by healthcare workers regarding inter-facility transfers of critical patients and 4) strategies required to enhance safe inter-facility transfer of critical patients.

The study explored the experiences of health care providers with regards to inter-facility transfers of critical patients in Mangaung, Free State. All the participants had negative experiences with inter-facility transfers because of the non-conducive environment in which they had to perform these transfers. They also expressed their dissatisfaction with their management and hospital processes/procedures employed with regards to inter-facility transfers of the critical patients. They highlighted similar strategies needing to be employed to improve their overall experience with inter-facility transfers of the critical patients. The main purpose of exploring the health care providers' experiences in the study was achieved.



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5.3 Limitations of the study *Together in Excellence*

The study was conducted in one municipality within Free State, with only nine out of 12 participants consenting to participate in the study. However, the findings of the study can be generalized to other municipalities, as the setting is similar in that highly qualified EMS personnel conducting inter-facility transfers in the other municipalities are also ECT qualified. The participants worked different shifts, and this was challenging, as they could all almost never be available at the same time and, therefore, individual interviews had to be conducted instead. Some participants were in isolation due to COVID-19/flu-like symptoms and ended up not being interviewed. They did not consent to virtual interviews.

5.4 Recommendations

- The Department of Health should procure the necessary and relevant equipment for the purposes of inter-facility transfers of critical patients.

- There should be employment of highly qualified personnel (ECP) for operations that is capable of transferring critical patients.
- Improve communication between EMS, the control centre and hospitals, to ensure smooth and procedural transfer processes.
- Training of hospital staff on the different levels of qualification and capabilities of EMS personnel. Consistent training of EMS personnel on current clinical updates/guidelines. Training of personnel holding supervisory/management positions.
- Frequent meetings/workshops to be held to address challenges encountered amongst the ECTs themselves and also between themselves and hospital staff.
- Translation of ECTs to the correct salary scale, as per the occupation specific dispensation (OSD).



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APPENDICES

Appendix A: Ethical consideration



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HEALTH RESEARCH ETHICS COMMITTEE

P.O Box 1054
East London 5200
Tel: +27 (0) 43 704 7368
E-mail: dgoon@ufh.ac.za

ETHICAL CLEARANCE CERTIFICATE REC-100118-054

Certificate Reference Number: **Ref #2021=10=14=MohotoN**

Project title: Experiences of health care providers with regards to inter-facility transfers of critical patients in Mangaung Metro, Free State

Nature of Project: Masters of Public Health

Principal Researcher: Mohoto N

Student Number: 201928135

Supervisor: Dr N Nkutu

On behalf of the University of Fort Hare Health Research Ethics Committee (HREC), I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instruments(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the HREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the HREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

The HREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
 - Any unethical principles or practices are revealed or suspected
 - relevant information has been withheld or misrepresented
 - regulatory changes of whatsoever nature so require
 - the conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.

Appendix B: Permission from Free State Department of Health

Ms N Mohoto
School of Public Health
University of Fort Hare

Dear Ms. N Mohoto

Subject: Experiences of Health Care Providers with Regards to Inter-Facility Transfers of Critical patients in Mangaung Metro, Free State

- Please ensure that you read the whole document, Permission is hereby granted for the above – mentioned research on the following conditions:
- Participation in the study must be voluntary
- A written consent by each participant must be obtained.
- Serious adverse events to be reported to the Free State department of health and/ or termination of the study
- Ascertain that your data collection exercise neither interferes with the day-to-day running of **Free State Province Provincial Offices** nor the performance of duties by the respondents or health care workers.
- The DOH expects that the researcher will be the responsible data manager according to the POPI Act. The responsibility thus lies with the researcher to ensure that the processing of all participant's personal information and research data is lawful according to the stipulations of the POPI Act (Protection of Personal Information Act 4 of 2013).
- Confidentiality of information will be ensured and please do not obtain information regarding the identity of the participants.
- Department of Health to be fully indemnified from any contravention of the POPI Act as you conduct this study.
- **Research results and a complete report should be made available to the Free State Department of Health on completion of the study (a hard copy plus a soft copy).**
- Progress report must be presented not later than one year after approval of the project to the Ethics Committee of the University of Fort Hare and to Free State Department of Health.
- Any amendments, extension or other modifications to the protocol or investigators must be submitted to the Ethics Committee of the University of Fort Hare and to Free State Department of Health.
- **Conditions stated in your Ethical Approval letter should be adhered to and a final copy of the Ethics Clearance Certificate should be submitted to sebeelats fshealth. ov.za/ wantshuws fshealth. ov.za before you commence with the study**
- No financial liability will be placed on the Free State Department of Health
- **Please discuss your study with Institution Manager on commencement for logistical arrangements.**
- Department of Health to be fully indemnified from any harm that participants and staff experiences in the study
- **As part of feedback you will be required to present your study findings/results at the Free State Provincial health research day**

Trust you find the above in order.

Appendix C: Consent form



Consent Form

University: University of Fort Hare

Faculty: Health sciences

Department: Public Health

Student: Miss Nokwanda Mohoto

Student Number: 201928135

Email address: nokwandamohoto@yahoo.com

Contact Details: 072 5027 502

Supervisor: Dr N. T. Nkutu

Email address: nnkutu@ufh.ac.za

Contact details: 073 742 0354

Ethical Approval reference number: #2021=10=14=MohotoN

Declaration by participants

By signing below, I (Name).....agree to take part in a research study entitled: Experiences of Health Care Providers with Regards to Inter-facility transfers of Critical Patients.

I have read or had read for me the participant information and consent form and it is written in a language with which I am fluent and comfortable.

I have had a chance to ask questions and all my questions have been adequately answered.

I understand that taking part in this study is voluntary and I have not been coerced and understand I can withdraw my participation at any time of the study and I will not be penalised or prejudiced in any way.

Signed at (Place)..... on (Date).....2022

.....

Signature of the participant

Declaration by the researcher

I ...Nokwanda T. Mohoto...Declare that:

I have explained the study information to


I encouraged him/her to ask questions and took adequate time to answer them.

I am satisfied that he/she adequately understands all aspects of the research as discussed above.
University of Port Harcourt
Together in Excellence

I did/ did not use an interpreter

Signed at (Place).....on (date).....2022

.....

Signature Researcher

Appendix D: Interview guide

Interview Guide (EMS)

SECTION A

DEMOGRAPHIC INFORMATION

1. Race ☐ Black ☐ White ☐ Coloured ☐ Indian
2. Age ☐ 30-40 ☐ 41-50 ☐ >50
3. Sex: Male ☐ Female ☐
4. Number of years in service
5. EMS base ☐ Bloemfontein ☐ Thaba Nchu ☐ Botshabelo
6. Registration Number:

SECTION B

KNOWLEDGE AND EXPERIENCES OF EMERGENCY CARE TECHNICIANS REGARDING INTER-FACILITY TRANSFERS OF CRITICAL PATIENTS

7. How often do you conduct inter-facility transfers of critical patients in a cycle/month?
☐ 1-5 times ☐ 6-10 times ☐ >10 times
8. Please explain your curriculum with regards to inter-facility transfers during your training.
9. Please explain the characteristics of a safe inter-facility transfer of critical patients.
10. What are your experiences with inter-facility transfers of critical patients?
11. What is regarded as best practice in inter-facility transfer of critical patients?
12. What are the attitudes and behaviours that are experienced currently during inter-facility transfers of critically ill and injured patients?
13. What are the views of ALS paramedics and doctors on all aspects that will guide safe inter-healthcare facility transfer of critical patients in Mangaung Metro, Free State Province, South Africa?

CHALLENGES ENCOUNTERED BY EMERGENCY CARE TECHNICIANS

- 14.** To your knowledge, what are the issues / factors surrounding inter-facility transfers of critical patients?
- 15.** Explain the relationship between pre-hospital and in-hospital staff in facilitating safe inter-facility transfer of critical patients?
- 16.** What are the day-to-day challenges that you encounter that influence the safe inter facility transfer in the Mangaung Metro service?

STRATEGIES THAT CAN BE IMPLEMENTED TO IMPROVE CLINICAL OUTCOMES DURING INTER-FACILITY TRANSFERS OF CRITICAL PATIENTS

- 17.** In your view, what strategies would enhance safe inter-facility transfer of critical patients?
- 18.** To your knowledge, does the DoH have enough resources to implement the strategies?



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Appendix E: Research participation



Research Participation

University: University of Fort Hare

Faculty: Health sciences

Department: Public Health

Student: Miss N. Mohoto

Student Number: 201928135

Email address: nokwandamohoto@yahoo.com

Contact Details: 072 5027 502

Supervisor: Dr N.T Nkutu

Email address: nnkutu@ufh.ac.za

Contact details: 073 742 0354

Ethical Approval reference number: #2021=10=14=MohotoN

To who it may concern

I am conducting a research study towards the partially fulfilment of my Masters in Public Health (MPH) at the University of Fort Hare, with the following:

Tittle: Experiences of Health Care Providers with Regards to Inter-facility Transfers of Critical Patients in Mangaung Metro, Free State

Aim: The aim of the study is to explore the current operational EMS provider's experiences on inter-facility transfers of critically ill or injured patients and to determine the challenges these providers encounter during these transfers.

Objectives: To explore the healthcare provider's experiences on inter-facility transfers of critical patients. To describe the challenges encountered by healthcare providers concerning inter-facility transfers of the critical patients. To describe the strategies that can be implemented to improve clinical outcomes during inter-facility transfer of critically ill patients.

I hereby cordially invite you to participate in this research study, participation is completely voluntary and all the information that you will provide will be completely confidential and your details will not be revealed in any form. Your participation will be highly appreciated as it will contribute towards adding to the body of knowledge within the Department of Health and influence policy and decision makers within the department to ensure the public receives the most advanced paramedic care during transfers to improve clinical outcomes.

Should you feel you have any concerns with regard to the study please feel free to contact the researcher at any time during the course of the study.

Regards

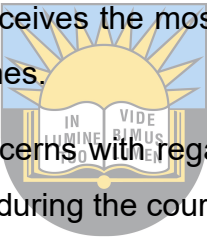
Nokwanda Mohoto

Researcher

Tel: (039) 974 2797

Cell: 072 5027 502

Email address: nokwandamohoto@yahoo.com



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Appendix F: Co-coder letter

FACULTY HEALTH SCIENCES

P.O. Box 1054

East London 5200

Tel: +27 (043) 7047475 | Fax: 0866282026

Date : 29 July 2022



REGARDING: Co-coding of analyzed data



This is to confirm that I, Dr. Daphne Murray co-coded and analyses data for master's Student in Public Health Nokwanda Mohoto. Student No: 201928135. The process that I embarked on are as follows:

I read her proposal to understand the approach and the design of choice for the study to understand the objectives and the questions the participants had to answer. I thereafter read how she delineated the meaning units from the data transcripts. I examined the analysed data to understand how segments of meaning units were clustered. Co-coded all data and presented themes and sub-themes. I then made suggestions with regard to how the researcher and her supervisor could modify categorization of some information to come up with the final themes and subthemes where applicable.

I do have experience in qualitative data analysis and have been utilized by the Faculty of Health Science to co-code analyzed qualitative data for several studies and projects.

Dr.D.Murray

.....

...29 July 2022

Appendix G: Language editor letter



Jabulani Mkhize
Cell: 0826112259
Email: gorky511@gmail.com
CONFIRMATION OF EDITING/PROOFREADING LETTER

To whom it may concern

This serves to certify that I, Jabulani Mkhize, have proofread and/or edited Nokwanda Mohoto's dissertation to ensure that the language, grammar, punctuation and spelling are academically sound and appropriate, by rectifying errors, wherever these have been identified, and rephrasing sentences that would possibly make one lose sight of the flow of the argument.

Title of the Dissertation/Thesis: "Experiences of Health Care Providers with Regards to Transfers of Critical Patients in Mangaung Metro, Free State."

Editor's Name: Jabulani Mkhize

Qualifications: PhD (English)

Signature : 
Date : 14/11/2023

Appendix H: Turn-it-in Report

Experience

ORIGINALITY REPORT

20%

SIMILARITY INDEX

18%

INTERNET SOURCES

9%

PUBLICATIONS

11%

STUDENT PAPERS

PRIMARY SOURCES

1

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2

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