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Knowledge, Attitude and Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area, Free State, South Africa.

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Dedication

I would like to dedicate this study to the Almighty God through my Lord and Saviour Jesus Christ, who has been holding my hand throughout this course of study. To my wonderful family who has always been my pillar of strength and support, you hold a space dear to my heart, thank you my ‘lovies’.

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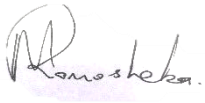
- Health and Welfare Sector Education and Training Authority for the financial provision of my studies.
- Free State Department of Health for the opportunity to further my studies.

Declaration

I Mapule Petronella Ramoshaba hereby declare that all work contained in this mini-dissertation entitled: Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area is my original work. This mini dissertation has not been previously submitted at any university for the award of a degree.



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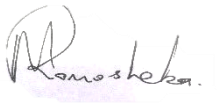
Declaration on plagiarism

I Mapule Petronella Ramoshaba with student number: 201928118 hereby declare that the work contained in this document is my own original work. I acknowledge that writing up and submitting someone else's work is wrong and is deemed as a form of plagiarism.

Signature  **Date:**

Abstract

Background and Introduction

Pre-hospital emergency care provided in a timeous and efficient manner is a pivotal component in improved patient prognosis, after a life altering situation has occurred. This management of patients is rendered prior to arrival at a medical facility. This service is provided by pre-hospital emergency care providers who apply life saving techniques and knowledge within their scopes of practice and then transporting patients to appropriate medical facilities for definitive care.

Pre-hospital emergency care providers of all levels of care, namely: Basic life support, Intermediate life support and Advanced life support render emergency care services to patients with a main goal of seeing patients return back to normal life living. For this to be achieved, the providers must be empowered with the best knowledge, appropriate skills and adequate equipment at their disposal.

Clinical practice guidelines are recommendations that are based on evidence in order to support beneficial clinical practices. These were introduced in the pre-hospital setting in South Africa in 2018 to review the scopes of practice of all levels of care, and make appropriate changes and additions for the betterment of the patient and the upskilling of pre-hospital emergency care providers. Since the providers are the end users of these guidelines, and are expected to apply them on patients, they are the best candidates to provide clarity on their perceptions, experiences and challenges which leads to the research questions being: What are the perceptions of the Pre-hospital Emergency Care Providers on the Pre-hospital Clinical Practice in the Guidelines? And What are the challenges experienced by the Pre-hospital Emergency Care Providers with regards to the implementation of the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine? The aim of the study was to explore the perceptions of the Pre-hospital Emergency Care Providers using the implemented Pre-hospital Clinical Practice Guidelines.

Methods

The study adopted a qualitative research approach with a purposive sampling method used to select the participants. This type of non-probability technique was suitable in the study as it is based on the researcher's judgement of the participants being

knowledgeable on the questions asked. An interview guide was utilised to collect data through semi-structured one on one interviews during which participants perceptions on the Clinical practice guidelines were shared. The data analysis process brought forth themes and sub themes that were aligned to the research findings which yielded the results.

Results/findings

The results encompassed the participants' perceptions about pre-hospital clinical Practice Guidelines, as well as their knowledge, attitude, challenges, suggestions and recommendations. These results unearthed some of the reasons for the pre-hospital emergency care providers perceptions towards the guidelines. The majority of PECPS have a positive attitude towards the pre-hospital clinical practice guidelines, but have challenges with the availability of equipment and drugs which is caused by the lack of due diligence in complying with the implementation of the guidelines.

Conclusion

The recommendations and suggestions from the participants and researcher come with divisive strategies to the implementation of the guidelines and activities to be applied for the smooth implementation of the pre-hospital clinical practice guidelines. The basis for these recommendations and suggestions were the results as per the research findings.

Key words: clinical practice guidelines, Pre-hospital emergency care providers, emergency medicine, perceptions, knowledge, attitude, behaviour, challenges.

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List of Abbreviations and Acronyms

BLS Basis Life Support

CCA Critical Care Assistant

ALS Advanced Life Support

HIC High Income Countries

ETI Endotracheal intubation

ILS Intermediate Life Support

BAA Basic Ambulance Assistant

CPG Clinical Practice Guidelines

ECT Emergency Care Technician

OD Organisational Development

EMS Emergency Medical Services

ECP Emergency Care Practitioner

LMIC Low to Middle Income Countries

AEA Ambulance Emergency Assistant

NQF National Qualifications Framework

PECP Pre-hospital emergency care provider

PBEC Professional Board of Emergency Care

FSCoEC Free State College of Emergency Care

AFEM African Federation of Emergency Care

PCPG Pre-hospital Clinical Practice Guidelines

HPCSA Health Professions Council of South Africa

NECET National Emergency Care Education and Training Policy

List of figures and Tables

CHAPTER 1: STUDY INTRODUCTION

1.1 Introduction and Background

The National Emergency Care Education and Training Policy (NECET 2017) advocates that the Pre-hospital Emergency Care Profession has come a long way, from the short course system to National Qualifications Framework (NQF) aligned courses. The main reason for the changes was to improve the Pre-hospital Emergency Care field to better cater for clients, which are patients, as well as to promote good human resource and career development practices among health care providers. This transition has brought on the introduction of evidence based Clinical Practice Guidelines (CPGs) which are in line with international emergency care practice. This will further aid in the clinical governance and improvement of the quality of patient care within National Health Services.

As stated by McCaul, De Waal, Hodkinson, Pigoga, Young, and Wallis. (2018), South African Pre-hospital Emergency Care Providers have been practicing based on protocols that are more than a decade old, with a lack of due processes and little reliance on evidence. The GOBSAT (good-old-boys-sitting around-a-table) method as stipulated in McCaul *et al*. (2018), has been utilised in South African Pre-hospital Emergency medicine for the longest time. The development of evidence-based Clinical Practice Guidelines (CPGs) to replace the existing protocols in pre-hospital emergency care is of particular value and importance in order to eradicate the timeworn way of applying lifesaving procedures to an evidence-based way of saving lives.

According to McCaull, Hendricks and Naidoo. (2019) the Health Professions Council of South Africa: Professional Board of Emergency Care (HPCSA PBEC) monitors and regulates the emergency care profession with regards to registration, education, training, and professional conduct, as per the Health Professions Act, No: 56 of 1974. The (HPCSA PBEC) appointed the African Federation of Emergency Medicine (AFEM) as a provider to review and develop Pre-hospital Clinical Practice Guidelines. This included the scopes of practice for emergency care providers registered in terms of the Health Professions Act, No: 56 of 1974 as amended.

Ebben, Vloet, Verhofstad, Meijer, Groot, and van Achterberg. (2013) state that clinical practice guidelines are instruments that are developed based on evidence and are then disseminated world -wide in order to reduce differences of practice in patient care. The

Pre-hospital Clinical Practice Guidelines (PCPG's) are evidence-based guidelines that were implemented in the year 2018 to all Pre-hospital Emergency Care Providers (PECP's) in South Africa in order to improve patient care. According to Kredo, Bernhardsson, Machingaidze, Young, Louw, Ochodo, and Grimmer. (2016), guidelines are recommendations synthesised on evidence and developed to support beneficial clinical practices. Application of Clinical Practice Guidelines reduces unwanted variations and improves patient outcomes. These Guidelines are an important source of information for clinicians, designed to help them assimilate, evaluate and adopt evidence into their clinical practice. Clinical Practice Guidelines form the cornerstone of providing a combination of systematic evidence-based guidance to patients, healthcare practitioners and managers. The guidelines form an essential component of the pre-hospital profession because they inform the practitioner on how to apply clinical knowledge to practise (McCaul *et al*., 2018).

As stated by Wilson, Habig, Wright, Hughes, Davies, and Imray. (2015), Pre-hospital Emergency Care is Emergency Medicine that is rendered prior to arrival at a medical facility. The main function of Pre-hospital Emergency Care Providers is to provide the best possible patient care within their specific scope of practice and then safely transporting patients to the most suitable medical facility for definitive care. This affords the patient the best possible opportunity to make a full recovery and return to their normal lives. This is supported by Davis, Southwell, Niehaus, Walley, and Dailey. (2014) stating that Pre-hospital Emergency Care Providers (PECP) are first responders at any emergency situation and are trained to be effective and efficient in the life saving procedures they apply during patient management. Gordon, Kramer, Couper and Brysiewicz. (2011) state that emergency Medicine is recognised as a principal medical specialty that is based on the need to urgently assess and treat acute medical or trauma emergencies. They can be of whatever nature, severity and in whatever location and circumstances, inside and outside of a health care establishment, whatever the circumstance may command.

The Pre-hospital Emergency Care Profession has different categories of registration, namely: Basic Life Support (BLS), Intermediate Life Support (ILS), and Advanced Life Support (ALS). These different levels of care are based on the kind of care they are able to deliver according to their various scopes of practice and training. Basic Life Support Providers are Pre-hospital Emergency Care Providers that operate at a basic level where no invasive procedures are authorised. Their core function is to apply skills that are based

on their designated scope of practice. If the need for invasive procedures or advanced skills in the medical situation arises, the practitioners will call for backup from colleagues with a broader scope of practice. Basic life Support Providers are registered by the Health Professions Council of South Africa as Basic Ambulance Assistants (BAA) (Roshana, Batajoo, Piryani and Sharma., 2012). Intermediate Life Support Providers deliver care at an intermediate level. They are able to perform some invasive procedures based on their skill sets and knowledge they are trained on. These Mid-level providers are trained at a scope higher than the BLS but below the ALS. They are able to perform all that the BLS can perform up to their level. ILS Providers are registered as Ambulance Emergency Assistant (AEA) (Zana, 2019). Advanced Life Support providers perform at an advanced level and have a broad scope of practice. They are able to perform all that the BLS and ILS are able to deliver and up to their level. They can perform a wide variety of invasive procedures of the different body systems. Their scope of practice is that of an independent practitioner where critical clinical decisions are made. ALS providers are different to the above mentioned. The ALS consists of Critical Care Assistants (CCA) registered as Paramedics, Emergency Care Technicians (ECT) and Emergency Care Practitioners (ECP) (Govender, Grainger, Naidoo, and MacDonald., 2012).

The levels of care in Pre-hospital Emergency Care are based on different clinical protocols which are procedures and practices done in patient management. These Protocols are based on a set of skills and applied knowledge. The Protocols are different at the various categories that the Pre-hospital Emergency Care Professionals are registered. In essence Protocols are a set of skills and emergency care knowledge that fundamentally shapes the practice of trained personnel in the field (McCaulI, Hendricks and Naidoo, 2019).

The Department of Health has trained Pre-hospital Emergency Care Providers (PECP) from Basic Life Support to Emergency Care Technician level since the inception of the Pre-hospital CPG guidelines in the year 2018. The PECP's have been trained in the Free State College of Emergency Care, which is the only Provincial Emergency Medical Service College in the Free State Province. The study covers the knowledge, attitude and behaviours of Pre-hospital Emergency Care Providers who were trained on Pre-hospital Clinical Practice Guidelines in the Public sector. This is in line with the mandate of the Health Professions Council of South Africa (HPCSA) which is to "guide the professions and protect the public" (Newsletter for Emergency Care Professional Board: Issue

01/08/2019). The HPCSA is responsible for ensuring that Pre-hospital Emergency Care Providers are fit to practise and are not impaired in any way.

The perceptions that this study has brought forth, are those of the Pre-hospital Emergency Care Providers, on the way in which they regard, understand and interpret the implemented Pre-hospital Clinical Practice Guidelines. The perceptions of Pre-hospital Emergency Care Providers are essential for knowledge to be added as to how the newly implemented Clinical practice guidelines in the South African context are understood and perceived by these end users.

1.2 Problem statement

The first pre-hospital Clinical Practice Guidelines (CPG) in Africa have been implemented since December 2018. Although some high-quality emergency care CPGs exist, none directly address the needs of Pre-hospital Emergency Care in Low to Middle Income Countries, especially in Africa (McCaul, Clarke, Bruijns, Hodkinson, de Waal, Pigoga, Wallis, and Young., 2018).

There hasn't been any pre-hospital Clinical Practice Guidelines that were implemented in the African setting apart from those recently implemented in South Africa. This poses a challenge since South African Pre-hospital Emergency Care Providers have been rendering emergency care services for decades without any upgrades done. This all changed in 2018 when the CPGs were implemented affecting the scopes of practice of all PECPs, meaning everyone had to change the way in which they have been treating patients resulting in fierce resistance to the CPG implementation as captured in McCaul, Hendricks and Naidoo. (2019). The newly implemented Clinical Practice guidelines are a first in the pre-hospital setting in South Africa. Clinical Practice Guidelines have been found to be the cornerstone for providing a combination of systematic evidence-based guidance to patients and healthcare practitioners. According to Car, Soong, Kyaw, Chua, Low-Beer, and Majeed., (2019) clinical practice guidelines are an important source of information, designed to help clinicians integrate researched evidence into their clinical practice.

To our knowledge there are no studies conducted to explore the knowledge, attitude and practices of the Pre-hospital emergency care providers regarding the newly implemented Clinical Practice Guidelines in the Mangaung Metropolitan area. Thus, this study seeks to explore the perceptions of Pre-hospital Emergency Care Providers regarding the implemented CPGs in the Mangaung Metropolitan area.

1.3 Aim of the study

The aim of the study was to explore the perceptions of the Pre-hospital Emergency Care Providers regarding the implemented Pre-hospital Clinical Practice Guidelines.

1.4 Specific objectives of the study

The study objectives were:

- To explore the perceptions of Pre-hospital Emergency Care Providers with regards to the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine.
- To describe the challenges experienced by the Pre-hospital Emergency Care Providers with regards to implementation of Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

1.5 Research Questions

- What are the perceptions of the Pre-hospital Emergency Care Providers on the Pre-hospital Clinical Practice Guidelines?
- What are the challenges experienced by the Pre-hospital Emergency Care Providers with regards to the implementation of the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

1.6 Significance of the study

The study would contribute to the body of knowledge in Pre-hospital Emergency Care, and outline the attitude and behaviour of Pre-hospital Emergency Care Providers with regards to the application of CPGs in Pre-hospital emergency medicine. The study would be of assistance in the improvement or modification of the current CPG

The implementation of the CPGs might influence the scope of practice of the different levels of Pre-hospital emergency care. The Basic Life Support (BLS), Intermediate life Support (ILS) and Advanced Life Support (ALS) will have to be trained according to the newly implemented CPGs and embrace the change that comes with the guidelines by applying them in their patient care.

1.7 Delimitation of the study

The study was conducted on the Pre-hospital Emergency Care Providers that service the Mangaung Metropolitan Municipality made up of Bloemfontein, Botshabelo and Thaba Nchu areas that are situated in the Free State Province. The study made provision for Pre-hospital emergency care providers that provide care from Basic Life Support to

Advanced Life Support level that work in the Public sector. The included levels of care comprised of Basic Ambulance Assistant (BAA), Ambulance Emergency Assistant (AEA), Critical Care Assistant (CCA), Emergency Care Technician (ECT) and Emergency Care Practitioner (ECP).

1.8 Limitations of the study

The main limitation of this study was that the population included only Pre-hospital emergency care providers that performed their functions in the Public sector and excluded those in the private sector; this exclusion could have resulted in a skewed perception of the real situation.

1.9 Central theoretical statement

Figure 1.1: Concepts of Organisational Development Theory

Source: Cummings and Worley (2014)

Organisational Development (OD) Theory was utilised in this study. It is a field of research, theory, and practice dedicated to expanding the knowledge and effectiveness of people to accomplish more successful organisational change and performance. Organisation Development is defined as “a system wide process of applying behavioural science knowledge to the planned change and development of the strategies, design

components, and processes that enable organisations to be effective. OD is a process of continuous diagnosis, action research, implementation, and evaluation, with the goal of transferring knowledge and skills to organisations to improve their capacity for solving problems and managing future change (Cummings, 2004).

Application of the OD Theory in the study

According to Cummings and Cummings (2014) Organisation development (OD) applies social-science knowledge and practice to help organisations change themselves to achieve greater effectiveness. It draws on concepts and methods from a variety of fields and uses that knowledge and expertise for improving organisations at different levels, such as job, group, and organisation. OD is a social practice, in which managers, staff experts, and consultants apply relevant knowledge and practices to improve organisations.

The OD Theory has been applied in this study by the application of the concepts of the theory where organisational development interventions being the implemented CPGs were explored by the researcher, and the organisational capacity of the EMS evaluated in relation to the number of PECPs who have completed the CPG updates and can now apply them in practice. The organisational climate where the PECPs perceptions and behaviour regarding the implemented CPGs was explored in order to understand their true feelings regarding the current change in their scope of practice as well as their skills. The organisational culture of the South African EMS in comparison to the old status quo and the newly implemented CPGs was investigated and the changes documented. As stated by (Burnes and Cooke 2012) Organisation development has been, and arguably still is, the major approach to organisational change across the Western world, and increasingly globally.

The organisational development theory was applied among the PECPS by the implementation of the CPGs by experts as stated in Cummings and Worley (2014) who agreed on changes to be applied in their scopes of practice and skills. In this study the perceptions of the PECPs were investigated in order to view the effectiveness of the implemented changes as per the CPGs. This was done in order to explore if they were applicable in practice, well accepted and perceived by the PECPs and if indeed greater effectiveness was achieved in the Emergency Medical Care fraternity in the Mangaung Metropolitan area of the Free State Province in South Africa

1.10 Ethical considerations

Ethical approval was obtained from the University of Fort Hare, Faculty of health sciences, Human Research Ethics Committee prior to data collection. Permission was obtained from the Free State Department of Health and the Emergency Medical Services District and Station Managers before data collection. Informed consent was obtained from the participants and the nature and aim of the study was explained to them. The participants understood that their participation in the study would be voluntary. The identity of the participants was not revealed in the study, either during the interview process or otherwise.

The Ethical principles that were considered during the study:

Beneficence – the researcher ensured the well-being of the participants by protecting them from any harm and ensuring that the research outcome was of benefit.

Non-maleficence – the researcher did not cause any emotional or physical harm to the participants while undertaking the data collection process.

Confidentiality – the participant's personal information was not divulged at any point by the researcher or information provided was treated with the outmost confidentiality

Autonomy – the participants were not influenced by the researcher in any way as it is the participants right to provide information as they wish.

Justice – just behaviour and treatment were upheld by the researcher throughout the data collection process.

Privacy – The participants were interviewed on a one on one basis and care was taken that they were not observed or disturbed by other people.

Consent – the participants received an information leaflet with the consent form attached in order for them to know what they were providing permission for and agreeing to.

1.11 Operational definitions

Protocol - a set of skills and emergency care knowledge that fundamentally shapes the practice of trained personnel in the field (McCaull, Hendricks & Naidoo, 2019). In this study Protocol stands for the knowledge and skills attained by the Pre-hospital emergency Care Providers according to the HPCSA curriculum.

Pre-hospital Emergency Care Providers - are providers that are registered under the PBEC of HPCSA as paramedics (Khoza, 2017). In this study PECPs are responders at any emergency situation that are trained to be effective and efficient in the life saving procedures they apply during patient management.

Pre-hospital Clinical Practice Guidelines – are recommendations synthesised on evidence and developed to support beneficial clinical practices (Car *et al.,* 2019). In this study Pre-hospital Clinical Practice Guidelines are the endorsed principles that PECPS must use in their daily patient management.

Perception - the process by which information about the world, as received by the senses, is analysed and made meaningful (Oxford concise colour medical dictionary, 2007). In this study Perception is the way in which one views, understands and interprets a matter.

Knowledge - facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject (Merriam Webster Dictionary, 2020). In this study Knowledge stands for the information that the PECPS have about the CPGs.

Attitude - the way that you think and feel about somebody/something; the way that you behave towards somebody/something that shows how you think and feel (Turnbull, Lea, Parkinson, Phillips, Francis, Webb, Bull and Ashby., 2010). In this study attitude refers to the behaviour and reaction of the PECPS because of the CPGs.

1.12 Chapter outline

Chapter 1: Study Introduction

This first chapter introduces the research study and reports on how it was compiled. It indicates how the researcher went about this study and the due processes that were included. The components that make up the study in this chapter include the Problem statement, Purpose and Aim of the study which provides an overview to the reader of what is to be expected from the study. The Research objectives, Research questions, Significance, Delimitation, Limitations and Ethical considerations provide a clear direction of how study was conducted from the beginning and the path it took. The Definition of Concepts and Conclusion form part of chapter 1. The next chapter is based on the literature review used in the study.

Chapter 2: Literature Review

This chapter entails the details of the literature review as sourced from relevant authors on the topic at hand. The chapter comprises of literature that is based on evidence and is relevant with the pre-hospital setting where clinical practice guidelines are involved. It speaks to the target audience about the experiences the providers have gone through regarding the guidelines which has led to their current perceptions. The next chapter focuses on the methodology used to conduct the research.

Chapter 3: Research Methodology

The main aspects discussed in this chapter include the research design, data collection strategy, data collection process, data analysis plan, sampling method, aspects pertaining to data trustworthiness, ethical considerations and limitations experienced during the data collection process. The study adopted a qualitative approach and primarily consulted the pre-hospital emergency care providers.

Chapter 4: Presentation of Results

The fourth chapter comprises of the demographic data of the participants where the results were presented in the form of themes and subthemes. This was done in order to better interpret the data captured from the participants.

Chapter 5: Conclusions, Limitations and Recommendations

This chapter draws the conclusions from the analysed data, highlights the limitations of the study and makes recommendations pertaining to the results of the study. The purpose and objectives of the study were included in order to draw conclusions that were in line with the purpose of the study and to make recommendations that were aligned to the objectives.

1.13 Chapter summary

Chapter 1 went about explaining the problem statement which fits into the aim of the study. The objectives of the study and the research questions which form the basis for the research topic, the delimitation as well as the limitations of the study were part of this chapter. The ethical consideration indicating where the permission was obtained and the central theoretical statement explaining its relevance to the study was included in this chapter.

This chapter discussed an outline of the research methodology which will be discussed at length in chapter 3. The following chapter entails the literature review. In this next

chapter, data that aligns to the research topic and responds to the objectives was collected and discussed.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Appropriate literature relevant for this study was sourced and discussed in this chapter. This chapter focuses on identifying and clarifying the causative factors for the knowledge, behaviour and attitude of Pre-hospital Emergency Care Providers regarding the application in emergency medicine of the implemented Pre-hospital Clinical Practice Guidelines. A review of the literature that had a focus on Pre-hospital Clinical Practice guidelines was found to be very important in conducting the study.

2.2 Purpose of the review

The purpose of the review was to gather related studies that advocated for the Pre-hospital emergency care setting as these Pre-hospital Clinical Practice Guidelines are a first in this fraternity in the South African setting. Literature from 2010 to 2020 was used from search engines such as Google Scholar, Pubmed and other reputable sources using keywords such as, knowledge, behaviour, perceptions, experiences, attitude and pre-hospital clinical practice guidelines

2.3 Emergency Medicine Provided by Pre-hospital Emergency Care Providers

Pre-hospital Emergency Care Providers deliver lifesaving care to any citizen that may be in need. According to Alharthy, Alswaes, Almaziad, Alenazi, Abdallah, and Alshehry. (2018) an Emergency Medical Service (EMS) is defined as a comprehensive system involving a network of personnel, equipment, and resources established mainly to deliver emergency aid and medical care to the community. In many cases, the lives of sick and injured patients depend on the rapid responses and competency of Pre-hospital Emergency Care Providers. McCann, Savic, Ferguson, Bosley, Smith, Roberts, Emond, and Lubman. (2018) state that paramedics perceive their primary role as preserving life by providing medical care. This is further echoed by Wilson, Habig, Wright, Hughes, Davies and Imray. (2015) indicating that insufficient skills retention among Pre-hospital Emergency Care Providers is a major life determinant for patients long after an emergency has occurred. This indicates the importance for PECPs to be skilled and knowledgeable in life saving procedures that have been proven to be efficient. Acting quickly in the pre-hospital period was seen to be crucial by Wilson *et al*. (2015) with decisions and interventions greatly affecting outcomes for severely ill or injured patients.

Since the implementation of the Pre-hospital CPGs in 2018, the Pre-hospital Emergency Care Providers have to undergo CPG training and perform their functions according to

the implemented guidelines. Once the CPG training is attended, based on the scope of practice change, their medical bags will have to be packed according to their new scopes of practice as stated in the CPG document. The challenge is that the newly trained PECP are then required to apply the CPGs without any work integrated learning having been offered. In order for Pre-hospital Emergency Care Providers to be abreast of the new developments in their careers, they have to attend Continuous Professional Development (CPD) and Continuing Education Unit (CEU) improvement and development sessions.

Perception is the process by which information about the world, as received by the senses, is analysed and made meaningful (Oxford concise colour medical dictionary, 2007). It is the Pre-hospital Emergency Care Providers perceptions to Clinical Practice Guidelines that will bring about an amicable solution to the challenges currently faced pertaining the Guidelines.

2.4 Categories of Registration in Pre-hospital Emergency

The South African Emergency Medical Services pre-hospital qualification framework is complex, with different levels of care and varying scopes of practice. The framework is made up of three registration categories, namely: Basic Life Support (BLS), Intermediate Life Support (ILS), and the Advanced Life Support (ALS). Pre-hospital training ranges from a four-week course to a four-year degree. The highly trained ALS practitioners have a variety of skills, knowledge and tools to perform advanced emergency care and rescue (McCaull, Hendricks and Naidoo, 2019).

Basic Life Support Providers are Pre-hospital Emergency Care Providers that operate at a basic level and do not perform any invasive procedures. The core function of these providers is to apply skill sets based on their designated scope of practice. Should an emergency scene require skills that are above their scope of practice, they are required to call for backup from PECPs with a more advanced scope of practice. Basic life Support Providers are registered by the Health Professions Council of South Africa as Basic Ambulance Assistants (BAA).

Intermediate Life Support Providers deliver care at an intermediate level. They are able to perform some invasive procedures based on their skill sets and knowledge they are trained on. These Middle-level providers are trained at a scope higher than the BLS but below the ALS. They are able to perform all that the BLS can perform up to their level. ILS Providers are registered as Ambulance Emergency Assistants (AEA).

Advanced Life Support providers perform at a level that is higher than the previously mentioned categories and have a broad scope of practice. They are able to perform all that the BLS and ILS are able to deliver and up to their level. They can perform a wide variety of invasive procedures of the different body systems. Their scope of practice is that of an independent practitioner where critical clinical decisions are made. ALS provider registers are different to the above-mentioned categories. The ALS consists of Critical Care Assistants (CCA) registered as Paramedics, Emergency Care Technicians (ECT), National Diploma, Diploma, and Emergency Care Practitioners (ECP).

According to Wilson *et al*. (2015) the transfer of skills and procedures from hospital care to pre-hospital medicine enables early advanced care across a range of disciplines. Pre-hospital emergency medicine consists of not only clinical care, but also logistics, rescue competencies, and scene management skills. This type of care is given to patients before arrival in hospital after activation of emergency medical services.

2.5 Work Procedures

Pre-hospital Emergency Providers function according to different scopes of practice as per their level of care. They operate in 12-hour shift systems that run for 24 hours a day. They are required to report at their different EMS stations where they are then dispatched by the Provincial EMS control centre according to and depending on the nature of the call and level of care they are able to provide based on their scope of practice.

In discharging their duties, one of the requirements is that the Pre-hospital Emergency Care Providers have to produce a valid driver's license with a Professional Drivers permit in order to perform their daily functions. They drive to the dispatched scenes in ambulances and may use emergency lights and sirens while driving at high speed. This is the reason why there is a prerequisite for all personnel to produce their driver's licenses which are checked by the shift leaders prior to commencing a shift.

The Pre-hospital Emergency Care Providers deliver medical and rescue care, depending on the need of the patient. They ultimately transport the patient who is referred to as a client to different health facilities depending on the type of emergency which the PECP encountered.

2.6 Clinical Practice Guideline Development

The HPCSA: PBEC guides and regulates the emergency care profession regarding registration, education, training, and professional conduct, as per the Health Professions Act, No: 56 of 1974 (McCaull, Hendricks and Naidoo, 2019).

Clinical guidelines are statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options (Kredo *et al*., 2016). The African Federation for Emergency Medicine (AFEM) in collaboration with researchers and emergency care specialists, were awarded the offer to revise and reformulate the protocols using best evidence in late 2015 (McCaulI, Hendricks and Naidoo, 2019). AFEM collaborated with the Centre for Evidence-based Health Care (Stellenbosch University) and the Department of Emergency Medical Sciences (Cape Peninsula University of Technology) in 2015. The working group produced the first African evidence-based Clinical Practice Guideline for the Pre-hospital Emergency Care Profession in the year 2016.

The AFEM CPG development project used an adaptive guideline development approach to *de novo* development, where existing up-to-date high-quality clinical practice guidelines were synthesised instead of primary evidence, by adopting, adapting, or contextualising the CPGs to produce contextually appropriate recommendations for emergency care in the local setting of South Africa (McCaul *et al*., 2018; McCaulI, Hendricks and Naidoo, 2019). This led to the production of the first evidence-based clinical practice guideline for the emergency care profession in Africa.

The Clinical Practice Guidelines culminated in a document with over 1000 recommendations for South African emergency care clinical practice. The recommendations were aligned to the country's local contextual factors (McCaulI, Hendricks and Naidoo, 2019). The scope of the CPG development was extensive, including key identified emergency care topics such as acute coronary syndromes, airway, adult and paediatric and neonatal resuscitation, cerebrovascular accidents, environmental emergencies, fever, obstetrics and gynaecology, paediatric gastroenteritis, pain and procedural sedation, respiratory emergencies, seizures, sepsis, and trauma (McCaul *et al*., 2018).

According to McCaul. (2016) the Clinical Practice Guideline project aimed to review and update the existing protocols for emergency care providers and create an evidence-based CPG which: (i) provides an evidence base for emergency care practice contextualised to the South African setting (ii) is patient-centred, realistic and enhances the continuation of care throughout the emergency system (iii) is aligned to current local and international best practice and (iv) provide guidance to both current practitioners and

those envisioned by the National Emergency Care Education and Training policy. This is further reiterated by Sobuwa and Christopher. (2019) stating that the National Emergency Care Education and Training (NECET 2017) Policy envisions a 1-year higher certificate, a 2-year diploma and the 4-year professional degree in Pre-hospital Emergency Care, which are to be fully implemented with the ending era of the short courses.

The development of evidence-based CPGs to replace the existing protocols in pre-hospital care is of particular value and importance in order to change the status quo of the GOBSAT methods (good-old-boys-sitting around-a-table) with a lack of due processes and little reliance on evidence. South African pre-hospital emergency care providers have been practicing based on protocols that were more than a decade old which were focusing mainly on resuscitation and pharmacopeia and providing little-to-no information on background evidence. (McCaul *et al.,* 2018).

Prior to the implementation of the CPGs, Pre-hospital Emergency Care clinical practice has been guided by protocols. These are documents which provided clinical practice instructions, last revised in 2006 and 2009 in South Africa which were unclear and outdated (McCaulI, Hendricks and Naidoo, 2019). The CPGs represent a transition from skills-driven practice underpinned by expert opinion, to practice that is informed by the best available evidence. CPGs have been proven to be the gold standard in patient management efficiency globally.

The terminology has increased in volume and sophistication when it comes to CPG development. The institute of medicine updated the definition for CPGs in the year 2011 to accentuate the rigorous methodology used to develop the guidelines (Dizon, Machingaidze and Grimmer, 2016).

2.7 Clinical Practice Guidelines Significance

Clinical practice guidelines form the cornerstone of providing a combination of systematic evidence-based guidance to patients, healthcare practitioners and managers (McCaul *et al*. 2018). These guidelines are an essential component of the pre-hospital profession as they inform the practitioner as to how to apply clinical knowledge to practice. This is reiterated by Sipilä, Mäkelä and Komulainen, (2019) stating that the use of high-quality CPGs should be a starting point in order to de-implement the use of interventions which are uncertain or lacking evidence and by so doing reduce or stop the use of harmful health service provided to patients. The higher burden of disease in Low to Middle Income

Countries (LMICs) makes the focus on evidence-based guidelines even more urgent to minimise wastage and ensure the best patient care for optimal cost (McCaul *et al*. 2018).

According to Car *et al*. (2019) Clinical practice guidelines are an important source of information, designed to help clinicians integrate research evidence into their clinical practice. Guidelines are evidence synthesis-based recommendations, developed to support beneficial clinical practices, reduce unwanted variations and improve patient care outcomes. They are an important source of information for clinicians, designed to help them assimilate, evaluate and adopt evidence into their clinical practice. Bulger, Snyder, Schoelles, Gotschall, Dawson, Lang, Sanddal, Butler, Fallat, Taillac and White. (2014) adds that updating of guidelines has been found to have beneficial effects.

Clinical Practice Guidelines may be seen as an obstacle by Pre-hospital Emergency Care Providers because in their field of practice, nothing of this nature has ever been introduced. The CPGs may be met with resistance by PECP if they are not clearly communicated by the decision makers. According to McCaull, Hendricks and Naidoo, (2019), globally, an important intervention for maximising the clinical impact of CPGs is an assessment of local barriers and perceptions of the target users, for which evidence is currently lacking for pre-hospital care in resource-constrained settings. A study conducted by Barata, Brown, Fitzmaurice, Griffin, Conners. (2015) concluded that Emergency Department care and flow can be improved by implementing best practices at several steps in the workflow to promote effective, efficient, and patient centred care.

2.8 Clinical Practice Guideline Advantages

Clinical Practice Guidelines have shown to be important for patient prognosis because they provide clear and concise instructions. This assists the Pre-hospital Emergency Care Provider to avoid wasting time by guessing which will be the most appropriate practice. According to Hoogmartens, Heselmans, Velde, Castrén, Sjölin, Sabbe, Aertgeerts, and Ramaekers. (2014) evidence-based clinical practice guidelines are increasingly being promoted in all areas of medicine. Health-care workers aim to improve quality of care by using interventions of proven benefit and discouraging ineffective ones as recommended in the CPG document. This is further echoed by Kredo *et al*., (2016) stating that high-quality, evidence-informed clinical practice guidelines offer a way of bridging the gap between policy, best practice, local contexts and patient choice. Clinical guidelines have been upheld as an essential part of quality medical practice for several decades.

Kredo, Gerritsen, van Heerden, Conway and Siegfried. (2012) affirms that guidelines have a range of purposes intended to improve effectiveness and quality of care, to decrease variations in clinical practice and to decrease costly and preventable mistakes and adverse events. They generally include statements of expected practice; provide benchmarks or standards against which individuals can audit, compare and potentially improve their practices. Extensive research has been undertaken over the past 30 years on the methods underpinning clinical practice guidelines including their, implementation and evaluation. As stated by Sobuwa and Christopher, (2019), there have been major changes in Pre-hospital Emergency Care training and education in South Africa over the past 30 years. Over time, CPGs have shifted from opinion-based to evidence-informed, making it challenging to keep abreast of evolution in this field of research. This is echoed by Dizon, Machingaidze and Grimmer, (2016) stating that research into CPGs has escalated, with a concomitant increase in theories and methods.

2.9 Pre-hospital Emergency Care Provider concerns

McCann *et al*. (2018) discovered that only a few authors have documented pre-hospital emergency care provider perceptions concerning whether paramedics feel that their scope of practice should be extended or not.

The CPGs have been met with fierce resistance because the guideline recommendations and updated scope of practice for providers have vast implications for emergency care service delivery, training, and curriculum alignment for a total of seven different qualification registries. It has affected approximately 70 000 registered providers. Some implications are considered positive as they may provide access to effective treatments previously unavailable while others are considered negative because they narrow the scope of practice for some Pre-hospital Emergency Care Providers. The Clinical Practice Guidelines have brought change and discourse to pre-hospital care in South Africa. Some Providers expressed concern that the current educational system lacks the capacity and resources to update or retrain the existing qualified pre-hospital workforce, while others indicated that the barrier to CPG implementation is the lack of will to redo something that they are already skilled in. The guidelines have caused considerable uncertainty within the industry and providers are unsure of where they are heading as a profession. Providers expressed that stakeholders such as the HPCSA PBEC need to take ownership of the confusion caused (McCaulI, Hendricks and Naidoo, 2019).

In a study conducted by McCaull, Hendricks and Naidoo. (2019), which was based on the practitioner's perspectives on CPG implementation and dissemination, providers reacted differently to the guidelines, often with contradictory views. Some providers reacted with excitement while some felt as if their competence and worth as advanced short course paramedics was being questioned. Junior providers reacted with excitement to see an increase in their scope of practice while advanced providers were excited to see a focus shift to guidance that is evidence-based with an emphasis on previously neglected clinical topics.

As stated by Dizon, Machingaidze and Grimmer. (2016) some providers had specific skills removed off their existing scope of practice. This is the case for CCAs where drug facilitated endotracheal intubation (ETI) has been removed from their scope of practice, which brought on a lot of anger, shock and disappointment. This was also brought to view by McCaul, Hendricks and Naidoo. (2019) indicating that the perspectives of the South African paramedics were vast and varied from person to person and categories, some were concerned that there was information filtering between the rural and urban PECPS because of centralisation of information which is caused by the poor communication system, while others as with the CCA Paramedics with the removal of the endotracheal intubation skill, were not pleased with the implemented CPG changes.

The NECET policy has envisioned a three-tier system where South African EMS providers can upgrade their knowledge and skills while having an NQF level recognised qualification as stated by Sobuwa and Christopher (2019). This is not the case for some emergency care providers who feel trapped in the current educational framework, especially with the introduction of the new CPGs and scopes of practice McCaul and Grimmer (2016). As stated in McCaull, Hendricks and Naidoo. (2019) EMS Providers are apprehensive about how they are going to be upskilled and the cost thereof. They feel they are left with no choice but to resign and pursue a university degree in order to get upskilled.

According to McCaull, Hendricks and Naidoo. (2019) the lack of consistent and clear communication from regulators regarding the guidelines, career pathways, and up-skilling has left providers confused as there is no one who takes the responsibility for communicating the CPG changes and own up to the responsibility of explaining to the pre-hospital providers as to why the changes are made and the way forward. Pre-hospital Emergency Care Providers feel that the stakeholders did not care what their feelings were

and their point of view did not matter to them. Vincent Lambert (2015) states that the short course system enabled a poor educational foundation for providers as they could not apply critical thinking skills.

2.10 Clinical Practice Guideline Development Challenges

According to McCaul *et al*. (2018) there is a lack of guidelines that are specific to Pre-hospital Emergency Care in low- and middle-income countries even though there are some high-quality CPGs that exist for emergency care. Internationally the majority of CPGs for emergency care are either developed *de novo* or are from High Income Countries (HIC) and vary in quality. Adaptive guideline development methods make up only the minority of pre-hospital guidelines, even though they yield a high potential for time and cost effectiveness. Development of CPGs from scratch is a time-consuming and expensive process requiring multifaceted teams of methodologists and experts who systematically review and synthesize primary evidence, to ultimately produce locally appropriate recommendations (McCaul *et al*., 2018; Dizon, Machingaidze & Grimmer, 2016).

Introducing new clinical practice guidelines (CPGs) and implementing changes in healthcare practices is described as complex and challenging, and often the intended result is not achieved. The introduction of interventions in the field of health orientation in health care, faces a lot of challenges resulting in a low occurrence and quality of services. Limited education on the guidelines, and difficulties to organize continuous education alternatives for different health professionals was also reported about as an obstacle (Kardakis, Jerdén, Nyström, Weinehall and Johansson., 2018). A professional work ethics and attitude is important for the effective implementation of guidelines. The Pre-hospital Emergency Care Providers knowledge level is a key factor to a successful implementation and the lack of it could hinder the proper provisioning of medical services to clients.

Some have viewed CPGs with scepticism because of their potential for misuse, as when care is restricted inappropriately as stated by (Asonganyi, Vaghasia, Rodrigues, Phadtare, Ford, Pietrobon, Atashili and Lynch., 2013), but high-quality guidelines, used appropriately, can facilitate shared decision making and identify gaps in knowledge. According to Hoogmartens *et al*. (2014) discrepancies between existing practice in the pre-hospital field and practice recommendations from existing CPGs have previously been described. One of the possible explanations for these discrepancies is that

guidelines on the same topic often contain conflicting recommendations. This causes confusion and possibly exposes patients to suboptimal care. Conflicting recommendations can sometimes be attributed to insufficient evidence, lack of awareness of relevant evidence, failure to appraise the evidence critically, values, and preferences.

Hoogmartens *et al.* (2014) assessed the completeness and level of evidence behind recommendations in pre-hospital guidelines of traumatic brain injury and noted large content variation in the recommendations. As emergency care is expanding throughout low- and middle-income countries, guideline development teams seek to identify high-quality CPGs to adapt, and contextualise for use in local settings. There is a need for the explanation and assessment of emergency care guidelines globally, so that these teams can be better informed of the existing body of evidence.

2.11 Pre-hospital Emergency Care Transformation according to Policy

According to McCaulI, Hendricks and Naidoo, (2019) the majority of Pre-hospital Emergency Care Providers have a 4-week Basic Life Support (BLS) and 3-month Intermediate Life Support (ILS) qualification. Currently the 4-week (BLS), 9-month Critical Care Assistant (CCA) and 2-year Emergency Care Technician (ECT) National Certificate courses have been phased out. The 3-month (ILS) and 3-year National Diploma courses are being phased out as industry transitions to professionalise Pre-hospital Emergency Care away from skills based short course training programs.

The National Emergency Care Education and Training Policy (NECET 2017) aims to ensure the alignment of emergency care education and training with current education legislation, to cater for the national Department of Health. The policy introduces a three-tier system that is National Qualification Framework (NQF) aligned, where there will be phasing out of previous pre-hospital Emergency Medical Services short course qualifications.

According to the (NECET 2017) Policy the short course system included a three-week Basic Ambulance Assistant (BAA), 12-week Ambulance Emergency Assistant (AEA) and four-month Critical Care Assistant short course which was extended to include an additional five months of clinical roadwork in 1985 which remained relatively unchanged. These short courses provided skills-based ambulance personnel that would function under the direction of a medical doctor. Vincent-Lambert. (2015) attributes the lack of

professional recognition and standing as a result of an absence of formal higher education qualifications in Pre-hospital Emergency Care at that time.

Pre-hospital Emergency Care Providers are now able to register and function as independent clinicians and the historical short-course training system is in the process of being phased out in favour of formal higher education qualifications. Consequently, in South Africa the responsibility for clinical decision-making, interrogation, and development of pre-hospital medical protocol is now largely driven and owned by South African paramedics themselves (Vincent-Lambert, 2015)

2.12 PECPS Previous Scope of Practice and Skills vs Post CPG Implementation.

Basic Life Support

According to Roshana *et al*. (2012) Basic life support providers are Emergency care providers that provided medical care on a limited skill set that was based on a scoop and go approach, where not much was done for the patient. This is agreed on by Vincent Lambert 2015 stating that the aim of these providers was to get the patient to hospital as quickly as possible prior to the implementation of the CPGs. There was little or no clinical supervision in many public and private emergency medical services. Patients' lives were at risk, with BAAs being entrusted with the care and transport of critically ill or injured patients that were referred from distant rural clinics to tertiary level hospitals.

With the implementation of the CPGs the BAA scope of practice has been improved with additions of medications such as penthroxyflurane, acetyl salicylic acid, ipratropium bromide and B2 stimulants. This means that providers at Basic Life Support level can now provide emergency care for patients with conditions such as suspected acute myocardial infarction by administering acetyl salicylic acid, acute bronchospasm by giving the patient B2 stimulants and Ipratropium bromide, as well as and pain management due to trauma by administering Penthroxyflurane. Their scope has been expanded with new skills that allows them to apply critical thinking and take better care of patients. They can now assist pregnant women with complex deliveries such as malpresentations and breech delivery. They can use equipment such as tourniquets for massive uncontrollable arterial bleeds among other skills. The BLS scope has been updated to a level whereby they are able to treat more conditions without having to wait for the backup of higher levels care.

As captured in the HPCSA. Curriculum for the Basic Ambulance Assistant Course. Document 2, Part 1 of 1999c, the old scope of practice allowed the BLS level providers to care for certain maternity conditions and limited the ILS to the management of other conditions including those of BLS and still left other conditions to be treated by only ALS providers. The implementation of the CPGs has resulted in the uniformization of skills when it comes to maternity with all levels of care performing all the skills.

PECPS used a spine board and spider harness as immobilising equipment for patients with suspected spinal injuries prior to the implementation of the CPGs. These pieces of equipment were found to cause harm to patients during the period of restraint and transportation, they were not comfortable which led to patients moving a lot and the rigid spine board did not follow the natural body curvature of the human anatomy and the hard-plastic material it is made from would result in bed sores when patients were left on the board for a prolonged period.

The new skills as per the CPGs has replaced the old immobilisation devices with the introduction of the vacuum mattress. This new device allows for patient comfortability and when vacuum is applied is able to fill the patient's body curvatures and causes no further harm to the patient.

Intermediate Life Support

As stated in the HPCSA. Curriculum for the Ambulance Emergency Assistant Course document 4, Part 1 of 1999b, the intermediate life support scope of practice and skills were limited to the treatment of conditions that encompassed 8 drugs that were in the old scope of practice. With the implementation of the CPGS the ILS scope has been expanded to include eight more dugs and additional skills that renders the ILS effective for the treatment of a number of conditions such as cardiac arrest and anaphylaxis without having to wait for ALS providers who used to be the only level that had Adrenalin in their scope of practice. ILS providers can now provide emergency care for paediatric patients from the age of a year old instead of the old scope where they started treating oatients from 8 years old.

The new drugs include the management of conditions such as narcotic overdose, control of seizures in toxaemia of pregnancy and the use of glucagon as hyperglycaemic agent among a few.

Advanced Life Support

Prior to the implementation of the CPGs, ALS level PECPS at ECT level were required to consult ECP level PECPS before administering scheduled medicines such as morphine or performing certain procedures including external jugular vein cannulation. Post CPG implementation they could now independently undertake procedures or administer medicines within the confines of their scope of practice and protocols.

ECP level ALS providers have a number of new drugs added to their scope practice. This enables them to render emergency medical care for a greater number of conditions and cater for more patients. Among the new drugs that have been added in the ECP scope of practice, some require consultation with a Supervising Medical officer prior to administration.

2.13 Chapter Summary

This chapter covered a literature review related to the Pre-hospital clinical practice guidelines with the goal of exploring the perceptions of the Pre-hospital Emergency Care Providers. The derived literature review is from multiple sources and contains relevant information regarding the CPGs. The literature gathered explains the CPGs at length and contains important information about the PECPs that is relevant to this study. The literature review provides data that is applicable to the study and directly relates to the topic at hand. The literature review seeks to provide clarity regarding the PECPs perceptions.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the research design and methodology employed in the study as well as the rationale for the chosen approach thereof. It describes the geographical area where the study was conducted, sampling, the study population, data collection instrument, and analysis methods. It also describes methods that were employed to ensure the trustworthiness of the study.

3.2 Research design

A research design is a plan of how one intends conducting the research. A research design focuses on the end product, formulates a research problem as a point of departure and focuses on the logic of the research study (Brink, Van der Walt and Van Rensburg, 2012).

This study adopted a qualitative approach of research and employed an exploratory, descriptive, and contextual research design. The reason for choosing this type of research methodology lies in that the study pursued an in depth understanding of the knowledge level, attitude and perceptions of Pre-hospital Emergency Care Providers pertaining to the implemented Pre-hospital Clinical Practice Guidelines. In this respect qualitative research methodology is known to play a key role as it allows researchers to gather an in-depth understanding of human behaviour and the reasons for a specific phenomenon.

3.3 Research setting

The study was conducted in the Emergency Medical Services setting in the Mangaung Metropolitan area of the Free State Province, situated in the central interior of South Africa, (see Map figure 3.1)

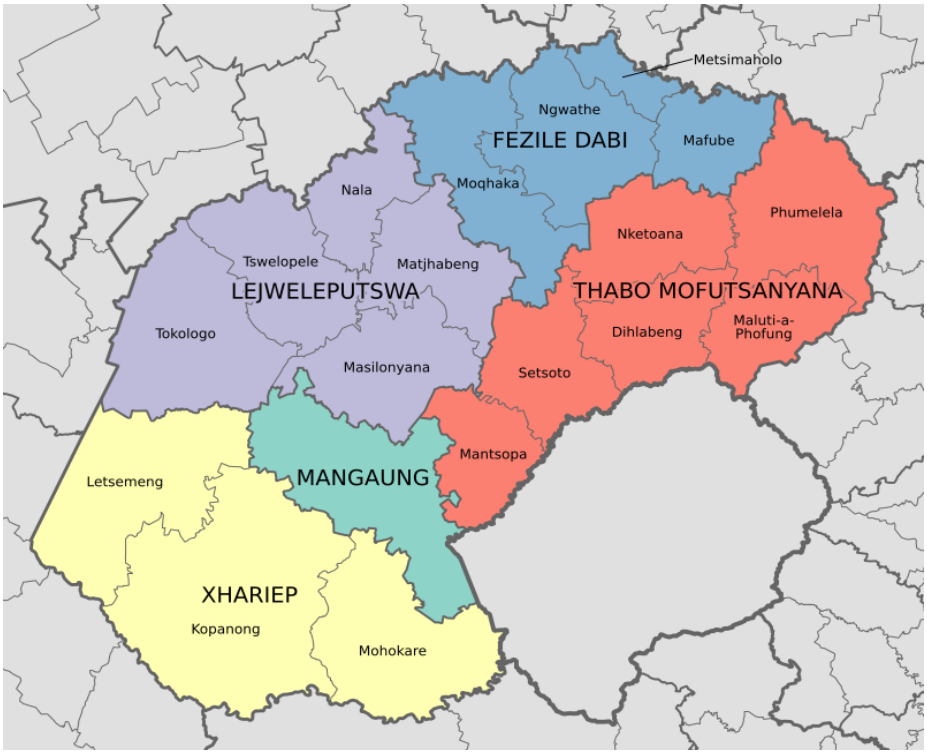

Figure 3.1: Free State Map indicating the Mangaung Metropolitan (Wikipedia: 2022)

The Mangaung Metropolitan has a population of 878 330. The Municipality is a Category A municipality of which 83,3% are black African. The community ranges from all race groupings and social classes as well as urban and rural areas.

Prior arrangements were made with the District and Station managers for the ambulance stations or specific ambulance bases in the Mangaung Metropolitan Municipality for provisions to be made for interview venues at the ambulance bases, that were conducive for the researcher and participant where privacy was maintained.

Table 3.1 Free State Province Pre-hospital Emergency Care Provider Staff composition in the Public sector

Provider Category	BLS	ILS	CCA	ECT	ECP	
Number	1201	242	8	82	0	
Total						**1533**

The Mangaung Metropolitan comprises of 3 Towns with a varying number of Pre-hospital Emergency Care Providers, namely: Bloemfontein, Botshabelo and Thaba-Nchu. The Mangaung Metropolitan has 234 Pre-hospital Emergency Care Providers that serve in the public sector with the breakdown stipulated in table 3.2.

Table 3.2 Mangaung Metropolitan Pre-hospital emergency Care Provider Staff Composition.

Town Name	**PECP Number**
Bloemfontein	114
Botshabelo	63
Thaba-Nchu	57

(Telephonic conversation with station managers: Me Nkala, Mr Booysen and Me Nakedi)

Table 3.3 CPG Trained PECPS

	Free State Province
BLS	88
ILS	42
ALS	30
Total	**160**

	Mangaung Metropolitan
Bloemfontein	14
Botshabelo	8
Thaba-Nchu	12
Total	**34**

(FSCoEC: Short Learning Programme: CPG Course Statistics, 2019)

The above table shows the number of PECPS at, BLS, ILS and ALS category levels that were trained at the Free State College of Emergency Care. This study was conducted on Pre-hospital Emergency Care Providers who completed the course successfully until saturation was reached and no new data emerged.

3.4 Population

The study consisted of Pre-hospital Emergency Care Providers from the Free State Province in the Mangaung Metropolitan Municipality with a staff component of 234 personnel. The Participants were made up of male and females of all ethnicities from the age of 18 to above 42 years of age who functioned at all emergency medical care levels, namely: Basic, Intermediate, and Advanced Life support. The participants performed their functions within the Mangaung Metropolitan Municipality in Bloemfontein, Botshabelo and Thaba-Nchu. They had an active registration status with the Health Professions Council of South Africa as a regulatory body.

3.5 Sampling

The sampling process is a technique used to select research subjects from a population (McCombes & van den Eertwegh, 2019). The sample method used in the study included all Pre-hospital Emergency Care Providers from Basic, Intermediate and Advanced life support. All participants from Bloemfontein, Botshabelo and Thaba-Nchu were purposively selected to participate in the study. A purposive sampling method which is also called a judgemental, selective or subjective sampling, can be based on objects that are distinctive of a study phenomenon and relies on the judgement of the researcher to select the object to be studied (Rai and Thapa, 2015). This type of non-probability technique was suitable in the study as it is based on the researcher's judgement of the participants being knowledgeable on the question at hand (Brink, Van der Walt and Van Rensburg, 2012)

3.6 Inclusion criterion

The sample included both male and female Pre-hospital emergency care providers from Basic, Intermediate and Advanced life support levels. They completed their CPG training successfully and ranged from the age of 18 to above 42 years. The participants were from different ethnic groups and willing to voluntarily take part in the study.

3.7 Exclusion criterion

Pre-hospital Emergency Care Providers from other districts within the Free State Province, who did not render their services within the Mangaung Metropolitan Municipality were excluded. Pre-hospital emergency care providers from the private sector were also excluded from the study.

3.8 Data Collection

The data was collected using semi-structured, one on one interviews. An interview guide with open ended questions guided the interview process where participants were able to share their thoughts. The research was carried out until saturation was reached and no new information emerged during the data-collection process.

The interview questions comprised of three sections. Section A covered the socio-economic and demographic characteristics while Section B covered the knowledge, perceptions and attitude of pre-hospital emergency care providers, and Section C covered the experiences encountered by the providers. The data collection tool was made up of 15 question distributed among the three sections.

Covid-19 compliance

The interviews were conducted in a covid-19 compliant manner where EMS personnel maintained a safe distance of over 1 meter apart from each other. During the interview masks were worn at all times by all members involved in the interview process. The masks covered both the nose and mouth. In the instance where one sneezed or coughed, they were advised to use a tissue and disposed of it immediately in a closed bin or they used their bent elbow. The locations where the interviews were held were well ventilated where windows were opened and privacy was still maintained.

Personnel were advised to wash their hands as often as possible with soap and water. Alcohol based hand sanitiser was made available by the interviewer and sanitisation was done continuously without causing any disturbances. The participants were provided with a sanitiser and sanitisation was done prior and post to commencement of the interview. Willing participants were advised to stay at home if they were not feeling well. The number of personnel that were involved in the interview process were limited in order to keep to the regulations and to minimise any form of transmission.

In the event where there was an alert level that does not permit face to face interviews, telecommunication platforms would have been utilised for ease of access where the interview would occur through an online platform. Prior arrangements were made with willing participants in order to arrange the mode of communication to be followed and the covid-19 alert level was favourable for face to face interviews at an alert level of 1.

3.9 Research instrument

In depth Semi-structured interviews were conducted individually on a face to face basis. The interview guide entailed open ended questions that allowed the participants to share their perceptions and experiences pertaining CPGs. The interview questions were divided into three sections, namely: (a) Demographics which revealed among other things the participants gender, age and number of years in service, (b) the knowledge, perceptions and attitude of the pre-hospital providers which provided an overview of the participants opinions and thoughts about the CPGs and (c) Experiences and challenges encountered which revealed whether the participants deemed the CPGs beneficial or necessary and if the CPGs are applicable in practice for the PECPs.

3.10 Trustworthiness

Trustworthiness was addressed by using the criterion stipulated below as captured in (Kyngäs, Kääriäinen and Elo, 2020). These include: credibility, transferability, dependability, conformability and authenticity. As stated by Stahl and King, (2020), trustworthiness is a way of ensuring data quality or rigor in research.

3.10.1 Credibility

According to Brink, Van der Walt and Van Rensburg, (2012) credibility establishes that the results of the research are convincing. In this study credibility was established through engagement with the EMS personnel prior to the data collection where the researcher went to the ambulance bases to introduce the research. This was achieved by proving EMS personnel with research information leaflets that explained what the study was all about, how it would be carried out and their participatory role should they volunteer participate in the study. This brought about trust between the researcher and participant (Brink *et al*., 2012). Credibility was also ensured by the authenticity of the research findings where the audio tapes and interview were compiled and availed to the participant. This ensured internal validity and that the aim of the study was met.

3.10.2 Transferability

Transferability refers to the extent which the findings of the study can be generalised by the reader and the degree to which the reader is able to generalise the study in their own context (Connelly, 2016). The study was conducted in a manner that another person would be able to apply the research findings in a different context, this was done by ensuring that all procedures and steps taken were compiled and data captured protected.

3.10.3 Dependability

The study was conducted in manner that is consistent and can be repeated by other researchers in future using the same methods. The research process was carefully documented and conducted by keeping a detailed track record of all research processes that took place. The documentation is kept under lock and key storage by the researcher and can be availed on request to relevant persons. The electronic version of the documents is password protected and kept safe by the researcher.

As stated by Connelly. (2016), dependability refers to the consistent manner in which a study is conducted. The researcher conducted all the interviews personally in a consistent manner, using the same approach for all participants and adding to the dependability of the of the study. The way the study was conducted addressed the issue of reliability and thus verified that the research project would be repeated using the same methodology in the same context with the same participant's and similar results would be obtained.

3.10.4 Confirmability and Authenticity

The findings of the study were supported by the data collected thus ensuring the Confirmability and Authenticity of the study. Triangulation was used to minimise the effects of researcher bias by obtaining data from different participants at different times and in different ambulance bases in the Mangaung metropolitan are in Bloemfontein.

3.11 Ethical consideration

Ethical approval was obtained from the University of Fort Hare, Faculty of health sciences, Human Research Ethics Committee with reference number**:** Ref # 2021=09=09=RamoshabaM, prior to data collection. Permission was obtained from the Free State Department of Health and the Emergency Medical Services District and Station Managers before data collection.

3.11.1 Informed consent

Informed consent was obtained from the participants in writing by the researcher on a face to face basis, before the commencement of the data collection and the nature and aim of the study was explained to them. Each participant was provided with an informed consent form upon agreeing to participate in the study. The participants understood that their participation in the study was voluntary and that their identities would not be revealed.

3.11.2 Respect for person

Participants took part in the study voluntarily without any pressure to participate from anybody. The participants were made aware that they could refuse to be part of the study or withdraw at any point during the study should they wish to and there would not be any harm or animosity from the researcher.

3.11.3 Anonymity and confidentiality

The data would not divulge the participant's identity in any way and a high level of confidentiality was upheld. The participants were not identifiable because the transcripts were coded and their names were not recorded in order to ensure anonymity. The data is kept safe by the researcher to ensure confidentiality.

3.11.4 Justice

The principle of justice was upheld by making sure that the participants right to fair treatment and privacy was honoured. The data collection process was done on a one on one basis without any influence to the participants and they were allowed to express themselves fully.

3.11.5 Beneficence

The principle of beneficence was applied as no harm occurred to the participants. The participants were free from any form of exploitation by the researcher and their opinions were not impinged on.

3.12 Data collection procedure

The researcher sent a letter of intent and requested to conduct the research study to the office of the Head of Department of Health in the Free State Province and it was approved for the study to continue. Prior arrangements were made with the station managers of the different Ambulance bases in the Mangaung Metropolitan Municipality in Bloemfontein for the researcher to meet with the pre-hospital emergency care providers for information sharing about the study where information leaflets were distributed.

The researcher made appointments with willing participants for an interview date in their towns of work where a venue was made available by the station managers. At the interview venue participants were made aware that their participation was based on a voluntary basis and that they could choose to not be part of the study. Consent forms were signed by both the participant and the researcher prior to the commencement of the interview.

3.13 Data analysis

The semi-structured interviews with the pre-hospital emergency care providers were tape recorded and transcribed and manually analysed. Data analysis is the process of evaluating data using analytical and logical reasoning to examine each component of the data provided. The Framework Method analysis by Gale, Heath and Cameron *et al*. (2013) was utilized in the research study to analyse the collected data. The aim of data analysis was to initially organise the data for analysis and the process of analysis was to code the data and reduce the codes through categorising them into main themes.

3.14. Stages of the Framework Method analysis

3.14.1Transcription

An audio recording and a verbatim transcription of the interview were done. Transcripts had large margins and adequate line spacing for coding the data and making notes for future reference.

3.14.2 Stage 2: Familiarization with the interview

The researcher familiarized herself with the interview process by knowing the documentation that was used and ways of asking questions and elaborating to the participants when required. An audio recorder was used to collect data and reflective notes were also written down during the interview process which brought about ease during the interpretation phase. The recordings were re-listened to by the researcher and then transcribed.

3.14.3 Stage 3: Coding

The transcripts were carefully read line by line and labels applied to describe what was interpreted. Coding was used to categorize the data so that it can be systematically associated with other parts of the data set. The coding was applied using themes and sub themes that were aligned to the research findings.

3.14.4 Stage 4: Developing a working analytical framework

A private coder was used for the coding process in order to assist in refining the collected data and bring about a consolidated meaning of the identified patterns. Transcripts were prepared by the researcher after which they were given to the coder. The coder produced the themes and sub themes that were sent to the researcher for agreement and comparison with the research findings and the subsequent transcripts. By so doing, this formed a working analytical framework which was finalized when the last transcript was coded.

3.14.5 Stage 5: Applying the analytical framework

The working analytical framework was applied by indexing subsequent transcripts and using the existing categories and codes. Each code was assigned a number for easy identification. Computer Assisted Qualitative Data Analysis Software (CAQDAS) was used to assists in speeding up the process and ensures that data was easily retrievable at a later stage.

3.14.6 Stage 6: Charting data into the framework matrix

Data was summarised as this is a very important step for the analysis process. A spreadsheet was used to generate a matrix and the data was charted into the matrix. The data was charted using the category from each transcript. Data was reduced while still maintaining the original meaning of each transcript. The chart included references to illustrative quotations that were tagged automatically.

3.14.7 Stage 7: Interpreting the data

All impressions, ideas and early interpretations of data were noted down. Differences and characteristics in the data were identified to explore relationships and causality. The findings in the data were described as well as explained. The researcher had individual time to conduct interpretation and writing up of findings.

3.15 Chapter Summary

Chapter 3 provided an overview of the research methodology applied in this study. This chapter explains the way the research was conducted as well as the place where it happened. It explains who was involved in the study and the reason for them being part of the study. This chapter gives insight on how the information was collected and using which method to retrieve it. The study had to meet certain parameters in order for it to be deemed trustworthy as captured in this chapter. Chapter 3 informs the reader of what occurred prior to the data collection process and the system used to collect the data is explained. The chapter concludes with the data analysis method and steps followed post data collection.

CHAPTER 4 PRESENTATION OF RESULTS

4.1 Introduction

A thorough discussion of the methodology and design was conducted in the previous chapter. In this chapter the results of the collected data will now be presented by the researcher. In chapter four a context was created in which the data was manually analysed and codes used that were translated into themes and sub themes presented in a cohesive manner (Brink, Van der Walt & Van Rensburg, 2012). The practicality of the collected data is provided by the literature control. Discussions on the identified themes and sub-themes will be conducted at length. These discussions will be supported by the responses from the participants. The aim of the findings presented is to answer the following research questions:

- What are the perceptions of the Pre-hospital Emergency Care Providers with regards to implementation of Pre-hospital Clinical Practice Guidelines?
- What are the challenges experienced by the Pre-hospital Emergency Care Providers with regards to implementation of Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

4.2 Demographic Profile of the Participants

Pre-hospital Emergency care providers from ages ranging from 18 to above 42 year took part in this study.

Table 4.1 Study Participants

	Male	Female	
BAA		1	
AEA	4	2	
ECT	3	3	
Total	7	6	**13**

The above table depicts participants who were from different ethnic groups categories of EMS, and gender. Pre-hospital emergency care providers from four ambulance bases within the Mangaung Metropolitan Municipality participated in the semi -structured individual interviews. The names of all participants have not been mentioned in the study to honour the principle of confidentiality and anonymity. This was done by allocating a number to each participant and thus replacing their names.

4.3 Interviews

The researcher conducted thirteen one-on-one semi-structured interviews as the method of obtaining data in this study. The semi- structured individual interview process made provision for the researcher to ask the participants both open ended and closed ended questions with additional probes (Bailey, Hutter & Hennink, 2020).

4.4 Presentation of Results

Following data analysis four main themes emerged. The four themes and the relevant sub-themes are tabulated in table 4.2

Table 4.2: Themes and sub-themes

NO	THEMES	SUBTHEMES
1	Knowledge about Pre-hospital clinical Practice Guidelines	1.1 Participants conceptualization of pre-hospital clinical guidelines 1.2 Advantages regarding implementation of guidelines to the Patients 1.3 Advantages regarding implementation of guidelines for the staff
2	Participants' perceptions regarding the implementation of these guidelines.	2.1 Participants own views regarding the implementation of pre-hospital clinical guidelines.
3	Attitude of staff towards the implementation of these guidelines	3.1 Positive attitude towards the implementation of the guidelines. 3.2 Negative attitude towards the implementation of the guidelines

4	Challenges experiences by the participants post implementation of guidelines	4.1 Patient related challenges 4.2 Equipment and medication related challenges 4.3 staff-related challenges
5	Opinions and suggestions/recommendations from the participants	5.1 Training 5.2 Availability of drugs 5.3 Availability of equipment

4.4.1 Theme 1 Knowledge about pre-hospital clinical practice guidelines

During the interviews the participants were knowledgeable about the pre-hospital clinical practice guidelines. They knew their stance as providers as to what they ought to do in different emergency situations.

4.4.1.1 Sub-theme 1.1: Participants conceptualization of pre-hospital clinical practice guidelines

The pre-hospital emergency care providers are of the notion that the guidelines are a good initiative and have a positive outlook towards them. They perceive the guidelines as beneficial for the greater good of the patients. The information provided by the participants as they were updated and had completed their pre-hospital clinical practice guideline course successfully was helpful and of substance. Some of the providers indicated that the implementation of the pre-hospital clinical practice guidelines was long overdue as the protocols they were using were a 2006 outdated version.

These are some of the comments that emerged from the participants:

"In my understanding CPGs are guidelines where emergency care workers try to stabilise patients prior to being transported to the hospital or clinic. The difference in patient management before and after the implementation of the CPGs is that there are

improvements in equipment's and drugs that have been added to scopes of practice (Participant 1)."

"It's all about the changes that were made to previous treatment of patients, what is supposed to be done now as opposed to what was done before (Participant 9)".

Yes, the CPGs are beneficial to both me and the patient. I gained knowledge while the patient gains appropriate care (Participant 3).

"it's good to have them because we are going to help the patient the most, for us some of the patients we come across we won't have to wait for assistance because we will start practicing, more drugs and new skills, so hopefully it will be implemented soon so we can start practicing. For the patient to start benefiting from us is going to help us a lot (Participant 7)".

"knowledge is power, it's good to always learn new things (Participant 6)".

According to McCaul, de Waal, Hodkinson, and Grimmer (2016), the guidelines aimed to review and update the existing protocols for emergency care providers and create clinical practice guidelines that provides an evidence base contextualised to the South African setting that is patient-centred, realistic and enhances the continuation of care throughout the emergency system. This is aligned to current local and international best practice and provides guidance to both current practitioners and those envisioned by the draft National Emergency Care Education and Training (NECET) policy.

The Participants made mention that the *"CPGs are beneficial"* and that *"we feel empowered and know what we are doing to patients"*. Clinical practice guidelines are an important source of information, designed to help clinicians integrate researched evidence into their clinical practice as stated by (Car *et al*., 2019).

4.4.1.2 Sub theme 1.2 Advantages regarding implementation of guidelines to the Patients

The application of the pre-hospital clinical practice guidelines by the providers has been found to be beneficial to both the participants and the patients as stated by the participants that the providers gained more knowledge to better care for their patients and the patients received improved medical attention.

The following comments were made by the participants:

"I transported an intubated patient that was very restless and on an infusion pump, according to me if I had no CPG training the patient would have suffered. The Doctor accompanied that patient and I worked with him to take care of the patient, I took care of the sedation by administering midazolam which was part of the CPG updates whenever the patient was restless and the Dr took care of the airway (Participant 11)".

"The CPG training was necessary because there are some things that we used to do that caused more harm to patients, for instance immobilisation using a trauma board instead of a vacuum mattress, and the pain medication with penthrox that has now been added (Participant 5)".

"it's of benefit for me and the patient, I get more experience and knowledge then with that I can help the patient. The patient can benefit when I have the knowledge, it's going to help me give relevant drugs that i didn't use before I did the CPGs" (Participant 7).

"to both the patient and I, the patient gets more treatment in a proper manner and for my side the way I treat the patient improves (Participant 9)".

Kredo *et al*. (2012) affirms that guidelines have a range of purposes intended to improve effectiveness and quality of care, to decrease variations in clinical practice and to decrease costly and preventable mistakes and adverse events that may occur to patients.

Prompt decision making and interventions greatly affect outcomes for severely ill or injured patients, thus implementation of clinical practice guidelines is crucial for positive patient outcomes (Wilson *et al*. 2015). It goes without saying that application of the CPGs in emergency medicine will save patients' lives and bring about better prognosis.

4.4.1.3 Sub theme 1.3 Advantages regarding implementation of guidelines for the staff

Pre-hospital emergency care providers in South Africa have been given a life line for themselves as well as for the patients they treat on a daily basis through the implementation of the clinical practice guidelines. The providers can now pride themselves in applying evidence-based medicine to patients and gaining knowledge and understanding of the procedures they perform. The staff now have new skills and medications at their disposal for patient care as opposed to before when they had to wait for someone who has a higher qualification to administer some medications and skills to the detriment of the patient.

"Yes, more knowledge for us to start with because we are starting to be more exposed or be able to use a lot of drugs and the more we get that opportunity we can treat most of the patients because we come across lots of patients for example in patients with convulsions while in labour instead of waiting for ALS (Advanced Life Support) we can start helping the patient" (Participant 7).

"the CPGS are important because they are an upgrade that makes things simpler for us, for example the ET tube has been removed but we now use a wide variety of supraglottic airway devices as opposed to before, we have more medications in our scope that we can now use that required backup prior to CPG implementation" (Participant 8).

According to Hoogmartens *et al*., (2014) evidence-based clinical practice guidelines are increasingly being promoted in all areas of medicine. Health-care workers aim to improve quality of care by using interventions of proven benefit and discouraging ineffective ones as recommended in the CPG document. McCaul *et al.* (2018) supports the statement by stating that Clinical Practice Guidelines form the cornerstone of providing a combination of systematic evidence-based guidance to patients, healthcare practitioners and managers. The guidelines form an essential component of the pre-hospital profession because they inform the practitioner on how to apply clinical knowledge to practice.

4.4.2 Theme 2: Participants' perceptions regarding the implementation of these guidelines.

The participants view the pre-hospital clinical practice guidelines as a good initiative and correct manner in which patients have to be treated. Most of the participants are for the CPGs and don't seem to be resistant to their implementation and application in clinical practice.

4.4.2.1 Sub theme 2.1: Participants own views regarding the implementation of pre-hospital clinical guidelines.

Pre-hospital clinical practice guidelines are viewed by the participants who are the end users to be beneficial and of great assistance in their daily management of patients. The participants have mentioned that these guidelines have bridged a gap where they used to wait on scene for a long time for advanced life support backup, to treating patients effectively on their own.

"We work with the poor, some of them they get sick easily, some of them don't have money to go to the private hospitals to get better medication or better treatment. So at least the CPG will improve us to get them help (Participant 2)".

"CPGs are skills and drugs that have been added to my scope of practice and I think they will help us a lot to do more for the patient (Participant 11)".

"They are a good initiative; the CPGs helps us a lot to assist the patient by bridging scope limitations (Participant 11)".

"Upgrading or introducing new drugs to the patient, the indications, how to administer them, which is a good thing that we are adding new knowledge (Participant 12)".

"They were explaining to us the pre-hospital emergencies, especially maternity. The extra drugs added to our scope of practice and the other extra skills that were not given to us before, and we can also give information to the callers here at the control centre (Participant 13)".

"My opinion is that they are a good initiative but have not been implemented and that is making us suffer and it hampers service delivery because we have to rely on ALS to arrive while we arrived early on the scene (Participant 3)".

"my understanding is that they are guidelines that are put there to guide us in our management of patients, pertaining skills as well as management of the patient according to protocol (Participant 4)".

Kredo *et al*. (2012) states that high-quality, evidence-informed clinical practice guidelines offer a way of bridging the gap between policy, best practice, local contexts and patient choice. The medications and skills that have been added to the scope of practice of pre-hospital emergency care providers are well accepted and the personnel are keen to utilise them for appropriate patient care. The Oxford concise colour medical dictionary (2007) interprets perception as the process by which information about the world, as received by the senses, is analysed and made meaningful. The participants perceive the guidelines as vital components in their knowledge and interpret them as important for patients to receive better management in the pre-hospital setting.

4.4.3: Theme 3: Attitude of staff towards the implementation of these guidelines.

The participants attitude towards the implementation of the pre-hospital clinical practice guidelines is positive. They have a different outlook to patient care as opposed to prior

the implementation and are much more confident and emit boldness where the guidelines are involved.

4.4.3.1 Sub theme 3.1: Positive attitude towards the implementation of the guidelines

The pre-hospital clinical practice guideline implementation has been received with positivity by the participants. The pre-hospital emergency care providers have mentioned that they think the guidelines are a good initiative and their application in practice increases their knowledge.

Some of the responses from the participants were:

"at first, I didn't have Lorazepam on my medications, status epilepticus I didn't manage with Lorazepam so I was only using Diazepam of which the maximum dose is 20 mg, but now with Lorazepam because it has a long acting effect, I can treat status epilepticus (Participant 4)".

"These are guidelines that have been implemented for us to treat patients better (Participant 5)".

"Pre-hospital personnel are first responders where we start doing our practice until we reach the hospital, we give medicine and treatment. The HPCSA saw a need to add extra drugs or treatments because we come across those illnesses more often so they added them because they wanted the backup calls to be limited and realised that calling for backup is not possible sometimes so they decided to improve the scopes of practice (Participant 5)".

"it's good to have them because we are going to help the patient the most, for us some of the patients we come across we won't have to wait for assistance because we will start practicing (Participant 7)".

As stated by McCaul, Hendricks and Naidoo. (2019) some pre-hospital emergency care providers were satisfied with the proposed clinical practice guidelines. Basic and intermediate life support providers reacted with excitement to see an increase in their scope of practice while Advanced life support providers were excited that the guidelines were evidence based and included clinical topics that were not considered in the past.

The participants responses were positive and advocated for the application of the guidelines in clinical practice for emergency medicine.

4.4.3.2 Sub theme 3.2: Negative attitude towards the implementation of the guidelines

Some of the participants that belong to the ECT category expressed discontent with the implementation of some parts of the CPGs. They felt some skills were omitted from their scope of practice and the removal of some of the skills was not necessary. They felt frustrated as this removal served as a scope limitation to them.

4.4.4 Theme 4: Challenges experienced by the participants post implementation of the guidelines

A great number of participants alluded to the fact that there were a couple of challenges that were hampering the implementation of the guidelines. These were above their control and affected their daily patient management.

4.4.4.1 sub theme 4.1: Patient related challenges

The participants made mention of the challenges related to not being able to treat patients with certain conditions due to scope limitations. The patients were not in themselves being difficult or unwilling to receive emergency medical care from the participants, the challenge was on the side of the participants not being able to cater to the patient's needs.

Some of the comments from the participants were:

"The challenge I can say is I get the patient and can't handle the patient because now we don't have permission to use the drugs, they said we are waiting for the Health Professions Council of South Africa to give permission to use the drugs (Participant 2)".

"the ECT scope of practice after CPGs should have included airway management and ventilator usage because patients end up not being transferred due to ALS staff shortages (Participant 11)"

According to Wilson *et al*. (2015) insufficient skills retention among Pre-hospital Emergency Care Providers is a major life determinant for patients long after an emergency has occurred. Providers indicated that they are not able to provide emergency care to patients because there is unavailability of drugs, in essence patients suffer due to this challenge.

The participants have indicated that they are not able to apply the pre-hospital clinical practice guidelines on patients even though they have gone for the CPG course and were successful. The reason they provide for the inability to implement the guidelines is that

they are yet to be issued with the drugs and some of the equipment. They mentioned that the management in their ambulance bases say the permission for the usage of the drug protocol was yet to be given hence the unavailability.

4.4.4.2. Sub theme 4.2: Equipment and medication related challenges

The participants made mention that most of the equipment and medication that is supported by the guidelines are not available at their ambulance bases and those that are available are left at the base in the shift leaders office. It becomes apparent that there is underusage of available equipment as it is left at the base instead of being utilised for patients and the absence of some of the equipment that causes poor service delivery to the detriment of the patient and increase in litigation cases to the department of health.

Some of the responses from the participants:

A small number of participants mentioned that they applied the CPGs in their patient management. They also alluded to the fact that they have the updated drugs and some of the CPG compliant equipment available at their disposal.

Most of the participants are under the assumption that the guidelines are yet to be implemented because there are no protocol specific drugs that are provided while they are on shift, as well as some of the equipment as per the CPGs. Some personnel feel the removal of some of the skills that they used to practice is hampering service delivery, they feel the removal of those skills from their scope of practice was uncalled for and unjust. Some of the participants feel that there are skills that were supposed to be part of their CPG updates that were omitted.

"we don't have a fridge where we can store our medication that needs refrigeration or maybe they can provide us with cooler box, my medications that need a refrigerator are in the fridge at home (Participant 4)"

"I had post-delivery haemorrhage (PPH) where I would have used NPASG but it was not available in my ambulance, We only have one at this base and it was in the office and the shift leader was not around, Maybe I would have used the oxytocin to try to make the uterus to contract maybe it would have helped in stopping the bleeding, Yes I do have the Oxytocin but the problem is that it needs to be refrigerated or placed in the cooler box. (Participant 4)"

"We have not yet been given the drugs (Participant 2)".

"My opinion is that they are a good initiative but have not been implemented and that is making us suffer and it hampers service delivery because we have to rely on ALS to arrive while we arrived early on the scene (Participant 3)".

"there are some issues that I noted there, some of which are the skill that they removed from us such as external jugular cannulation…. it's easier than IO (Intraosseous) (Participant 4)"

"the challenges that I am accounting at the moment are with regards to equipment that we have to use such as syringe drivers, infusion pumps, Surgical cricothyroidotomy, we don't have that equipment to perform those skills if they will be needed (Participant 4)

According to McCaul, de Waal, Hodkinson and Grimmer, (2016) assessments of local barriers using interactive educational interventions is more likely to be effective in CPG dissemination and implementation. Taking a closer look into the lack of equipment and making provision thereof for their availability can be a worthwhile strategy to smooth implementation of the CPG since the providers have not depicted any negativity towards the CPGs.

4.4.4 3 Sub theme 4.3: Staff-related challenges

The participants mentioned a few challenges with regards to post implementation of the CPGs, and some are related to their designated places of work. Working in the pre-hospital setting doing one and the same thing over decades may lead one to rely on their experiences. This was one of the challenges that the participants spoke about.

"for us it's a challenge because we work at the control centre and we don't apply the CPGS practically (Participant 10)".

"most of the people panic when they call the control centre and may not be able or willing to do what you are instructing them to do over the phone and you take a lot of time to try and explain, some of them will tell you that they're afraid to do what you are asking (Participant 13)".

"as PECPs we rely a lot on experience and this leads to many mistakes (Participant 10)"

"Some of the challenges that I encountered post CPG implementation are with regards to patient management such as the administration of the new drugs in my scope of practice hoping to see a positive change only to find adverse events and the patient's condition worsening (Participant 1)"

"I cannot say the management of patients as per the CPGs is easy because there are challenges each and every time when administering any drug there will be challenges so I can't say it's easy, but when you are on your toes, things will go smoothly (Participant 1)"

Challenges to dissemination and implementation included poor communication, changes to scope of practice, and limited capacity to upskill existing providers (McCaul, Hendricks and Naidoo, 2019). The change in the scope of practice has led some of the providers to rely on what they know and have been practicing instead of the CPGs.

The participants who performed their function at the communication centre made mention that it was a challenge to provide callers with instructions telephonically to assist a distressed patient while waiting for the ambulance to arrive, indicating the need to upskill providers who render their functions at the communication centre. Some of the pre-hospital emergency care providers were worried that when they applied the CPGs the patients either worsened or presented with adverse effects indicating the need for more training opportunities among existing providers.

4.4.5 Theme 5 Opinions and Suggestions/recommendations from the participants.
Only a few of the participants made suggestions or recommendations in the study. The participants recommend for the CPGs to be implemented in order for them to start putting them into practice and by so doing there will be alleviation of poor service delivery to the patients as they will be able to treat patients without waiting on scene for an ALS to arrive and treat the patient.

Some participants have indicated that the HPCSA should re-evaluate their scope of practice with regards to some of the skills they have removed from their protocol, which they feel are within their ability to perform. The participants feel this is a protocol limitation that results in many patients demising due to the delay of waiting for the advanced life support practitioners for certain patient transfers.

4.4.5.1 Scopes of practice of the participants

Some participants have indicated that the HPCSA should re-evaluate their scope of practice with regards to some of the skills they have removed from their protocol, which they feel are within their ability to perform. The participants feel this is a protocol limitation that results in many patients demising due to the delay of waiting for the advanced life support practitioners for certain patient transfers. The opinions of the participants differ

depending on their levels of care. The lower categories feel excited as their scopes will expand and they can do more for the patient, while the higher qualified personnel from whom skills have been removed from their scopes are more frustrated with the changes.

Opinion of participant 5:

"*Pre-hospital personnel are first responders where we start doing our practice until we reach the hospital, we give medicine and treatment. The HPCSA saw a need to add extra drugs or treatments because we come across those illnesses more often so they added them because they wanted the backup calls to be limited and realised that calling for backup is not possible sometimes so they decided to improve the scopes of practice* (Participant 5)".

4.4.5.1 Sub theme 5.1: Training

Most of the participants have indicated that they need to be re-taught most of the procedures and drugs they learnt on the CPG course because it has been so long since completing the training and not applying the guidelines. Most feel as if the guidelines are yet to be implemented.

Some of the opinions from the participants:

"if maybe after 3 to 6 months we can go back again and get refreshed with those CPGs (Participant 2)"

"they are quite good even though we did them in a short period of time, they gave us about two weeks to learn about 8 drugs. I believe that was a short period of time (Participant 6)".

"Regarding the CPGs there is nothing much to say because we haven't practiced anything that we did on the CPGs after we completed, it's been four years but I haven't used even one drug or any skill that we learned on the CPGs (Participant 7)"

"My opinion is that they are a good initiative but have not been implemented and that is making us suffer and it hampers service delivery because we have to rely on ALS to arrive while we arrived early on the scene (Participant 3)".

As the EMS industry moves from six providers to a three-tier system clear leadership is crucial for the transition of the profession at this time, with the incorporation of the guidelines in the educational system. The use of stakeholders such as emergency care colleges and universities collaborating with professional societies and regulators in

strengthening guideline uptake by using online modular training for existing providers will assist in intensifying the training needs of the providers (McCaul, Hendricks and Naidoo, 2019)

The participants recommend a pre-hospital clinical practice guideline refresher course post the CPG training to be initiated. The reason is that they did not practice the CPGs immediately after being CPG compliant and whatever one does not practice, they lose.

4.4.5.2 Sub theme 5.2: Availability of drugs

Most of the participants made mention that the CPGs should be implemented so that they can start applying them to patients. The greater majority of participants have indicated that they are yet to be provided with the drugs as per their updated protocols and the correct equipment. Much has to be done from the managers side in order for the implementation to be carried through by all personnel, and for better service delivery to the patients to be rendered.

Some of the opinions of the participants:

Most of the participants indicated that they were not using the drugs as per the CPG updates because they are awaiting authorisation for them to start using them. This implies that patients are treated according to the old outdated protocol which the CPGs aimed to change. Pre-hospital emergency care providers are not against the use of the updated drugs and are eager to start functioning according to the CPG updates.

"*We have not been issued with the drugs yet (Participant 5)"*

McCann *et al*. (2018) states that paramedics perceive their primary role as preserving life by providing medical care. Without appropriate drugs the providers cannot provide definitive care to certain patient groups on scene. The absence of drugs renders the providers unable to assist patients and are left with no choice but to wait for advanced life support providers which takes more time on scene and to the detriment of the patient.

4.4.5.3 Sub theme 5.3: Availability of equipment

The participants suggestion on equipment is that there have been improvements that will make their daily operational work easier.

Some participants made mention that some of the equipment is either not available or in limited numbers and locked away in a manager's office. This indicates that there a

shortage of essential equipment and that causes the participants to deliver poor services to the patients.

Some of the opinions by the participants:

The participants opinions suggest that there is a shortage of equipment and are left wanting because of this, but should proper equipment be made available in acceptable amounts they are more than willing to provide patient care effectively.

"there are improvements in equipment's (Participant 1)"

"I would have used that to manage the patient but unfortunately we are short of that equipment" (Participant 4).

"with appropriate and equipment, we can manage patients as per the CPGs easily (Participant 3)"

According to Alharthy *et al.* (2018) an Emergency Medical Service (EMS) is defined as a comprehensive system involving a network of personnel, equipment, and resources established mainly to deliver emergency aid and medical care to the community. The absence and shortage of equipment causes the providers to deliver poor emergency care.

4.5 Chapter summary

This chapter contains five themes and twelve sub themes which were derived from the research findings. These themes and sub themes brought to light the knowledge, perceptions and the experiences of the pre-hospital emergency care providers regarding the implementation of the clinical practice guidelines. The data analysis process gave rise to themes which assessed the Knowledge about Pre-hospital clinical Practice Guidelines, the participants' perceptions, attitude, and challenges as well as the suggestions and recommendations from the participants. There is a necessity for further research to be conducted in other districts so as to view similarities and monitor trends. All the findings which were identified in the various themes and sub-themes during the data analysis process were confirmed by a literature control.

CHAPTER 5: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

in the previous chapter the data analysis findings were discussed by the researcher including the process employed. The data analysis process was backed with themes and sub themes that emerged from the findings.

5.2 Study Purpose and Objectives

The purpose of the study was to explore the perceptions of the Pre-hospital Emergency Care Providers using the implemented Pre-hospital Clinical Practice Guidelines. The goal was to provide the Emergency Medical Services in the Free State Province with endorsements from the findings in order for service delivery to be rendered effectively and efficiently. The following objectives were appraised:

- To explore the knowledge, behaviour and attitude of Pre-hospital Emergency Care Providers with regards to the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine.
- To describe the challenges experienced by the Pre-hospital Emergency Care Providers with regards to implementation of Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

5.3 Themes generated from the interviews

5.3.1 Theme 1: Knowledge about Pre-hospital clinical Practice Guidelines

The pre-hospital emergency care providers depicted being knowledgeable about the pre-hospital clinical practice guidelines. They were aware of their existence and understood well the purpose they serve both to them as providers and to the patients.

These guidelines are perceived as adding knowledge and bringing about better management to the patients. The Participants view the pre-hospital clinical guidelines as being of benefit as they increase their scope of practice, making them more independent and able to render services without having to wait for advanced life support providers on scene. Clinical guidelines have been upheld as an essential part of quality medical practice for several decades. As stated by Wilson *et al.* (2015) prompt decision making and interventions greatly affect outcomes for severely ill or injured patients, thus implementation of clinical practice guidelines is crucial for positive patient outcomes. It goes without saying that application of the CPGs in emergency medicine will save patients' lives and bring about better prognosis.

According to Sobuwa and Christopher. (2019), education and training has improved in South Africa for pre-hospital emergency care providers over the past 30 years. There have been major changes that have rendered a shift from opinion-based to evidence-informed CPG implementation and dissemination making it challenging to keep abreast of evolution in this field of research. The participants have communicated that the guidelines have brought positive change for the betterment of the patients and for improvement in their scope of practice.

Clinical Practice Guidelines are the cornerstones of providing a combination of systematic evidence-based guidance to patients, healthcare practitioners and managers. The guidelines form an essential component of the pre-hospital profession because they inform the practitioner on how to apply clinical knowledge to practice (McCaul *et al*., 2018). This has been ascertained in the study as the providers indicated that the CPGs guide their clinical practice and this allows the providers to render emergency care in a timeous and effective manner.

5.3.2 Theme 2: Participants' perceptions regarding the implementation of these guidelines.

Clinical practice guidelines are viewed as the gold standard by the participants who advocate for their use and application in emergency medicine. These guidelines are perceived to be beneficial and of great help by the participants. According to McCaul *et al*. (2018) South African pre-hospital providers have been using an outdated scope in an ever-changing country with new diseases and differing patient presentations. The participants made mention that with the implementation of the CPGs patients will benefit from them and in return have better prognosis.

5.3.3 Theme 3: Attitude of participants towards the implementation of these guidelines

The participants have a positive attitude towards the CPGs and are for their implementation and dissemination. Those who have indicated that they have the drugs and equipment as per the CPGs at their disposal have indicated that the guidelines are a great help to them and make caring for patients easier. The guidelines are said to increase the participants knowledge and are of great importance. According to McCaul, Hendricks and Naidoo. (2019) pre-hospital providers of lower levels were excited about the implementation of the guidelines as they increased their scope of practice while the senior levels were impressed by the evidence basis of the guidelines and the patient

groups that were included. No negativity was noted from the participants with regards to the CPG implementation.

5.3.4 Theme 4: Challenges experienced by the participants post implementation of the guidelines

There were a number of challenges that were mentioned by the participants which had a direct impact on their daily functioning in patient care. Some of these challenges were patient related where patients presented with adverse effects after receiving emergency medicine as stipulated by the guidelines, these instances made providers unsure of their acquired knowledge and more reserved to apply the guidelines. Wilson *et al*. (2015) reiterates that the patient's prognosis is dependent on the pre-hospital emergency care providers knowledge and skill at the time of responding to a scene, should there be a deficit then the patients suffer. The patients in themselves did not pose any challenges by refusing to receive patient care but rather the providers were unable to care for the patients appropriately.

There seems to be equipment related challenges at the ambulance bases in the Mangaung Metropolitan area with regards to the implementation of the CPGs. This was notable from most of the participants and it was said to be hampering service delivery. The challenges were due to having no access to the equipment which was locked in a supervisor's office and the unavailability of CPG compliant equipment. As stated by McCaul, de Waal, Hodkinson and Grimmer. (2016), local barriers need to be assessed in order for the implementation of the CPGs to be effective. These local barriers such as the lack of essential equipment and drugs may impede CPG implementation.

The pre-hospital emergency care providers in the Mangaung Metropolitan area have mentioned that there is a shortage of advanced life support provider. These are the senior ranking pre-hospital providers whose scope of practice is broad and are able to apply invasive procedures and advanced skills. As stated by McCaulI, Hendricks and Naidoo. (2019) the highly trained ALS practitioners have a variety of skills, knowledge and tools to perform advanced emergency care and rescue. The lack or shortage of these personnel is causing a huge backlog to patient care and many may demise due to not reaching definitive care timeously.

Some of the participants that perform their function at the communication center indicated that they face challenges when it comes to assisting patients over the phone. The callers are either afraid or not willing to assist the patients. According to McCaul, Hendricks and

Naidoo. (2019) changes to scope of practice, poor communication and limited capacity to upskill existing providers poses a challenge to the dissemination and implementation of the CPGs. The call takers at the communication center need to be empowered by creating a training course and a tool devised for them to communicate better to the callers and provide advice.

5.4 Limitations of the study

The results of the study are limited as the study was conducted among pre-hospital emergency care providers that performed their functions in the Public sector of the Mangaung Metropolitan Municipality. The findings may not be generalised as different results may emerge in other districts in the emergency medical services as the study was conducted in the Free State Province in South Africa.

5.5 Recommendations

The pre-hospital emergency care providers recommendations and suggestions with regards to the clinical practice guidelines are straight forward and it would be of great benefit for them to be heard and the needs attended to by the management team.

5.5.1 Recommendations from participants:

A few participants made recommendations or gave suggestions in this study

I. Implementation of the CPGs to be the standard for all personnel to align their patient care with

II. Plan for a clinical practice guideline refresher course for all providers that have completed the CPG course

III. Avail the necessary drugs as per each providers scope of practice

IV. Provide equipment as stipulated in the CPG updates document

It was recommended that the CPGs be implemented in order for patients to start benefiting from the providers knowledge and likewise for the providers to start applying their accumulated knowledge and skills for their skill retention and upskilling.

There was a suggestion from some of the providers indicating that the Health Professions Council of South Africa should re-evaluate their updated scope of practise as they feel the removal of some of the skills they used to perform was not necessary. These participants stressed the issue by saying the council has created a protocol limitation for them and according to the participants it is to the detriment of the patients.

A large number of the participants have indicated that they need a refresher course for the CPGs since they have not practiced their application post their training. According to Kardakis *et al*. (2018.) limited education on the guidelines, and difficulties to organize continuous education alternatives for different health professionals was reported as an obstacle. Offering a CPGs refresher course can be a good strategy to keep the providers updated and maintaining it with continuous professional development can afford great benefit for both the provider and the patient. McCaul, Hendricks and Naidoo. (2019) advocate for the use of emergency care colleges and universities in collaboration with professional bodies and regulators in strengthening guideline uptake by using online modular training for existing providers in order to intensify the training needs of the providers.

The participants have recommended for the implementation of the CPGs in order for them to start applying them, by using the drugs as per their updates for the benefit of the patients. Provision of medical care to preserve life is the primary role of the pre-hospital emergency care providers (McCann *et al*., 2018). Hence the need for appropriate medications and equipment to be availed.

As mentioned that some of the equipment is either not available or in limited numbers, the participants suggest that equipment be placed in ambulances as opposed to being locked away and not utilised effectively and for all other equipment to be made available so as to practice and have skill retention. An Emergency Medical Service comprises of personnel, equipment and resources in order to service communities (Alharthy *et al*. 2018), failing which poor service delivery ensues.

5.5.2 Researchers recommendations:

The recommendations from the researcher to the Free State Department of health, under the Emergency Medical Services fraternity, to take into consideration the pre-hospital clinical practice guidelines to be applied by all pre-hospital emergency care providers by ensuring that all personnel are compliant. This can be done by devising a standard operating procedure and imposing time lines for this to be accomplished.

It is of great importance that the approved medications as per the CPGs as well as the necessary equipment be made available to all practitioners so as to eliminate variations in emergency care standards.

Prompt initiation of the CPG refresher followed by continuous professional development sessions in order for the providers to keep current is essential for effective management of patients in the pre-hospital setting.

The employment of advanced life support providers in the Mangaung Metropolitan Municipality of the Free State province should be prioritised and esteemed as urgent because a shortage of these providers affects the health system from the core.

5.5.3 Recommendations for further research

More research has to be done in this field of study where the use and application in practice of the CPGs is evaluated to see if they are beneficial or not and for the views of the patients to be to be evaluated with regards to the application of the guidelines.

5.6 Chapter Summary

The pre-hospital emergency care providers have expressed their perceptions and experiences on the implemented pre-hospital clinical practice guidelines. The providers perceptions and experiences were categorised into five themes and described the following: Knowledge about Pre-hospital clinical Practice Guidelines, Participants' perceptions and Attitude regarding the implementation of these guidelines, Challenges experienced by the participants post implementation of guidelines and Suggestions/recommendations from the participants.

Some of the pre-hospital emergency care providers have a positive attitude towards the clinical practice guidelines while others have concerns with regards to scope limitations and availability of resources. The results have shown that most PECPs are not against the guidelines and are more than willing to apply them should the appropriate equipment be availed as well as the updated drugs per scope of practice. The results of the study bring to light the importance of the CPGs and their application in clinical practice. The recommendations and suggestions stipulated should be taken into consideration in order for emergency care to be rendered in an effective manner by the providers.

According to McCaull, Hendricks and Naidoo. (2019), globally, an important intervention for maximising the clinical impact of CPGs is an assessment of local barriers and perceptions of the target users, for which evidence is currently lacking for pre-hospital care in resource-constrained settings. A study conducted by Barata *et al*. (2015) concluded that Emergency Department care and flow can be improved by implementing best practices at several steps in the workflow to promote effective, efficient, and patient centred care.

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ATTACHMENT A: ETHICAL CLEARANCE

University of Fort Hare
Together in Excellence

HEALTH RESEARCH ETHICS COMMITTEE

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ETHICAL CLEARANCE CERTIFICATE
REC-100118-054

Certificate Reference Number:	**Ref # 2021=09=09=RamoshabaM**
Project title:	**Knowledge, attitude and perceptions of prehospital emergency care providers concerning prehospital clinical practice guidelines in Mangaung Metropolitan area, Free State, South Africa**
Nature of Project	Masters of Public Health
Principal Researcher:	Ramoshaba M
Student Number:	201928118
Supervisor:	Prof DT Goon

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.

University of Fort Hare
Together in Excellence

HEALTH RESEARCH ETHICS COMMITTEE

P.O Box 1054
East London 5200
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E-mail: dgoon@ufh.ac.za

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.
- In addition to the need to comply with the highest level of ethical conduct principal investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to HREC monitoring@ufh.ac.za.

The Ethics Committee wishes you well in your research endeavours.

Yours sincerely

Professor DT Goon
Chairperson: HREC
6th September 2021

ATTACHMENT B: INTERVIEW GUIDE

INTERVIEW GUIDE

1. Work history before and after the implementation of the Clinical Practice Guidelines.

   a. Is there any difference in the treatment of patients?
   b. How long have you been employed?

2. Problems regarding the CPGs

   a. Describe problems encountered
   b. Any challenges with the implemented CPGs
   c. What are CPGs to you
   d. Examples of challenges encountered regarding CPGs

3. Compare the way things were done opposed to the application of CPGs

4. What are your feelings with regards to CPGs?

5. Do you understand what CPGs are?

6. Do you view the CPGs as beneficial?

RESEARCH QUESTIONS

- What are the perceptions of the Pre-hospital Emergency Care Providers on the Pre-hospital Clinical Practice in the Guidelines?
- What are the challenges experienced by the Pre-hospital Emergency Care Providers with regards to the implementation of the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

INTERVIEW QUESTIONS

SECTION A

Socio-economic and Demographic Characteristics

Tick in the appropriate box

- . Gender?

Male	Female

- . Which age group do you fall under?

18-25	26-33	34-41	above 42

- . At what level of care do you function?

BAA	AEA	CCA	ECT	ECP

- . When did you complete your CPG training?

SECTION B

Knowledge, Perceptions and Attitude of PECP's on CPG's

- Please explain to me what you understand by Pre-hospital Clinical Practice Guidelines?
- . What is your opinion on the implemented Pre-hospital Clinical Practice Guidelines?
- . Do you feel the CPG training was necessary?
- Have you found the CPGs helpful during your patient care?
- What are some of the challenges you have encountered post CPG implementation?
- . Do you view the Pre-hospital CPGs as being of benefit to you or your patients?

SECTION C

Experiences encountered by the PECP's

- . Do you have any experiences related to the CPG's that you want to share?
- . In the Pre-hospital setting have you applied the CPG's during patient care?
- . Were the outcomes of your patient care positive or negative?
- . Do you feel the management as per the CPGs is easily applicable in patient care?
- . Is there anything you feel is important that was not covered in the previous questions that we should discuss?

ATTACHMENT C: PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

University of Fort Hare
Together in Excellence

UFH FHREC Stamp

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT:

Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area.

PRINCIPAL INVESTIGATOR: Miss MP Ramoshaba

ADDRESS: 36269 Occult Street
Raceway Park
Ext 226
Bloemfontein
9300

CONTACT NUMBER: 0614214864

You are being invited to take part in a research project that forms part of my Master's degree in Public Health. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you did agree to take part.

This study has been approved by the **University of Fort Hare Faculty of Health Sciences Research Ethics Committee (UFH FHREC) (Ref No:100118-054)** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki and the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members or relevant authorities to inspect the research records.

What is this research study all about?

- *This study will be conducted in the Mangaung Metropolitan area on Pre-hospital Emergency Care Providers that have completed the Clinical Practice Guidelines Course and will involve data collection by using interviews with the Principal Researcher who is currently conducting research for her Master's degree. Research will be conducted until saturation is reached and no new data emerges.*
- *The objectives of this research are:*
- *To explore the knowledge, behaviour and attitude of Pre-hospital Emergency Care Providers with regards to the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine.*
- *To describe the challenges experienced by the Pre-hospital Emergency Care Providers with regards to implementation of Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?*

Why have you been invited to participate**?**

- *You have been invited to participate because you are Pre-hospital Emergency Care providers.*
- *You have also complied with the following inclusion criteria: you have successfully completed the Pre-hospital Clinical Practice Guidelines training.*
- *You will be excluded if: you do not render your services in the Mangaung Metropolitan area.*

What will your responsibilities be?

- *You will be expected to give consent as a participant in the research and answer interview questions with honesty.*

Will you benefit from taking part in this research?

- *The direct benefits for you as a participant will be an opportunity to give their views on the Pre-hospital Clinical Practice Guidelines and will thus be propelled to gain understanding and clarity for the benefit of the greater society.*
- *The indirect benefit will be the acquiring of knowledge pertaining to the Pre-hospital Clinical Practice Guidelines, which will result in better management of patients due to the application of evidence-based medicine.*

Are there risks involved in your taking part in this research?

- *The risks in this study are minimal to none existent*
- *The benefits outweigh the risk*

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- *Should you have the need for further discussions after the interview process, an opportunity will be arranged for you to meet with the researcher for any uncertainties and the UFH HREC may inspect the research records.*

Who will have access to the data?

- *Anonymity will be ensured by keeping the participants personal information private and not part of the study. Confidentiality will be ensured by keeping all collected data safe and inaccessible to people who will not be part of the research. Reporting of findings will be anonymous by contacting participants privately prior to making public announcements. Only the researchers, coders and transcribers will have access to the collected data. Data will be kept safe and secure by locking hard copies in locked cupboards in the researcher's office and for electronic data it will be password protected. (As soon as data has been transcribed it will be deleted from the recorders.) Data will be stored for five years.*

What will happen with the data/samples?

- *This is a once off collection and data will be kept safe under lock and key and destroyed after five years.*

Will I be paid to take part in this study and are there any costs involved?

No. You will not be paid to take part in the study but refreshments will be served on the day of the interview. Travel expenses will be paid for those participants who have to travel to the site but to avoid any inconvenience, the researcher will be present at your work place for the communication and interviews. There will thus be no costs involved for you, if you do take part.

Who can you contact for additional information regarding the study?

The primary investigator Miss MP Ramoshaba, can be contacted on her cellular phone at 0614214864. Should you have any questions regarding the ethical aspects of the study, you can contact the Chairperson of the UFH FHREC, Prof DT Goon, during office hours at Tel 0437047368

How will you know about the findings?

- The findings of the research will be shared with you by the researcher through a contact session at the ambulance base after making an appointment with relevant managers.

Declaration by participant

By signing below, I ……..……. agree to take part in a research study titled:

I declare that:

- I have read this 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 to both the person obtaining consent, as well as the researcher and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…..……. on (*date*) ……...……. 20....

....

Signature of participant **Signature of witness**

Declaration by person obtaining consent

I *(name)* ……..…… declare that:

- I explained the information in this document 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
- I did/did not use an interpreter.

Signed at (*place*) .....….....…….. on (*date*) ……...…….. 20....

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)*……Mapule Petronella Ramoshaba……..…… declare that:

- I explained the information in this document 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
- I did/did not use a interpreter.

Signed at (*place*) .....….....…….. on (*date*) ……...…….. 20....

....

Signature of researcher **Signature of witness**

ATTACHMENT D: AUTHORISATION DOCUMENTS

Head of the Department
Free State Department of Health
Bloemfontein

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH

Dear Mr Mahlatsi

I am in the process of writing a mini-dissertation to obtain the Masters in Public Health in the Faculty of Health Sciences at the University of Fort Hare (student number 201928118). The title of my study is "**Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area.**

My Supervisor is:
Dr NT NKUTU
University of Fort Hare

The **problem** that has to be addressed is that with the implementation of the Pre-hospital Clinical Practice Guidelines challenges have resulted among the Pre-hospital Emergency Care Providers that need to be addressed for the dissemination of the Guidelines to be well accepted.

The **aim** of the study is to explore the Knowledge, Attitude and Perceptions of the Pre-hospital Emergency Care Providers regarding the implemented Pre-hospital Clinical Practice Guidelines. To achieve this aim, the following objectives will be pursued, namely:

1) To explore the knowledge, behaviour and attitude of Pre-hospital Emergency Care Providers with regards to the Pre-hospital Clinical Practice Guidelines in the application of Pre-hospital emergency medicine.
2) To describe the challenges experienced by the Pre-hospital Emergency Care Providers with regards to implementation of Clinical Practice Guidelines in the application of Pre-hospital emergency medicine?

The methods that will be adopted in this research are a qualitative research approach which will utilise an exploratory and descriptive research design. Semi- Structured in depth individual interviews will be conducted. The proposed study will consist of Pre-hospital Emergency Care Providers in the Mangaung Metropolitan who have successfully completed the Clinical Practice Guideline Training.

The participants will be addressed of the research that is proposed when prior arrangements with the relevant Stakeholders have been made. Once Approval has been granted by all relevant institutions, letters of invitation will be circulated to willing participants. The researcher will ensure that service delivery is not hampered during interaction with the participants at the time of data collection.

I hereby apply to conduct research as approved by the Ethics Committee (Faculty of Health Sciences) for investigating the Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area.

Yours faithfully

Miss Mapule Petronella Ramoshaba
Principal Researcher
Tel: (office) 0184730324 / (cell) 0614214864
Email address: ramzmaps@yahoo.com

APPLICATION FOR PERMISSION TO CONDUCT REASEARCH AT AMBULANCE BASES IN THE MANGAUNG METROPOLITAN

DEPARTMENT OF HEALTH

EMERGENCY MEDICAL SERVICE

BLOEMFONTEIN

9300

September 2021

Dear Sir/Madam

APPLICATION TO CONDUCT RESEARCH AT EMERGENCY MEDICAL SERVICE STATIONS IN THE MANGAUNG METROPOLITAN AREA:

BLOEMFONEIN AMBULANCE BASE

BOTSHABELO AMBULANCE BASE

THABANCHU AMBULANCE BASE

I am applying for permission to conduct research at the Emergency Medical Service Station that are situated in the Mangaung Metropolitan area from the month of July 2020 to November 2020. I am a Masters student at Fort Hare University in the Public Health Department under the Faculty of Health Sciences. I am required to complete a research project in order to fulfil the requirements of my degree. My topic is: **Knowledge, Attitude and Perceptions of Pre-hospital Emergency Care Providers concerning Pre-hospital Clinical Practice Guidelines in the Mangaung Metropolitan area, Free State, South Africa.**

My topic was approved by the Higher Degrees Research Committee of the Faculty of Health Sciences at the University of Fort Hare.

I have enclosed my proposal, CV and a letter from my supervisor for your reference. You may contact my supervisor as well as myself (the researcher) for more information about my research project

Your approval will be highly appreciated

Yours Faithfully

MP Ramoshaba

…….

ATTACHMENT E: CODING CONFIRMATION

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 Mapule Ramoshaba. Student No: 201928118.The process that I embarked on are as follows:

I read the 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 …… …26th October 2022

ATTACHMENT F: FREE STATE PROVINCE APPROVAL

health
Department of Health
FREE STATE PROVINCE

20 September 2021

Ms M Ramoshaba
Department of Public Health
University of Fort Hare

Dear Ms. M Ramoshaba

Subject: Knowledge, Attitude and perceptions of prehospital emergency care providers concerning prehospital clinical practice guidelines in Mangaung Metropolitan area, Free State, South Africa

- 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 **Bloemspruit, Bophelong (Botshabelo), Gaongalelwe, MUCCP, Thaba Nchu, Tiger River clinics and Botshabelo Hospital** nor the performance of duties by the respondents or health care workers.
- Confidentiality of information will be ensured and please do not obtain information regarding the identity of the participants.
- 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).
- **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 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.gov.za / Gwantshuws@fshealth.gov.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.

Kind Regards

Mr. MNG Mahlatsi
HEAD: HEALTH

Date: 22/09/2021

Head: Health
PO Box 227, Bloemfontein, 9300
4th Floor, Executive Suite, Bophelo House, cnr Maitland and, Harvey Road, Bloemfontein
Tel: (051) 408 1646 Fax: (051) 408 1556 e-mail:khusemj@fshealth.gov.za@fshealth.gov.za/chikobvup@fshealth.gov.za