AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

by

STEVEN JOHN CRAWFORD
(2013148909)

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SUPERVISOR
Prof. D.T. Hagemeister
Associate Professor and Head: Clinical Unit (Family Medicine)
School of Clinical Medicine
Faculty of Health Sciences
University of the Free State

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LIST OF ABBREVIATIONS

BEMC	Bachelor of Emergency Medical Care
BHSc EMC	Bachelor of Health Sciences in Emergency Medical Care
BTech EMC	Baccalaureus Technology of Emergency Medical Care
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CPUT	Cape Peninsula University of Technology
CUT	Central University of Technology
DoH	Department of Health
DPSA	Department of Public Service and Administration
DUT	Durban University of Technology
ECP	Emergency care practitioner
ECQF	Emergency Care Qualification Framework
EMC	Emergency medical care
EMS	Emergency medical services
ERIC	Education Resources Information Center
HPCSA	Health Professions Council of South Africa
HPE	Health Professions Education
MEMC	Master of Emergency Medical Care
MSc	Master of Science
NDP	National Development Plan
NECET	National Emergency Care Education and Training [Policy]
NHI	National Health Insurance
NHS	National Health Service [UK]
NQF	National Qualification Framework
OSD	Occupation Specific Dispensation
PBEC	Professional Board for Emergency Care
PhD EMC	Doctor of Philosophy in Emergency Medical Care
RSA	Republic of South Africa
SANC	South African Nursing Council
UCT	University of Cape Town
UFS	University of the Free State
UJ	University of Johannesburg
UK	United Kingdom
USA	United States of America

DECLARATION

I, Mr Steven John Crawford, declare that the master's degree research dissertation or interrelated, publishable manuscript/article, or coursework master's degree mini-dissertation that I herewith submit for the master's degree qualification of Health Professions Education at the University of the Free State, is my independent work, and that I have not previously submitted it for a qualification at another institution of higher education.

Mr S.J. Crawford	**Date**

I hereby cede copyright of this product in favour of the University of the Free State.

Mr S.J. Crawford	**Date**

DEDICATION

As the researcher, I primarily dedicate this research study to my loving and supportive wife (Dr T. Schoeman [Mrs T. Crawford]), as well as my parents (Andrew and Shirley Crawford), for their unconditional support, understanding, and guidance; this in a personal capacity. To my wife, thank you for your understanding and support throughout this research project.

Secondly, I dedicate this research study to future developments and professionalisation of prehospital emergency medical care in South Africa and beyond.

"Change will not come if we wait for some other person, or if we wait for some other time. We are the ones we've been waiting for. We are the change that we seek."

– Barack Obama –

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SELECTED DEFINITIONS AND TERMS

Emergency care: "Defined as medical care that includes health system components, or care delivery platforms, used to treat sudden, often unexpected, urgent or emergent episodes of injury and illness that can lead to death or disability without rapid intervention. It encompasses a range of clinical health-care functions, including emergency medicine, trauma care, pre-hospital emergency care, acute care surgery, critical care, urgent care and short-term inpatient stabilisation. It is a care that is provided to respond to immediate life-threatening conditions and requires resource redistributions to minimise impending death or disability" (Republic of South Africa [RSA]. Department of Health [DoH] 2017a:iv).

Emergency care practitioner (ECP): Any individual who has completed a four-year qualification in the metier of prehospital emergency medical care (EMC), which allows for registration as an ECP with the Health Professions Council of South Africa in terms of the Health Professions Act (Act No. 56 of 1974) (RSA DoH 2014:3).

Emergency medical services are defined as "any private or state organisation dedicated, staffed and equipped to offer prehospital medical treatment and transport of the ill or injured and where appropriate the inter-health establishment referral of patients requiring medical treatment en route, prehospital emergency medical services for events and the medical rescue of patients from medical rescue situations" (RSA DoH 2017a:v).

Research method is the technique that is utilised to implement the methodology of proposed research. There needs to be coherence between the research methodology and the methods selected for pursuing data gathering. The research method articulates the strategy to be pursued in data gathering, analysis, interpretation, and communication of findings (Virginia Tech 2018).

Research methodology: The plan or strategy that is informed by the researcher's underlying philosophical assumptions and that provides the blueprint with reference to data-gathering methods and analysis (Nieuwenhuis 2015c:70).

Structured postgraduate programmes: The research does not initially suggest at which National Qualification Framework (NQF) exit level the programme should be amended. Because the discussed undergraduate qualification exits at NQF level 8, the programme that will be investigated by this study will have to be set at NQF level 8 and above, thereby

potentially accommodating postgraduate diplomas and master's and doctoral degrees. The structured aspect refers to coursework, which should enhance graduates' knowledge, skill, and ability in the metier of prehospital EMC, and be complemented by a research component, which will lead to the achievement of the qualification.

RESEARCH SUMMARY

Keywords and Terms: emergency care practitioner, National Health Insurance, postgraduate studies, South Africa, prehospital emergency medical care, specialisation, professionalisation

With this study, the researcher pursued an investigation into the perceived need for structured postgraduate programmes for emergency care practitioners (ECPs) in South Africa. In 2017, South Africa terminated the vocational education and training route that was historically used by the prehospital emergency medical care (EMC) profession. Prehospital EMC education and training now conform to various legislative requirements that inform higher education. In accordance with the adopted Emergency Care Qualifications Framework, the professional registration of ECPs (four-year-degree graduates) is the highest clinical (professional) registration that can be obtained in the profession of prehospital EMC, which is achieved with a four-year qualification. The current academic framework allows for vertical articulation; however, the currently offered master's and doctorate programmes are solely research based, which limits the professional registration, pathways, and clinical abilities of practitioners. The researcher suggests that this may further contribute to a silo-based healthcare system. There is no professional recognition (Health Professions Council of South Africa) of postgraduate programmes pursued within the metier of prehospital EMC.

The research was guided by its aim, research question, and objectives. The holistic aim of this study, with which the research question and objectives were aligned, was to determine the potential need for structured postgraduate programmes that would enhance clinical ability and professional roles and titles (professional registration), allow for further clinical career pathways, and equip graduates with the necessary knowledge and skills to complement a system-based, interdisciplinary, and multi-skilled healthcare system and workforce with the adoption of National Health Insurance by 2030.

The researcher embarked on this study with a pragmatic worldview, and adopted a qualitative research methodology with an interactive research design. Two methods were utilised to obtain the necessary data that would address the research question and objectives. Firstly, a literature study was employed to determine the current body of knowledge and practices in the international and South African settings. In the South African setting, it is evident that minimal literature exists when compared to international research

findings. Secondly, the researcher conducted semi-structured interviews with the goal of producing rich, contextual, and conceptual knowledge relating to the research aim, question, and objectives.

The research findings are presented in Chapter 2 as a publishable, original research article (the article was drafted in accordance with the *Australasian Journal of Paramedicine*'s author guidelines). The thematic coding of the semi-structured interview transcripts produced six dominant themes, namely "undergraduate education and training", "postgraduate education and training", "prehospital EMC shortfalls", "professional positioning with the adoption of the National Health Insurance", "professional recognition", and "the need for structured postgraduate study programmes".

In the presence of an ailing national healthcare system, reform should know no limits, and the ability to multi-skill healthcare professionals, enhance versatility and roles within the healthcare system, and adopt a proactive/preventative approach to healthcare is critical to future success and sustainability. ECPs are in a unique, versatile, and dynamic position to complement the national healthcare system. This study concluded by suggesting that there is a perceived need (professional and healthcare system related) in the South African setting for the development of structured postgraduate programmes that would promote a clinical career within the emerging profession of prehospital EMC. Due to the complex nature of healthcare and educational systems, the researcher provides numerous recommendations to achieve the implementation of the findings (related to the need for structured postgraduate programmes) and to address additional themes that emerged from the primary data.

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CHAPTER 1: OVERVIEW AND ORIENTATION OF STUDY

1.1 INTRODUCTION TO THE STUDY

The researcher pursued an investigation to determine the perceived need for structured postgraduate programmes for emergency care practitioners (ECPs) in the metier of prehospital emergency medical care (EMC) in South Africa. The researcher is very much aware of the Master of Emergency Medical Care (MEMC) degree that is currently offered by various universities and universities of technology in South Africa; however, this qualification, which is intended for the prehospital EMC fraternity, is solely offered as a research-based qualification (Sobuwa & Christopher 2019:4). The MEMC qualification is offered in accordance with the National Qualifications Framework (NQF) policy and is set at NQF exit level 9 (Republic of South Africa [RSA]. Department of Health [DoH] 2017b:3).

In addition to the MEMC degree, the Durban University of Technology and the University of Johannesburg introduced a Doctor of Philosophy in Emergency Medical Care (PhD EMC) qualification. The PhD EMC has been offered at the University of Johannesburg since January 2020, and is the most recent university to adopt this programme to its qualification mix. In accordance with the South African NQF, this qualification allows the graduate to exit at NQF level 10 (Sobuwa & Christopher 2019:4).

There are currently various postgraduate study programmes that ECPs may pursue under the auspices of various healthcare schools, faculties, professions, and industries. In many cases, ECPs opt to pursue qualifications in alternative (non-EMC-related) professional and academic tracks such as management, education, or research rather than in clinical practice.

The objective of this research study was to investigate the potential need for additional postgraduate programmes for ECPs in the emerging profession of EMC in South Africa, beyond the currently offered, research-based, academic MEMC and PhD EMC qualifications. This research study investigated the potential need for structured postgraduate study programmes that would enhance graduates' professional, clinical, and contextual (i.e., EMC and emergency medical services [EMS]) knowledge, broaden the scope of clinical practice

(skills and interventions), and provide further professional (clinical career pathing and registration with the professional body [HPCSA]) opportunities, responsibilities, and employment options within national healthcare.

To conduct this research project, the researcher affiliated himself with the University of the Free State (UFS), Bloemfontein, South Africa. The research was pursued under the Division of Health Sciences Education in the Faculty of Health Sciences to obtain a master's degree in Health Professions Education (HPE).

Currently, under the metier of prehospital EMC education and training, only research-based MEMC and PhD EMC postgraduate academic programmes are offered for ECPs in South Africa; these qualifications do not meet the requirements as stipulated by the researcher, namely to allow professional recognition and clinical career development/pathing. The current academic qualifications for ECPs that complement the researcher's stipulated criteria are the Baccalaureus Technology in Emergency Medical Care (BTech EMC), Bachelor of Emergency Medical Care (BEMC) and the Bachelor of Health Sciences in Emergency Medical Care (BHSc EMC), and as such they determine the professional registration and clinical ceiling for ECPs. The BTech EMC, BEMC, and BHSc EMC degrees are recognised as professional qualifications and enable graduates to register with the Health Professions Council of South Africa (HPCSA) as ECPs. The BTech EMC qualification offered its final intake for the 2019 academic year; this route to obtain ECP status is therefore no longer available (Sobuwa & Christopher 2019:3).

When compared to the number of holders of the various other qualifications and professional registrations that form part of the prehospital EMC cluster of professions, there are few qualified ECPs in South Africa (RSA DoH 2017b:4). With regard to postgraduate studies, the academic tracks and resulting professional development opportunities in the field of EMC are extremely limited. The researcher proposes that, due to the limited professional opportunities and tracks, as well as the limited number of academic pathways, many ECPs opt to pursue postgraduate studies in various other fields/professions, which often results in professionals leaving the emerging profession of prehospital EMC. As EMC is recognised as an emerging or semi-profession, the need for the profession to retain professionals is paramount to future developments. Motivated by the need to retain and provide professional clinical career pathing for ECPs in the emerging profession of prehospital EMC, as well as to challenge the current status quo, which inherently views prehospital EMC as a silo in an otherwise dynamic, comprehensive, and complex healthcare

system, the researcher set out to investigate the potential lacuna in structured postgraduate study opportunities under the metier of prehospital EMC education and training.

Should the researcher be able to determine and identify the gap in structured postgraduate study opportunities, as intended by the proposed criteria and objectives of the study, the value, significance, and contribution may evolve from this research study. The researcher envisioned that this research study may have broad and long-lasting influence (developments and progression) on the wider profession of prehospital EMC and its various stakeholders. Stakeholders include, but are not limited to, higher education institutions and organisations, the national healthcare system, the emerging profession of prehospital EMC, and professional development, registration, and clinical pathways for ECPs in South Africa.

The research followed the structure outlined in Section 1.16, which serves as a reference and guideline for the researcher so that he remained on track with realising the aims, answering the research question, achieving the objectives, and following the research design, methodology, and methods in a trustworthy manner. In addition to providing the researcher with guidance, Chapter 1 serves as a formal requirement for the Health Sciences Research Ethics Committee at the UFS, which allowed for expert opinions and advice to be provided.

1.2 BACKGROUND TO THE STUDY: LITERATURE STUDY

Prehospital EMC training in South Africa has undergone immense changes over the last three decades (Sobuwa & Christopher 2019:1). In April 2017, the South African Minister of Health, Dr Aaron Motsoaledi, signed the National Emergency Care Education and Training (NECET) policy into effect, which has had a major influence on the models of education and training pertaining to prehospital EMC (RSA DoH 2017b:i).

To contextualise these changes, a brief overview of the current developments in national healthcare is required. The White Paper on National Health Insurance (NHI), which was published in 2017 and provides the foundation and implementation strategy for universal health coverage by means of the NHI, identifies EMS as a key area in need of improvement (RSA DoH 2017a:1-2).

This White Paper addresses the reorganisation of the healthcare system in Chapter 6, and highlights three areas of healthcare delivery, namely EMS, primary healthcare services, and

hospital/specialised services (RSA DoH 2017a:29). With reference to EMS, the NHI White Paper highlights holistic improvements of the healthcare system and its ability to render high-quality EMS to the population (RSA DoH 2017a:32).
The highlighted areas are as follows:

- The provision of EMC services is in line with section 27 of the Bill of Rights, in the Constitution of the Republic of South Africa. The NHI will contract accredited service providers to meet the demands of the South African population. EMC services form a key component of the proposed NHI system; continued development and improvement therefore need to be prioritised (RSA DoH 2017a:32).
- "Emergency care delivery will be multi-disciplinary and team-based. The clinical teams need to have competencies to assess, stabilise and provide essential acute emergency care and clinical interventions for all presenting clients. Further care or referral will be guided by the clinical condition of the patient" (RSA DoH 2017a:32).
- "Provincial emergency medical services will work closely with emergency medical specialists to implement appropriate referral guidelines, to ensure a seamless continuum of emergency care along the referral pathway" (RSA DoH 2017a:32).
- "A uniform level of quality for emergency medical services and facility-based emergency care will be provided across the country according to nationally determined norms and standards in relation to the level of care, staffing requirements, prescribed equipment, suitability of response vehicles and ambulances and other relevant components based on the level of care" (RSA DoH 2017a:32).

The National Development Plan (NDP) 2030, which aims to establish a unified healthcare system via the NHI, addresses various concerns. One of the areas that requires redress is that of historical injustices and inequalities that persist in the current healthcare system (RSA DoH 2017a:1-2).

The NECET policy was the Health Minister's response to the required reform of the prehospital EMS sector as the policy addresses reform via education and training. The NECET policy aims to standardise and align education and training within prehospital EMC. This is in accordance with legislation, including, but not limited to, the Higher Education Act of 1997 (No. 101 of 1997) and the NQF Act of 2008 (No. 67 of 2008 as amended) (RSA DoH 2017b:i). In addition to aligning education and training, it is imperative that the policy addresses educational and training needs as identified by the national DoH. The reform must be driven by the ability of the system and its employees to render high-quality

(efficient and effective) healthcare services to the population of South Africa (RSA DoH 2017b:i,6). The objectives of the NECET policy are clear: an emergency care education and training framework aligned with the NQF Act, allowing for career mobility and progression, as well as vertical academic articulation, to enhance the overall quality of EMS, education, and training (RSA DoH 2017b:i-ii;6).

The NECET policy adopted a three-tiered model that comprises entry-level, mid-level, and professional-level qualifications, which is consistent with many other health professions in the national and international realm (RSA DoH 2017b:i). This three-tiered education and training model signalled a new era for prehospital EMC and, in turn, ended the historical education model of vocational training, which offered limited career and professional progression and professionalisation of prehospital EMC in South Africa (Sobuwa & Christopher 2019:2).

The researcher embarked on an academic quest to determine the potential need for structured postgraduate programmes for ECPs in South Africa. ECPs are recognised as having attained a professional qualification in prehospital EMC, which includes the following qualifications: BTech EMC, BEMC, and BHSc EMC. The BTech EMC degree was offered as a one-year full-time, or two-year part-time qualification to candidates who had obtained National Diplomas in EMC. The BTech EMC route for prospective graduates offered its final intake for the 2019 academic year, to align with the three-tiered emergency care education and training framework (Sobuwa & Christopher 2019:3).

Table 1.1: Emergency Care Qualification Framework (ECQF) of South Africa

Programme	Qualification	NQF level	Credits	Duration of study	Qualification structure	Professional registration with the HPCSA
Postgraduate programmes	PhD EMC	10	360	Minimum of two years	Research-based	ECP
	MEMC	9	180	Minimum of one year	Research-based	ECP
Undergraduate programmes	BEMC or BHSc EMC	8	480-520	Four years	Structured coursework	ECP
	Diploma in EMC	6	240	Two years	Structured coursework	Paramedic
	Higher Certificate in EMC	5	120	One year	Structured coursework	Emergency care assistant

Sources: Adapted from RSA DoH (2017b:4); Sobuwa and Christopher (2019:4)

Table 1.1 depicts the national ECQF of South Africa to allow the reader to comprehend the current vertical academic articulation pathway options. Considering the information, current

vertical academic articulation pathways for ECPs are extremely limited when considering the professional registration and recognition of the HPCSA (statutory body). As required by legislation, there are postgraduate academic pathways within the metier of prehospital EMC; however, the researcher questions the effects these qualifications have on the profession and professional (absence of professional recognition with the HPCSA) development. This study addresses this potential lacuna in the emerging profession of prehospital EMC.

Once a graduate has reached ECP professional registration with the HPCSA, obtainable at an NQF level 8 qualification (BTech EMC [final intake - 2019 academic year], BEMC, BHSc EMC), the ceiling for clinical practice, for skills and intervention, for taught clinical knowledge, for professional registration (registered title), and for recognition (prehospital EMC) has been reached. Postgraduate programmes in the emerging profession of prehospital EMC are offered exclusively as research-based qualifications. Despite pursuing postgraduate studies as ECP, there is no professional (prehospital EMC) recognition of such academic advancement by the professional body (HPCSA). In addition to not being professionally recognised, the researcher suggests that there is no direct benefit for the professional career (clinical career) of the practitioner, no enhancement or additional clinical skillset or interventions obtained, and no further ability to complement the healthcare structure/system. Current postgraduate studies serve merely as academic qualifications with no quantifiable (professional registration, clinical career pathing, etc.) impact on the professional (ECP).

As a comparison and to put the above in context, the researcher made reference to nursing in South Africa, which is governed by their statutory body, the South African Nursing Council (SANC). Nursing education and training have undergone immense changes, and are also shifting from a vocational type training model to an NQF-aligned, formal qualification model. When comparing postgraduate qualifications offered in the metier of nursing, the master's and doctorate qualifications are similarly offered as solely research-based qualifications. The differentiator in nursing, when compared to the adopted prehospital EMC ECQF, is that it allows for the development of a postgraduate diploma qualifications framework (SANC 2021a; SANC 2021b). The adopted postgraduate qualifications framework in nursing allows for professional nurses (four-year-degree graduates – NQF 8) to progress to clinical tracks by pursuing a postgraduate diploma in the available specialities. Currently, the postgraduate diploma programmes that are recognised by the SANC include child nursing, community health nursing, critical care nursing (adult and child are two specialities under this domain),

emergency nursing, forensic nursing, mental health nursing, primary care nursing, etc.; the list is extensive (SANC 2021a). Should the professional pursue such a postgraduate qualification, this is recognised and registerable with the SANC. The postgraduate diploma qualification framework allows for clinical career progression, which includes an increased and specialised clinical scope. In the public healthcare sector of South Africa, these SANC-registrable qualifications are recognised and allow for career progression in the healthcare system. This not only refers to the professional nursing role, but includes increased professional responsibilities and remunerative benefits that are thoroughly articulated in the Occupation Specific Dispensation (OSD) policy of professional nurses (RSA Department of Public Service and Administration [DPSA] 2007).

Malebona Precious Matsoso, the then Director-General: Health, national DoH, South Africa, stated that EMS will play a vital, dynamic, and central role in the healthcare system; this role is informed by the adoption and implementation of the NHI system. It is paramount that professionals are able to adjust to the healthcare system and population's healthcare demands (RSA DoH 2017b:ii). A trend evident in the implementation of the NHI system is to move from a reactive to a proactive healthcare approach (a preventative healthcare system). This is in line with international universal healthcare system trends. A proactive healthcare approach, often referred to as preventative healthcare, emphasises primary healthcare structures and services. Primary healthcare services are essential to the holistic success of the NHI, and involve the promotion of health, disease prevention, and the provision of curative, rehabilitative, and palliative services (Feerick, Armstrong, O'Connor & Dixon 2018; RSA DoH 2017a:29).

With the current changes taking place in prehospital EMC training and education, as well as the adoption of universal healthcare coverage, South Africa is not the first country to undertake this mammoth and intricate task. The researcher therefore often refers to changes in EMC training and the NHI system. The adoption of the NHI healthcare structures will drastically alter current healthcare functions and priorities; hence bringing to light and demanding versatility of healthcare professionals. A dynamic approach to healthcare is in line with international trends, which is evident in supporting literature relating to countries that have made this healthcare system shift.

In the international and, more recently, the national setting, paramedic training and education have progressed from vocational training to formal, higher education-accredited qualifications. Literature that informs this change is available for the following countries:

Australia, New Zealand, the United Kingdom (UK), Canada, and South Africa (Williams, Onsman & Brown 2010:581). Williams *et al.* (2010:580) and Peate (2015:226) report that the practice of prehospital EMC has progressed from a semi-profession to the 12th recognised and independently registered healthcare profession in Australia; owing its progression to the adoption of a formalised higher education and training model, increased professional functions and abilities, and the restructuring of the Australian healthcare systems. The diversification of roles and the provision of further skills have allowed paramedics to provide enhanced medical care, in the prehospital EMC sector as well as complementing the broader context of primary healthcare. According to Mason *et al.* (2006; 2007 as referenced in Williams *et al.* 2010:581), the extended roles of paramedics in Australia and the abovementioned countries (UK, Canada, and New Zealand) are having positive outcomes on their national healthcare systems. The researcher recognises that changes (healthcare system changes and education and training) that have taken place in Australia may be directly compared to the current and proposed changes that are taking place in the South African field of prehospital EMC and healthcare.

The researcher advocates a paradigm shift from the traditional practice(s) of EMC. Evidence and a constant increase in knowledge relating to medicine and the various professions in holistic healthcare settings need to be recognised; prehospital EMC cannot remain oblivious to such changes and influences (Moloney 2018:725). Changes in the countries mentioned above required reflection and clarity with regard to professional positioning (EMC) in the healthcare system, which includes investigation into the provisioning of education and training and how the profession's undergraduate and postgraduate academic programmes could produce graduates who are able to meet the dynamic and versatile demands of healthcare in the 21st century (Naidoo 2011:51; Williams *et al.* 2010:580).

The traditional role of the paramedic has changed radically in Australia and the UK (Peate 2015:226; Woollard 2006:1). Some of the changes that have taken place may be due to a widened professional scope; thus challenging the historical status quo regarding the traditional functions of EMS systems. In these countries, prehospital EMC professionals fulfil a multi-faceted role that does not limit their professional practice to traditional purposes when compared to that of the South African ECP day-to-day practice(s).

Epidemiological data inform many healthcare changes and approaches in South Africa: an ageing population as life expectancy increases, a high burden of diseases (quadruple burden of diseases – HIV/AIDS, tuberculosis, and other infectious diseases; non-

communicable diseases [diabetes mellitus and hypertension]; trauma [due to violence and accidents]; and high maternal, neonatal, and child mortality), increased expectations and demands of the population on the healthcare system, poor economic conditions, and financial healthcare support (Peate 2015:226; RSA DoH 2017a:10). Williams *et al.* (2010:582) provide an Australian summary of the epidemiological influences on healthcare as "the population is living longer and [getting] sicker"; the researcher suggests that this may be true in the South African context as well.

Prehospital EMS are currently underutilised in the holistic healthcare system (Feerick *et al.* 2018), especially where resources (facilities, professionals, equipment, etc.) are limited. This statement was made by the applicable authors in the context of rural Ireland. With a healthcare system in transition and various determinants of health burdening efficient and equitable service delivery, a dynamic and alternate approach to healthcare delivery is needed. Williams *et al.* (2010:851) state that "because the search for improved healthcare efficiencies and alternative service delivery approaches has no health discipline boundaries, greater expectations are placed on paramedic graduates and ambulance organisations as increased demands for resources and diversification of roles are now expected". The researcher proposes that this may be an informative and pragmatic approach to addressing various concerns within the South African healthcare context. Naidoo (2011:15) advocates for such a pragmatic approach in an article titled "Emergency care in Africa", in which he emphasises the need for the diversification of professional roles and an interdisciplinary approach to the rendering of healthcare and applicable research.

Currently, ECPs are limited in terms of vertical academic progression pathways that enhance clinical skill, knowledge, intervention, scope, and practice setting (professional registration). In a changing healthcare climate, and in light of increased demands for versatile and dynamic healthcare professionals, extending clinical capabilities (skill, intervention, scope, knowledge, etc.) by means of postgraduate studies needs to be considered (Peate 2015:226-227; Williams *et al.* 2010:581-582; Woollard 2006:1).

In the UK, the underutilisation of prehospital practitioners in the National Health Service (NHS) system was acknowledged. At the time of publication (Woollard 2006:1), the NHS system had structures and burdens/forces (healthcare and extrinsic factors) that were comparable with that of the envisioned South African NHI system (RSA DoH 2017a:10-14; Woollard 2006:1). Various extended clinical career pathways exist for practitioners within the NHS system, and their extended roles in critical care and community-based healthcare

cannot be ignored. This said, paramedics (advanced paramedic practitioners) in the NHS system have been extensively utilised to complement the primary healthcare service(s), which has resulted in the halving of patients being transported to hospitals unnecessarily. This professional role has been adopted with great accuracy, effect, and proven safety. The concept of treating the right patients in the right place at the right time has many benefits for the holistic functioning, efficiency, and demands of the NHS (Woollard 2006:1).

A recent study by Goldstein, Sibanyoni and Vincent-Lambert (2019) considered the viability of on-scene discharge by ECPs in South Africa. This was preceded by the recent announcement that on-scene discharge should form part of an ECP's clinical repertoire (HPCSA 2018:206,224). The immense healthcare burdens, inequalities, and demands (overcrowding of hospitals, lack of professional human resources, etc.) that tarnish the South African healthcare system, and more specifically the public healthcare system, informed their study. Goldstein *et al.*'s (2019:6-7) study concluded that on-scene discharge is a viable option to alleviate overcrowding and lack of human resources experienced by public healthcare hospitals. There are, however, certain criteria that need to be met prior to the successful implementation of such a system. Clinical governance in the prehospital sphere needs to be enhanced, continued quality assurance strategies and structures need to be in place, and the ability to follow up on discharged patients needs to be attended to. At present, such healthcare system criteria render on-scene discharge non-viable, but the issues may be solved through planning and interprofessional collaboration. It is further articulated that enhanced diagnostic and therapeutic scope may be required by ECPs for safe and accurate on-scene discharge implementation (Goldstein *et al.* 2019:6-7).

The UK's professional framework for vertical academic articulation in EMC entails that a structured clinical career path be established. Doing so entails formalised higher education programmes that increase clinical scope, skills and ability, new job titles, and renumeration benefits (Woollard 2006:1-2). Postgraduate programmes have produced advanced paramedic practitioners who hold master's degrees, and consultant paramedics, who have obtained doctorate qualifications. Various clinical tracks can therefore be pursued for the respective levels of qualifications. It is important to note that these qualifications, in addition to having a research component, have been structured to involve coursework for clinical progression, which involves the enhancement of knowledge and interventional skills (Woollard 2006:1,4).

Practitioners in Wales (UK) have the option to pursue a postgraduate Master of Science (MSc) in Advanced Clinical Practice, which will allow for registration as an advanced paramedic practitioner. The motive for this qualification was the possibility of decreasing the number of patients being unnecessarily transported to hospital by EMS, improving patient satisfaction, directing patients to the most appropriate health or social service required at first contact, increasing and prolonging primary healthcare service hours, and preserving the emergency services' and emergency departments' role of managing serious acute clinical conditions and life-threatening emergencies. The MSc in Advanced Clinical Practice entails the strengthening of practitioner autonomy, which is achieved by improving context-specific clinical diagnostic assessments and therapies. Additional modules are offered to enhance training and allow for extended practice in various clinical settings, such as general practice surgeries, coronary care, obstetrics, paediatric care, and emergency departments. The introduction of these postgraduate qualifications has resulted in halving the number of patients being transported to hospitals unnecessarily (Woollard 2006:4-6).

Dippenaar and Wallis (2019) conducted a modified Delphi study to determine the need and viability of introducing intercostal chest drains into the prehospital setting in South Africa. Their study was informed by epidemiological demands and the high prevalence of trauma in South Africa. ECPs do not currently have the skill set to perform such procedures. The insertion of intercostal chest drains is utilised as a definitive management procedure for life-threatening and non-life-threatening pneumothoraces and/or haemothoraces (Dippenaar & Wallis 2019:92-93). Besides the absence of the required skill set by ECPs, there is a deficit in required clinical data to inform the need for such a procedure in the prehospital setting. Various other healthcare system concerns were highlighted in this study. Thoracic trauma in South Africa has a mortality rate of one in ten, which is extremely high when compared to international standards. The effectiveness of an intercostal chest drain in the definitive management of the stipulated pathologies is uncontested. Dippenaar and Wallis (2019) further reported that system and training issues/concerns inhibit the adoption of this clinical intervention in the prehospital setting. Clinical skill and knowledge limitations of ECPs, lack of clinical governance, lack of quality assurance systems, and the inability to manage adverse events are highlighted as concerns in the conclusion of Dippenaar and Wallis' (2019:94) study.

Various other postgraduate academic programmes have been developed and introduced in the UK's emergency care training and education framework over the years. These innovations were informed by epidemiological analyses of healthcare demands and

professional multi-disciplinary requirements to address the dynamic and versatile factors that affect the NHS (Woollard 2006:5-7). Alternate postgraduate qualification examples include critical care retrieval and transport, and community practitioners, as previously mentioned (Woollard 2006:6-7).

Table 1.2: British Paramedic Association qualification framework mapping the NHS career pathway

Professional roles per description	Level of qualification	NHS professional title
Consultant paramedic – Research, education, clinical area specialisation, and management	Master's degree and doctorate	Consultant practitioner
Autonomous advanced paramedic practitioner	Master's degree	Advanced practitioner
Paramedic practitioner	Bachelor of Science with Honours	Senior/specialist practitioner
Paramedic	University diploma or foundation degree	Practitioner
Emergency medical technician	University certificate	Assistant practitioner

Source: Adapted from Woollard (2006:7)

Table 1.2 depicts the academic approach to emergency care education and training in the UK. It is important to note that academic qualifications are often created and adjusted based on epidemiological data, as well as demands by the NHS healthcare system.

Australia's EMS and national healthcare system recognises the absolute need for postgraduate education in order to expand clinical ability and to allow for a change in the patient management approach, including the ability to make urgent clinical decisions, ensure effective clinical assessment, and allowing evidence-based decision making when it comes to on-scene discharge, delayed management, acute management, and the referral of patients to the most appropriate healthcare services. Decreasing the burden on the hospital system is a unanimous theme in countries that have adopted the expanded role of ECPs in primary healthcare and prehospital- and hospital-level systems (Peate 2015:227).

Australia has welcomed the approach of interdisciplinary practice. There is an obvious need for this approach, based on healthcare burdens and skills shortages in the country (Williams *et al.* 2010:582). In order to achieve interdisciplinary practice, the concept of multi-skilling needed to be embraced. This concept entails that healthcare professionals are trained and educated to perform more than one function and being able to practise in a variety of healthcare settings. Flemming (in Williams *et al.* 2010:582) emphasises that the multi-skilling of practitioners is an identified and reputable means of coping with the increased demand and burden on public healthcare systems (Williams *et al.* 2010:583).

The researcher suggests that the profession of prehospital EMC in South Africa is in the ideal position to influence and adopt this multi-faceted approach to healthcare. Historical concerns and barriers exist with this approach to healthcare, including the challenge to define professional scopes of practice, profession territorialism, accountability, curriculum development, safety, and quality of care. These concerns and barriers should not inhibit the realisation of such an approach and extended research into this healthcare approach is advocated (Williams *et al.* 2010:583).

With the COVID-19 global pandemic, there has been an increased demand for healthcare professionals / human resources in the national and international realm. Morrissey (2020:1-5) provides insight into the proactive expansion of the paramedic clinical scope in the United States of America (USA) following the national call (in the USA) for paramedics to complement the healthcare system and structures in previously inaccessible positions, roles, and responsibilities. Influences and demands posed by healthcare systems are evidently versatile and dynamic; the workforce needs to share the same characteristics. Morrissey (2020:1-5) reflects that the healthcare system in California needed to adapt to increased demands due to the COVID-19 pandemic. This resulted in the rapid transformation of the functions and clinical abilities of paramedics. Due to healthcare circumstances, paramedics are required to function in communities with non-emergent calls, perform COVID-19 diagnostic swabs, assess patients on the scene to be able to refer them directly to the most applicable healthcare facility, and perform various procedures under clinical guidance, due to the lack of healthcare human resources. The above example does not adopt the form of formal education and training, but provides context for the requirements posed by a dynamic and versatile healthcare system. An interprofessional, multi-skilled workforce is paramount to an effective 21st-century healthcare system.

With South Africa's healthcare system undergoing major restructuring, there are infinite possibilities that need to be harnessed and researched. A siloed professional approach to the rendering of healthcare in an immensely burdened national healthcare system is set for failure. Blurring of professional boundaries and enhancing the generic abilities of healthcare professionals are means of addressing a nationally burdened healthcare system. The researcher suggests that expanding the current roles and clinical abilities of ECPs is a potential means of addressing these international healthcare trends; according to the referenced literature, this is a viable and effective strategy (Williams *et al.* 2010:583).

The researcher aimed to determine the potential need for structured postgraduate programmes for ECPs in South Africa; this is in agreement with and supported by the referenced literature, which reports great successes. The motives for the professional development of prehospital EMC are enhanced employment opportunities (clinical career tracks) and, ultimately, the ability to have a positive influence and to be versatile and utilised to overcome challenges that burden the South African healthcare system. Researching, defining, synthesising, and implementing potential structured academic tracks offer infinite opportunities in a versatile and dynamic national healthcare setting. The researcher needs to highlight various considerations that need to be taken into account when undertaking this endeavour, including the need for strong leadership and professional guidance, and for standardising academic approaches to competencies, curricula content and design, and professional titles (registration with the statutory body). Opportunities exist, and they need to be thoroughly harnessed. A quote by Helen Keller, which the researcher believes summarises the required prehospital evolutions, states: "The only thing worse than being blind is having sight but no vision" (Philosiblog 2015).

1.3 PROBLEM STATEMENT

The South African healthcare system and its structures are currently receiving much attention, mainly informed by the NDP 2030, which aims to address various historical and current burdens that influence national healthcare (RSA DoH 2017a:3). Burdens that are highlighted include, but are not limited to, the quadruple burden of disease, and injustices and inequalities that tarnish the healthcare climate in South Africa (RSA DoH 2017a:10). The NDP 2030 addresses the crucial, intricate, and extensive task of achieving universal health coverage via the NHI, which is articulated in the White Paper published in 2017.

The NHI White Paper of 2017 identifies EMS as a key area that requires reform in order to complement and achieve universal health coverage via the NHI. The reform of EMS is predominantly to be addressed via education and training (RSA DoH 2017a:1-2,32). In April 2017, the South African Minister of Health, Dr Aaron Motsoaledi, signed off and published the NECET policy in conjunction with the HPCSA and the Professional Board for Emergency Care (PBEC), which signalled a new era for prehospital EMC education and training (RSA DoH 2017b:i; Sobuwa & Christopher 2019:2). The NECET policy terminated vocational education and training models, with the last registrations of candidates who have successfully completed such training to have taken place in January 2020 (Sobuwa & Christopher 2019:3). The NECET policy furthermore informs the adoption of the three-tiered

ECQF, which complements education legislation that governs higher education in South Africa and is in line with that of various other professional academic tracks (RSA DoH 2017b:i).

This research study aimed to determine the potential need for structured postgraduate studies for ECPs in South Africa. Vertical academic articulation pathways currently exist for ECPs; however, the MEMC and PhD EMC are wholly research-based qualifications and do not complement the trends determined by the literature study. The ceiling for professionally registered (HPCSA) ECPs with reference to clinical practice, clinical knowledge, skills, and interventions, and for professional progression/recognition (title) in the field of prehospital EMC and holistic healthcare structures has been reached. The emerging profession of prehospital EMC is currently self-limiting in terms of career progression and clinical pathways. The researcher suggests that many professionals (ECPs) consequently opt to pursue alternate postgraduate studies under the auspices of various other professions and academic fields. The loss of professionals from prehospital EMC is detrimental to its future development, professional positioning, credibility, and autonomy in the holistic healthcare context.

With the phased adoption of the NHI, prehospital EMC will fulfil a paramount, central, and dynamic role in the national healthcare system, as depicted by the former Director-General: Health, Ms Matsoso (RSA DoH 2017b:ii). The globally adopted concept of treating the right patients, in the right place, and at the right time in order to diminish healthcare system burdens is emphasised in universal healthcare systems (RSA DoH 2017b:ii; Woollard 2006:1).

A consensus study by Van Hoving, Barnetson and Wallis (2015) describes emergency care research priorities in South Africa. In the domain of prehospital EMC, Van Hoving *et al.* (2015) identified various criteria that complement the scope of this research study. The highest-ranking concern was that of required clinical interventions and knowledge to improve patient outcomes. For this concern to be addressed, changes will have to be informed by evidence and, ultimately, education and training will have to adapt and adopt findings for dissemination and implementation (Van Hoving *et al.* 2015:204). The second concern is "appropriate management strategies", which include acquisition and allocation of assets and resources. These resources include human resources. The profession has lost a significant number of professionals (ECPs), mainly because of poor working conditions and inadequate professional financial renumeration and benefits (Van Hoving *et al.*

2015:204). Van Hoving *et al.* (2015) further suggest that a lack of professional opportunities and clinical academic tracks for the prehospital EMC profession of South Africa exacerbates the loss of professionals.

Venter and Stassen (2016) conducted a Delphi study with the aim of identifying the capabilities and scope-of-practice requirements of advanced life support practitioners who undertake critical care transfers. The study found that, in the international realm, paramedics who are undertaking critical care transfers have the opportunity to pursue postgraduate studies, which is consistent with the academic pathway adopted in the UK (Venter & Stassen 2016:58,60; Woollard 2006:6-7). The panel involved in the Delphi study unanimously suggested that further specialist training is required for paramedics who undertake high-acuity critical care transfers (Venter & Stassen 2016:60). Venter and Stassen's (2016) study concluded by revealing that paramedics who undertake critical care transfers in South Africa are not equipped with the necessary clinical skills, knowledge, and scope of practice required for the management of high-acuity patients. Their study does not suggest what additional education and training are required, only that it is evident that there is a definite requirement. International trends towards professional and postgraduate specialisation should be considered; however, contextual research in the South African healthcare climate and system is required to inform specific requirements (Venter & Stassen 2016:61). Informed by the researcher's professional experience, the concept of critical care transport referred to by Venter and Stassen (2016) is merely one aspect of responsibilities undertaken by ECPs in South Africa. The researcher identified that Venter and Stassen's (2016) study provides limited insight and rationale for this investigative study, which has an intimate focus on a single aspect of the current roles and responsibilities of ECPs.

The problem statement was informed by the existing literature as articulated in the research study background. It is evident that there is an international trend regarding the need for and adoption of a multi-faceted, multi-skilled practitioner role in the holistic healthcare system with the adoption of the NHI. In the international realm, this role is often complemented by prehospital professionals pursuing further (postgraduate) studies to enhance their clinical abilities and functions. In the national setting, there is a scarcity of evidence and practices that inform and/or complement the international trend of postgraduate specialisation via structured postgraduate studies.

With healthcare reform receiving much attention in South Africa, the researcher suggests that ECPs are in an ideal position to adopt a versatile and dynamic role in the future of

healthcare. Undergraduate education and training are insufficient to fulfil these proposed extended roles and to provide these additionally required abilities. Current vertical postgraduate academic articulation entails wholly research-based qualifications, which are insufficient to complement the future of prehospital EMC in the national healthcare system. Investigating the potential for structured postgraduate studies for ECPs in South Africa is paramount to the future development and success of this emerging profession, namely prehospital EMC, and augmenting healthcare trends in the 21st century, which require a preventative, dynamic, and versatile approach (Peate 2015:226-227; Williams *et al.* 2010:581-582; Woollard 2006:1).

1.4 RESEARCH QUESTION

The research question of this study is as follows: Is there a need for structured postgraduate study programmes for ECPs in South Africa?

1.5 OBJECTIVES OF THE STUDY

The objectives of this research study needed to align to support the research question and the aim of the study. The researcher opted to pursue a single research question and a broad aim, which were supported by various objectives, as articulated below. The objectives of this research were articulated as main (directly related to the research questions) and secondary objectives.

1.5.1 Main objective

The main objective of the study is as follows: To investigate the perceived need for structured postgraduate studies for ECPs in South Africa. (Literature study and interviews)

1.5.2 Secondary objectives

The secondary objectives of the study are as follows:

i. To determine the international trends with reference to and the implementation of postgraduate studies for prehospital EMC professionals. (Literature study)
ii. To investigate the potential professional positioning and utilisation of ECPs in the universal health coverage system proposed via the NHI in South Africa. (Literature

study and interviews)

iii. To determine shortfalls in education and training pathways in relation to competency-based clinical practice for ECPs in South Africa. (Literature study and interviews)

1.6 RATIONALE AND OVERALL GOAL OF THE STUDY

With this research study, the researcher sought to determine the lacuna in structured postgraduate education and training for ECPs in South Africa. The lacuna in postgraduate training that the researcher investigated has specific criteria and goes beyond the currently offered MEMC and PhD EMC qualifications that are offered at various higher education institutions in South Africa, with specific reference to departments that offer prehospital EMC education and training.

In addition to investigating the potential need for structured postgraduate studies for ECPs in the emerging profession of prehospital EMC, the researcher wished to further advise stakeholders with reference to potential academic programmes, and specialities/tracks that may be required and are suggested in relation to current (national and international) healthcare trends and professional positioning in an evolving national healthcare system.

The researcher intends to pursue future studies based on the findings of this study. The researcher's future goal with the findings of this study is conceptualising and ultimately promoting and implementing suggested postgraduate programmes, which will involve the development of a postgraduate academic programme framework. With the latter, infinite professional possibilities and opportunities may emerge, and future professional developments and positioning will contribute to promoting a multi-disciplinary, interprofessional, dynamic, and versatile cadre of prehospital EMC professionals.

1.7 AIM OF THE STUDY

The aim of this research study was to investigate the perceived need for structured postgraduate studies for ECPs in South Africa. The postgraduate studies referred to need to assist the professionalisation of prehospital EMC and potentially complement the healthcare system of South Africa with the adoption of universal health coverage via the NHI by 2030, as informed by the NDP 2030. The postgraduate study programmes investigated need to enhance the clinical knowledge and abilities of practitioners (ECPs) in order to enable professional progression, enhance registration with the statutory body

(HPCSA), and allow for clinical career pathing. Professional recognition and advancement need to be aligned with the stipulated research aim, question, and objectives.

1.8 RESEARCH PARADIGM, METHODOLOGY, AND DESIGN

With reference to research design and methodology, Creswell (2014:31) suggests that a study should be informed by "philosophical assumptions which the researcher brings to the study, procedures of inquiry, specific method/s of data collection, analysis and interpretation". A philosophical worldview is recognised as "a basic set of beliefs that guide action", as explained by Guba (in Creswell 2014:35). Transparency with regard to the researcher's philosophical worldview is important, as researchers are inclined to pursue certain approaches in research based on their worldviews (Creswell 2014:35).

The researcher adopted a pragmatic worldview. Pragmatists are concerned with determining what works, and the practicality of application of the determined solution that will solve the specific problem or question at hand. By adopting a pragmatic worldview, the researcher is less focused on the specific methods employed in pursuing the research; instead, the researcher emphasises the research problem, and is generally willing to utilise the most appropriate design and method/s available to address the research problem (Creswell 2014:39). Pragmatists are not committed to any specific system of philosophy or reality. It is important to emphasise that pragmatists do not see the world in absolute unity; the research design and methodology must therefore be determined according to the data required to address the research problem (Creswell 2014:39-40).

Research methodology is defined as a plan or strategy that is informed by underlying researcher philosophical assumptions, and that provides the blueprint for data-gathering methods and analysis (Nieuwenhuis 2015a:70). The researcher implemented a qualitative research design with the goal of answering the research question and achieving the stipulated objectives. The researcher quotes a definition of qualitative research provided by Creswell (2013:45), which states:

> *Qualitative research begins with assumptions and the use of interpretive/theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and deductive and establishes patterns or*

> *themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature or a call for change*.

There are numerous reasons why the researcher opted to pursue qualitative methodology. The following explains the researcher's rationale for the adoption of a qualitative research methodology:

- With a pragmatic worldview, the researcher is open to pursuing the required methodology, design, and methods that would answer the research question and achieve the objectives (Creswell 2013:28-29).
- In the South African setting, there is limited information/literature with reference to the research topic. With limited information, it may not be possible to adopt a deductive approach required by a quantitative research methodology. It is suggested that a qualitative approach is favoured in investigative studies that pursue a new topic of research (Patten & Newhart 2018:26).
- Qualitative research is pursued because quantitative and statistical analysis do not complement the research problem. When pursuing an investigative inquiry, it is necessary to synthesise understanding of a complex and detailed problem or phenomenon via an inductive approach (Creswell 2013:48).
- Qualitative research is suggested when there is a need for contextualisation of the research problem, and the data required need to be indicative of the specific setting of the research population (Creswell 2013:48).
- There are a limited number of individuals in the research population and access to all or many ECPs and various other stakeholders would not be possible. The literature proposes that qualitative research be conducted in the case of specialised, hard-to-reach populations (Creswell 2013:47-48).

The qualitative research methodology was pursued via an interactive research design (Maxwell 2009:214-253). Maxwell (2009:214-219) argues that qualitative research should be a reflexive process in every phase of a research study. Components of the research design need to work together harmoniously to promote efficient and successful functioning (Maxwell 2009:215). An essential characteristic of interactive research is that it views a research design as a "real entity, not simply an abstraction or plan" (Maxwell 2009:215). The researcher needs to understand the research design and ensure that it is practically achievable and implementable.

The interactive research design comprises five components, all of which influence the coherence of a study. The five components emphasised in an interactive design include the objectives. Maxwell (2009:216) refers to the objectives as the goals of a study, the conceptual framework that guides the study, the research question, the methods of data gathering that will be utilised, and validity. Maxwell (2009:216) does not refer to ethical concerns as a separate component of design. He states that the ethical considerations of a study are critical in all aspects of research. The specific components of the research design for an integrated and interactive relationship each intimately influences the other. For visual purposes, and to enhance understanding, the research design is depicted in Figure 1.1.

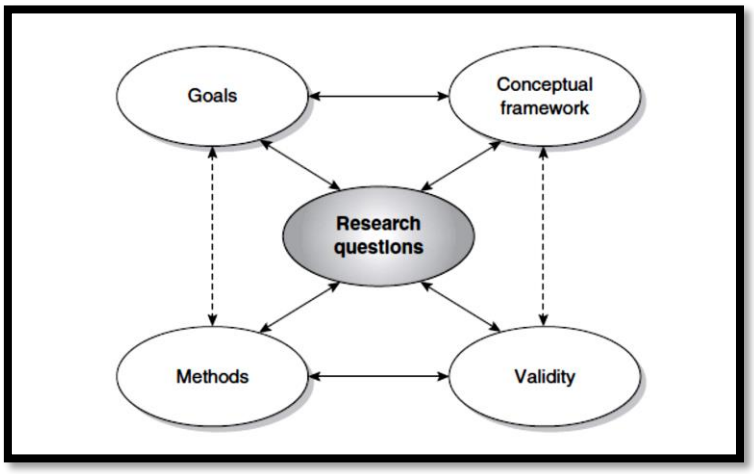

Figure 1.1: An interactive model of research design
Source: Maxwell (2009:217)

Maxwell (2009:217-219) explains that, in addition to the five major components, various other concerns need to guide the design. These concerns may include the "researcher's skills, available resources, perceived problems, ethical standards, research setting, data and preliminary conclusions of the study" (Maxwell 2009:217-218).

The researcher, with his pragmatic worldview, agrees with the reasons provided by Maxwell (2009:218) to adopt this research design. Maxwell (2009:218) explains that the design focuses explicitly on key components of the research design that need to be addressed, which should result in a thorough interrogation of the various components and, therefore, the synthesis of a systematic approach to the research. The research design emphasises its integrative nature; thus, the various components that inform the design remain coherent. The design components simultaneously inform the proposal format for the research, which is in line with the model that the researcher utilised in his research proposal.

With reference to research methodology, Maxwell (2009:219) states: "Because a design for your study always exists, explicitly or implicitly, it is important to make this design explicit, to get it out in the open, where its strengths, limitations, and implications can be clearly understood."

1.9 DESCRIPTION OF THE METHODS

Methodological rules that inform the methods of a study do not guarantee trustworthy results. Maxwell (2009:233) articulates that the value and feasibility of methods employed in a study design may be influenced by the setting of the study, the phenomena being studied, and the actual consequences and practicality of the proposed research strategy. The selection of methods should not be informed by what is to be done and to what extent, but should be informed by the justification to adopt specific methods (Maxwell 2009:234).

The various methods that the researcher has employed are elaborated upon in detail (see Sections 1.9.1 and 1.9.2). Because of the emergent characteristics of qualitative research, certain changes can be made (sampling approach, questions asked, etc.) to the adopted methods during the data-collection phase of the study (Creswell 2014:234-235; Maxwell 2009:234). In a qualitative study with an interactive research design, the inductive approach of data gathering and analysis is emphasised, to allow for deduction of findings based on analysed data. The researcher collected and interpreted the collected data in this study simultaneously in order to improve the results of the study (Creswell 2014:234-235; Patten & Newhart 2008:159).

The researcher made use of two research methods to gather the necessary data to address the research question and objectives. The research methods employed by the researcher entailed a literature study (presented as the research background) and semi-structured interviews.

The researcher initially pursued the literature study as a method to determine what is known about this topic in the international realm, and found that there is an obvious scarcity of literature pertaining to the research topic in the South African setting. The data collected via the literature study were analysed and presented as a narrative. The data were analysed in a deductive manner to address the stipulated research question and objectives of this study. The data obtained from the literature study were utilised to inform the background of the study and the questions that formed part of the semi-structured interview guide. The

data collected via the semi-structured interview method assisted in informing the national context and addressing the specific and applicable research objectives.
Data from the various methods employed were analysed to reach conclusions, with the intention to answer the research question and to achieve the objectives stipulated by the researcher. The process of integrating data from a variety of methods is referred to as the practice of triangulation (Maxwell 2009:236). Triangulation, as a criterion of research trustworthiness, is elaborated upon in Section 1.10.2.1.

1.9.1 Literature study

Rhoades (2011:61) explains that the primary purpose of any literature study is to provide context and to assist the researcher and reader to understand the current knowledge about a research topic. The literature that is reviewed needs to point out the strengths, weaknesses, and/or gaps in the current body of knowledge. Ramdhani, Ramdhani and Amin (2014:47-48) identify two predominant applications of literature studies. Ramdhani *et al.* (2014:47-48) stipulate that a literature study may be utilised to address new and emerging topics that would benefit from holistic contextualisation and synthesis of literature, where a literature study is a recognised method and may be applied as a formal method of inquiry. In new and emerging topics, there is often limited literature pertaining to the specific topic, and a literature study could result in initial or preliminary conceptualisation of the topic (Ramdhani *et al.* 2014:47-48).

The researcher employed a literature study as a data-collection method for the following reasons:

- The literature study assisted the researcher to obtain expert knowledge on the research problem, question, and objectives.
- Due to the scarcity of literature pertaining to this research topic in the South African setting, as determined in the preliminary literature study, the researcher needed to determine what is known about the topic in the international realm.
- The preliminary literature study was used to formulate the objectives of the research study, with the goal of answering the research question.
- The data obtained from the literature study facilitated direction, synthesis of questions, and the design of the semi-structured interview guide.

The researcher conducted a literature study, which is presented in the background section of this mini-dissertation (see Section 1.2). Due to the adopted research design and qualitative methodology, the researcher opted to pursue a narrative format to allow for contextualisation and conceptualisation of the literature. Based on the literature that was consulted, the researcher was able to obtain context with reference to the research topic, provide clarity, and to inform the required objectives of the research study.

The researcher approached the literature study in a transparent manner by clearly articulating the various steps and methods that were utilised to obtain the various sources of knowledge. It is important to highlight that the literature study was not adopted as a systematic literature review, but as a means of providing (to the reader) and obtaining contextual and conceptual knowledge; this was elaborated upon above (see "The researcher employed a literature study as a data-collection method for the following reasons"). Ramdhani *et al.* (2014:48) emphasise that multiple sources need to be utilised to gather data and that analysed data further need to be well articulated. These factors constitute a good-quality literature study. In the adopted format, it is important to note that the focus of a literature study is not to contribute new knowledge, but to summarise and synthesise existing knowledge to achieve stipulated research objectives (Ramdhani *et al.* 2014:48).

To uphold the characteristic of transparency and to enhance the credibility of the literature study (Niewenhuis 2015c:80-81), the researcher was guided by the process of a literature review as suggested by Rhoades (2011:66-69). The process is elaborated upon below. With the adoption of an interactive research design, the literature review method was allowed to adjust according to the available resources (Rhoades 2011:66-69). The researcher's approach to conducting the literature study entailed the following:

1.9.1.1 Defining the topic, research question, and objectives

This step was achieved as a formal requirement for the researcher's study proposal (Health Sciences Research Ethics Committee). Much of this has been adapted and adopted to form Chapter 1 of this mini-dissertation.

1.9.1.2 Identifying the relevant information, inclusion/exclusion criteria, and keywords

The researcher focused on staying up to date with the latest publications and various literature sources relating to the research topic. The literature study was an ongoing process since January 2019, as it formed part of the researcher's preliminary research proposal.

The researcher was predominantly guided by the following search terms and keywords during his literature study, which were applied when searching the various digital academic databases and the Internet for literature sources:

- Prehospital;
- "Emergency Medical Care";
- Specialisation;
- "Postgraduate Stud*";
- "Emergency Care Practitioner"; and
- "South Africa".

The above keywords and phrases were determined during the preliminary literature study, which took place during the proposal phase of this research study. As advocated by Rhoades (2011:66-69), keywords and phrases must align with the research question and objectives.

1.9.1.3 Conducting the literature search

The researcher focused on digital resources when conducting his literature searches. The searches were conducted on multiple dates. The researcher made use of recognised, trustworthy academic databases, journals, and the Internet. The researcher remained critical of the sources utilised. Rhoades (2011:66-69) suggests that multiple resources/databases should be utilised when conducting literature searches.

The researcher primarily made use of the following digital academic databases and journals:

- Academic Search Ultimate;
- OpenDissertations;
- Cumulative Index to Nursing and Allied Health Literature (CINAHL);
- Education Resources Information Center (ERIC);

- Health Source: Nursing/Academic Edition;
- MEDLINE;
- EBSCOhost;
- Google Scholar;
- Journals accredited by the Department of Higher Education and Training relating to the research speciality and topic. Reviewed journals included the following:
    - *African Journal of Emergency Medicine*;
    - *Australasian Journal of Paramedicine*;
    - *Emergency Medicine Australasia*;
    - *Emergency Medicine Journal*;
    - *Journal of Emergency Primary Health Care*;
    - *Journal of Paramedic Practice*;
    - *South African Journal of Critical Care*;
    - *South African Journal of Pre-Hospital Emergency Care*; and
    - *South African Medical Journal*.

1.9.1.4 Screening all literature and excluding irrelevant studies

The literature found by the various searches was screened to ensure alignment with the research question and objectives. The researcher screened the literature and the various resources according to alignment of the source titles with the research topic and publication dates (literature from 2010 to 2021 was filtered). With reference to an article by Woollard (2006), the researcher deviated from the stipulated search dates (filter), which was due to the alignment and applicability of this source with this research study. The literature that remained was deemed trustworthy, as the academic databases and journals utilised are academically recognised as trustworthy sources. The remaining literature was further filtered according to the abstract.

1.9.1.5 Scrutinising the relevant studies

Based on the remaining literature, the researcher included applicable literature as far as academically and practically possible.

1.9.1.6 Extracting data and coding

The literature was engaged in an objective manner, with emphasis on informing the specific research objectives and research question.

1.9.1.7 Synthesising the findings

Relevant literature was extracted with reference to alignment with the objectives and research question of this mini-dissertation. The researcher strove to provide thorough context of the international and national settings, which is in line with his reasons provided for employing a literature study.

1.9.1.8 Developing conclusions and recommendations

A literature study is recognised as an inductive and emerging process, where the researcher determines the most effective manner in which to articulate the findings. The researcher opted to articulate the findings of the study in a narrative format, which formed the background to the research study. The researcher emphasised transparency throughout the process with the goal of enhancing the trustworthiness of the literature study.

1.9.2 Semi-structured interviews

Semi-structured interviews, as a method to obtain qualitative data, are a highly effective and widely utilised measure often adopted by qualitative researchers (Patten & Newhart 2018:161). An interview is defined by Nieuwenhuis (2015c:87) as a "two-way conversation in which the interviewer asks the participant questions to collect data". Interviews aim to obtain rich and valuable data to address the research question and objectives. Data may include the interviewees' ideas, subject knowledge, beliefs, views, opinions, and individual behaviour (Nieuwenhuis 2015c:87). After the literature study was conducted, the researcher pursued semi-structured interviews as an additional method, with the goal of collecting data to answer the stipulated research question and to achieve the applicable objectives of the research study.

The researcher opted to use semi-structured interviews as a data-collection method in this research study due to the specific objectives that needed to be addressed. The strengths of semi-structured interviews, as identified by Patten and Newhart (2018:161), are the ability of the researcher to ensure that the predetermined questions in the interview guide will elicit the required information, that the questions are complete, and that no explicit researcher bias is evident. Furthermore, the researcher is permitted to deviate, with reason, from the stipulated interview guide. A reason for deviation from the interview guide may be that the interviewee did not fully understand the questions. The researcher may probe

for rich and meaningful data should the interviewee respond with a terse answer; thus further complementing the collection of rich data. Should the interviewee respond and provide unexpected and/or unusual answers, the semi-structured interview guide allows the researcher to deviate and to probe these views, ideas, perceptions, and opinions (Nieuwenhuis 2015c:87; Patten & Newhart 2018:161).

The objective that the semi-structured interview method wished to address was elaborated upon accordingly, namely collecting contextually insightful (rich) information. The literature study that informed the background of this research study found that there is an obvious lacuna in the national (contextual) setting as related to the research topic. The researcher utilised data gathered from the literature study to inform, develop, and guide various questions that formed part of the semi-structured interview guide. The questions were constructed and posed in accordance with the prominent trends that emerged from the literature study. Due to the scarcity of such data (literature) in the South African context, the researcher determined that conducting a literature study, which included international sources, to aid the development of an interview guide would enhance the quality of data collected.

The researcher's approach to conducting the semi-structured interviews was supported by the research design (Maxwell 2009:236). Maxwell (2009:236) emphasises that the practice of the operationalisation of research questions and objectives into interview questions is a "vestigial remnant of logical positivism that bears little relationship to qualitative research practice". Maxwell (2009:236) further states that "there is no way to convert research questions into useful method decisions; your methods are the means to answering your research questions, not a logical transformation of the latter".

With this approach adopted to develop the semi-structured interview guide, the researcher aimed to develop interview questions that were not merely logical derivatives of the research question and objectives, but questions that would produce rich data, which would answer the research question and assist to achieve the stipulated objectives.

The semi-structured interview method employed as depicted above was predominantly informed by Maxwell (2009), Nieuwenhuis (2015c), and Patten and Newhart (2018).

1.9.2.1 Target population

Due to the nature of the research, the researcher determined that various stakeholders would influence the overall aim, research question, and objectives of this research study as an investigation into perceived structured postgraduate programmes for ECPs in South Africa.
This research study's suggestions and conclusions may have a direct influence on the professional clinical career pathing of ECPs. Defining the research population entailed identifying dominant and influential role players in the domain of this research; if the realisation and implementation of postgraduate programmes were ever to become a reality.

The various role players who comprise the research/target population of this study, which is in accordance with the research question, objectives, and implementation of research findings, are listed as follows:

(a) Emergency care practitioners (ECPs)

This research was pursued to provide professional academic and clinical career paths that intimately influence this group of professionals. The researcher suggests that they be viewed as the beneficiaries of this research. Should future implementation of postgraduate programmes be implemented, they will be the population who will be eligible to pursue such.

(b) Emergency medical services (EMS)

EMS were included in the research population due to their role in and responsibility for coordinating the various resources required to render EMC to the population of South Africa. EMS referred to in the research population include private and state entities in correlation with the proposed NHI system.

(c) National Department of Health (DoH)

The national DoH was included in the research population, as its national activities aim to improve the health status of the population through the prevention of illnesses and the promotion of healthy lifestyles. The DoH aims to consistently improve the healthcare delivery system by improving access, equity, quality, and sustainability.

(d) Health Professions Council of South Africa (HPCSA) – Professional Board for Emergency Care (PBEC)

The HPCSA was included as a target population due to its governing role in national healthcare. The HPCSA aims to enhance the quality of health by developing strategic policy frameworks to achieve effective coordination and guidance of the various professional healthcare boards. The HPCSA aims to achieve this goal by setting healthcare standards for training and discipline for the professionals registered with the HPCSA, by ensuring ongoing professional competence, and fostering compliance with these standards. The PBEC, under the auspices of the HPCSA, is the professional body referred to throughout this study.

(e) South African Qualifications Authority

This organisation was included in the research population as a juristic body that aims to achieve a world-class qualifications framework for South Africa. The rationale for the NQF includes the objectives of synthesising a single, integrated national framework for learning achievements; facilitating access to, and mobility and progression within, education, training, and career paths; enhancing the quality of education and training; and facilitating redress of historically unfair discrimination in education, training, and employment opportunities.

(f) Higher education institutions

Higher education institutions were included in the research population as bodies that will be employed to potentially refine and disseminate the research findings and suggestions. Formal higher education institutions, and knowledge of and qualification alignment with the NQF, are fundamental for the successful implementation of the findings. Including higher education institutions in the research population aided in achieving the objectives that supported the research question.

1.9.2.2 Description of sample

In qualitative research methodologies, the researcher assumes the role of the research instrument in data gathering; it is therefore accepted that the researcher's subjectivity can never be eliminated completely (Nieuwenhuis 2015c:79). Sampling is the process that is used to select participants from the research population in order to collect data.

Suitable sampling enhances the effectiveness and efficiency of data collection (Nieuwenhuis 2015c:79).

Because of the involvement of various stakeholders, which was elaborated on in Section 1.9.2.1, the literature recommends that purposive sampling is employed, as the researcher wished to obtain specific information from this target population. Purposive sampling is utilised when a researcher perceives the participants as possessing specific/specialised characteristics, knowledge, inputs, and positions; purposive sampling thus represents the most effective use of limited resources (Nieuwenhuis 2015c:79; Palinkas, Horwitz, Green, Wisdom, Duan & Hoagwood 2015:2).

The researcher utilised criterion-i sampling as a purposeful sampling strategy (Palinkas *et al.* 2015:6-7). Palinkas *et al.* (2015:6-7) suggest that a criterion-i sampling strategy is employed when there are various bodies (organisations, agencies, systems, etc.) involved in the research population. This enables a researcher to select participants based on specific criteria that make the participants valuable to the research, whether this is due to knowledge, expertise, a specific role in an organisation, and/or the implementation of the research (Palinkas *et al.* 2015:6).

Sampling in qualitative research is recognised as a flexible process (Nieuwenhuis 2015c:79). The researcher proposed tentative criteria for sampling in the proposal phase of his research. As semi-structured interviews are a follow-up method, coherence with reference to sampling criteria needed to be considered, based on the design of the research study and the data that needed to be analysed.

For sampling, the researcher defined criteria based on interviewee expertise, knowledge, experience, and professional position. The researcher opted to focus on ECPs during the sampling process as the "beneficiaries" of this research study (see Section 1.9.2.1 (a)). The participants did not need to meet all stipulated criteria, which were as follows:

- Registered with the HPCSA as an ECP;
- Possessed professional knowledge and experience with regard to higher education;
- Possessed knowledge with reference to academic legislation that informs higher education in South Africa; and
- Needed to hold a strategic or influential position in a specific institution or organisation.

The researcher conducted a total of eight semi-structured interviews. The researcher focused on sampling individuals who would provide data that would represent the national setting of prehospital EMS and EMC, which informed the interviewees' professional experience, as well as the geographical location of employment and residence. Despite the small research population that was utilised, the collected data needed to, as far as possible, be indicative of a national footprint (to enhance trustworthiness); geographical location and university of graduation were therefore further considered when sampling interviewees.

1.9.2.3 Pilot study

Piloting the semi-structured interview guide took place via exploratory interviews. Prior to pursuing the exploratory interviews, the researcher, in conjunction with his study supervisor, interrogated the interview guide to ensure that the data that were to be collected via the various interview questions aligned with the research question and objectives and would produce data that could be analysed.

Data collected in the exploratory phase of the semi-structured interview were utilised in the analysis phase and contributed to the research findings. This was determined by the both the research supervisor and researcher. The interviewees in the pilot phase of this method needed to adhere to the same sampling requirements articulated in Section 1.9.2.2.

1.9.2.4 Data gathering

Only participants who consented to participate in the research study were considered for the interview process. Interviews were conducted with a one-on-one, semi-structured approach with the aim of obtaining data that would address the stipulated research question and objectives of this study. All interviews were audio recorded for access, transcription, and analysis purposes.

The researcher conducted the interviews as face-to-face interviews, as well as via digital conferencing software, which included Microsoft Teams and Zoom. There was a shift to digital conferencing software for the semi-structured interview process due to national restrictions in response to the global COVID-19 pandemic.

The researcher adhered to an interview guide (see Appendix E) and only deviated where necessary.

1.9.2.5 Data analysis

To enable analysis of the data that were collected, the digital recordings were transcribed. The researcher transcribed all the interviews with commercially available online software (namely Otter.ai) to enhance accuracy and to ease time constraints, which allowed him to orientate himself with and to interrogate the primary data as transcription took place. The interview data were only accessible to the researcher and his supervisor. The research supervisor served as a quality assurance mechanism, which ensured that the interviews were transcribed accurately and that the questions posed to the interviewees aligned with the interview guide.

Maxwell (2009:236) suggests that the analysis of qualitative data should take place simultaneously with data collection. Doing so allows for progressive focusing of interviews yet to be conducted, and testing and communicating the emerging conclusions of the research. Regarding the method of analysis, Maxwell (2009:236-237) suggests combining three methods, namely categorisation of data, connecting strategies, and memos and displays.

Categorisation of data, commonly referred to as coding, is by far the dominant analytical method applied in qualitative research. Maxwell (2009:237) emphasises that the goal of coding in qualitative research data is to "fracture" the data and to rearrange them into categories. Categorisation of data is convenient for comparisons in the same category and/or between categories.

The researcher made use of a coding strategy by means of an inductive coding approach, which implies that themes/categories emerged from the collected data. *A priori* coding categories were also used to a certain extent to assess consistency with international trends, based on the literature study. The researcher made use of qualitative analysis software to assist with the generation of codes/themes/categories and the holistic management of the primary data. The data were interrogated and analysed using ATLAS.ti version 9 software (development company: Scientific Software Development GmbH). This further assisted with the interpretation and presentation of the data.

1.9.2.6 Data interpretation

The interpretation of the collected data followed the analysis phase of the primary data; however, it is not possible (due to the qualitative methodology utilised) to avoid analysis completely up until this point. To a certain degree, analysis took place throughout the data-collection and analysis phases of this study. Once the coding of the data was complete, the researcher shifted from milieu interpretations to formulating analytical understanding of the data. The researcher interpreted the data based on emerging patterns, associations, concepts, and explanations (Nieuwenhuis 2015a:111).

The trends that emerged from the data were articulated by means of an original academic research article (see Chapter 2).

1.10 RELIABILITY, VALIDITY, AND TRUSTWORTHINESS

1.10.1 Reliability

Maree and Van der Westhuizen (2015:38) argue that quality in qualitative research may be judged by validity, practicality, and effectiveness. Nieuwenhuis (2015c:80) acknowledges that reliability and validity of research are of utmost importance; however, when qualitative researchers refer to the latter, they generally refer to the credibility and trustworthiness of research.

Reliability is not generally utilised as a primary quality indicator in qualitative research (Nieuwenhuis 2015c:80). Lincoln and Guba (in Nieuwenhuis 2015c:80) point out that reliability of qualitative research is achieved by ensuring credibility and trustworthiness in research. Lincoln and Guba (in Nieuwenhuis 2015c:80) state that "since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the latter [reliability]".

Yin (in Creswell 2014:252) suggests that a method of upholding reliability in qualitative research is ensuring that the protocol phase of the research study is as thoroughly and transparently documented as possible.

The researcher ensured reliability by thoroughly documenting his research protocol, making necessary adjustments once the research had been implemented, and elaborating with regard to the validity and trustworthiness of the research study.

1.10.2 Validity

Gibbs (in Creswell 2014:251) states that "qualitative validity means that the researcher checks for the accuracy of the findings by employing various procedures". Validity is one of the documented strengths of qualitative research, and refers to the accuracy and authenticity of findings reported from the perspectives of researchers, participants, and readers (Creswell 2014:251).

Creswell (2014:251-252) and Merriam (in Maree and Van der Westhuizen 2015:38-41) elaborate on various procedures to ensure the accuracy of research. Ensuring validity in qualitative research complements the trustworthiness, authenticity, and credibility of the research. Creswell (2014:251) suggests employing multiple procedures to ensure validity. Doing so enables researchers to determine the accuracy of their research findings, and convinces the reader that the research is trustworthy.

As suggested by Creswell (2014:251-252), the researcher upheld validity by ensuring that the following procedures were adhered to: comparing data; member checking; rich, thick description of the findings (as far as academically possible – governed by journal author guidelines); transparency with regard to researcher paradigm; presenting negative or discrepant findings; peer examinations; and external assessment.

1.10.2.1 Triangulation of data

The researcher employed different methods of data gathering, namely a literature study and semi-structured interviews. Multiple information sources complemented each method, thereby ultimately enhancing the validity of the findings. Qualitative research makes use of an inductive approach to data gathering, and the results that are deduced from the data may be referred to as being the result of crystallisation of the data (Nieuwenhuis 2015c:81). Approaching the gathering of data with an inductive approach enables a deeper understanding and enhances transparency for the reader, as well as the emergence of concepts/themes/trends. Crystallisation enhances credibility, which improves the trustworthiness of a study (Lincoln & Guba in Maree & Van der Westhuizen; Nieuwenhuis 2015c:81).

1.10.2.2 Member checking

The researcher allowed the participants access to only their own transcribed interviews should they have requested this. The purpose of this was to confirm that the transcripts were accurate and corresponded with what the interviewee intended to express.

1.10.2.3 Rich, thick description of the findings

The researcher provided a thorough account of the research findings (original research article). The researcher was required to adhere to the author guidelines of the applicable academic journal, which may have resulted in focus being applied to very specific areas of the captured data.

1.10.2.4 Transparency with regard to researcher bias

The researcher was transparent about his research paradigm (worldview) and design throughout the protocol synthesis, as well as in Chapter 1 of this mini-dissertation. The researcher strove to remain as transparent as possible throughout his research study, which was achieved by documenting his various processes and beliefs.

1.10.2.5 Presenting negative or discrepant findings

The themes that were deduced from the collected data were presented. Due to the topic/focus of the format of the original research article (see Chapter 2), it was not possible to communicate all research findings. This may need to be addressed in future research articles.

1.10.2.6 Peer examinations

Presenting the research during the protocol phase of the study invited an interpretive account beyond that of the researcher himself, which provided a platform for peers to critique the research study. The researcher presented the protocol of this research study on multiple occasions; thus enhancing the validity of this research study.

1.10.2.7 External assessment

The researcher submitted to the process of obtaining approval for this research project by the applicable faculty and committee at the UFS. Working in collaboration with an established researcher (research/study supervisor) also contributed to this aspect of validity. The research study was exposed to external review on multiple occasions throughout this project.

1.10.3 Trustworthiness

Lincoln and Guba (in Nieuwenhuis 2015c:80) suggest that researchers must emphasise credibility, applicability, dependability, and conformability as key criteria for ensuring the trustworthiness of research. The quality of qualitative research is ultimately gauged according to its credibility and trustworthiness (Nieuwenhuis 2015c:80-81).

The researcher placed a great deal of emphasis on the contributing criteria and processes that influenced the trustworthiness of the research study. Trustworthiness was achieved by transparently documenting the methodological and design sections of this research study.

1.11 ETHICAL CONSIDERATIONS

1.11.1 Approval

During the protocol phase of this research study, the research protocol was subjected to multiple peer evaluations that formed part of the Division of Health Sciences Education's internal review processes. Prior to the submission of the protocol to the Health Sciences Research Ethics Committee, the study was presented to an expert panel in the Health Sciences Education department for approval. Approval for the research study was obtained from the Health Sciences Research Ethics Committee, with the following reference number: UFS-HSD2020/0009/2403. The ethics approval document is attached as Appendix I.

1.11.2 Informed consent

The semi-structured interview process is the only aspect of the study that engaged human subjects and for which consent was required. All interviewees whom the researcher identified through purposive sampling criteria were asked to provide written consent prior

to the interviews. A description of the study was provided to the participants, which elaborated on the background, problem statement, objectives, and research question of the study.

Consent and information forms relating to the study were provided in English only. The researcher's details (name and contact information) were provided to the interviewees and they were informed that the results of the study and resulting publications would be made available to the interviewees upon their request. The information leaflet and consent forms are attached as Appendices A, B, C, and D.

The interviewees were asked to advise whether institutional or organisational consent was required for their participation in this study, but none indicated that such consent was needed.

The data gathered from the various interviewees were treated with confidentiality as far as possible, and only the researcher and the study supervisor had access to the data. The researcher requested consent for making the source of data known, which was supported by all interviewees. The rationale for this was that interviewees have great and direct value in enhancing the credibility and trustworthiness of the research.

1.11.3 Right to privacy

The data collected from the various interviewees during the semi-structured interview process were dealt with as confidential; no names or specific individual identifiers were thus mentioned in the interpretation phase of the research study.

Information on the source of collected qualitative data is vital for the credibility and trustworthiness of a study. This might include information regarding the institution/organisation and the expertise or professional background of the interviewees; hence, the researcher obtained consent in order to, where possible, make links to the source of data in the interpretation phase of the study. Obtaining this consent does not imply that the interviewees' identifying details were utilised, merely that reference may be made to the type of institution and/or organisation that the interviewee is affiliated with, and that professional experience may be elaborated upon. The current roles and functions of the interviewees may also be elaborated upon.

Aspects of privacy and consent were emphasised in the consent and research information letters that were sent to the participants.

1.12 SCOPE OF THE STUDY

This study falls under the auspices of HPE, with specific focus on structured postgraduate education and training of ECPs registered with the HPCSA in South Africa. Due to the specific focus of this study, various stakeholders of HPE and national healthcare structures were alluded to in this study (target population). Education and healthcare are inevitably complex systems, and many stakeholders may ultimately be involved; a wide scope for this research study was therefore expected.

1.13 VALUE, SIGNIFICANCE, AND CONTRIBUTION OF THE STUDY

The researcher discusses the value, contribution, and significance of the study as a whole in this section. The value of the study flows from the problem statement, aim, research question, and objectives that the researcher stipulated. The contribution of the study emerged from the collected data; the value of this study is therefore informed by the contribution of this research study. In the national context, ECPs are currently limited academically by the ECQF that was accepted in 2017. Postgraduate studies that are currently offered are solely research based (MEMC and PhD EMC), which limits clinical and professional/registration progression, as well as clinical career pathing for ECPs in the emerging profession of prehospital EMC.

In South Africa, no other studies have investigated the potential need for structured postgraduate studies for ECPs, which makes this research project the first of its kind. The healthcare climate and structures in South Africa are currently undergoing major reform, due to the phased adoption of universal health coverage that will be implemented via the NHI system. The adoption of the NHI system is informed by the NDP 2030, which drives redress strategies and provides rationale for change. In conjunction with various healthcare entities that are receiving attention and are undergoing immense change, the researcher believes that the timing of this study is impeccable.

ECPs who are recognised as emergency care professionals in the prehospital sector have been limited to a silo role within the national healthcare structure. This silo role in the national healthcare structure generally revolves around out-of-hospital emergency

management, critical care transfers, aeromedical work, and patient expatriation from other countries. The NHI proposes that healthcare must adopt a preventative and proactive approach to addressing the immense burden of diseases, social injustices, and inequalities in South Africa.

It is acknowledged that EMS are currently underutilised by the holistic healthcare system (Feerick *et al.* 2018). The consulted literature and the researcher advocate the need for further education and training in order to allow for increased roles and responsibilities for EMS professionals (ECPs) in healthcare. Even in the current state, national health bodies seem to be oblivious to the roles that ECPs could fulfil and the impact they could have on complementing the national healthcare setting and structures. The value and significance of this research emerged as the researcher pursued clarity with regard to the research question and objectives.

For an emerging profession in the greater healthcare context, establishing and clarifying professional positioning are of the utmost importance. Professional establishment and positioning in a national healthcare system will require primary, contextualised data to inform and advise. As South Africa has its unique influences and burdens, it will not be possible to directly adopt international trends in education and training, and the professional positioning of ECPs within EMS and the greater healthcare context.

This research project was predominantly guided by the research question, which asks whether there is a need for structured postgraduate study programmes for ECPs in South Africa. The significance of this research may be vast and long lasting. The significance may include the ability of the research study to inform the required progression of professionals (ECPs) in prehospital EMC, including clinical skill, interventions and knowledge, enhanced roles for EMS in healthcare, professional titles, remuneration structures, and complementing healthcare structures with the adoption of the NHI. In countries that have adopted universal health coverage, the multi-skilling of medical professionals has been found to be a highly effective and pragmatic approach to eradicating, proactively preventing, and decreasing the healthcare burdens and demands to which they are exposed. The researcher proposes that ECPs are in a prime position to address these demands if they receive further education and training.

The contribution of this research could be vast and may have long-lasting effects on the national healthcare system. A direct contribution of this study is that ECPs will have professional opportunities in a currently limited professional track (clinical career) to pursue

further, professionally aligned education and training. As there are numerous stakeholders (institutional and organisational) involved in this study, the study's contribution may indirectly influence them as well.

1.14 TIME SCHEDULE

The researcher used the following schedule to guide his research activities in order to complete this project. The schedule was adjusted according to the researcher's academic requirements and the personal schedules of the study participants.

Table 1.3: Time schedule of the study

Preliminary literature study	November 2018 – February 2019
Protocol synthesis	February 2019 – October 2019
Protocol – Peer evaluation	25 July 2019
Language and grammar editing	September 2019 – October 2019
Health Sciences Research Ethics Committee approval	October 2019 – February 2020
Literature study (informal) (pursued throughout the duration of the research)	November 2018 – January 2021
Dissertation phase of the research project	March 2020 – April 2021
Methodology 1 – Literature study	March 2020
Literature study – Inform background of dissertation	March 2020 – April 2020
Methodology 2 – Semi-structured interviews	May 2020 – September 2020
Transcription of interviews	October 2020 – January 2021
Coding and analysis of data	February 2021 – March 2021
Discussion of results – Article format	February 2021 – March 2021
Publishable article synthesis – Draft	March 2021
Publishable article – Finalise	March 2021 – April 2021
Compiling, language editing, and formatting of mini-dissertation	May 2021
Finalising and submission of mini-dissertation	May 2021 – June 2021

1.15 SCHEMATIC OVERVIEW OF THE STUDY

The schematic overview provided in Figure 1.2 depicts the general flow and progression of this research study.

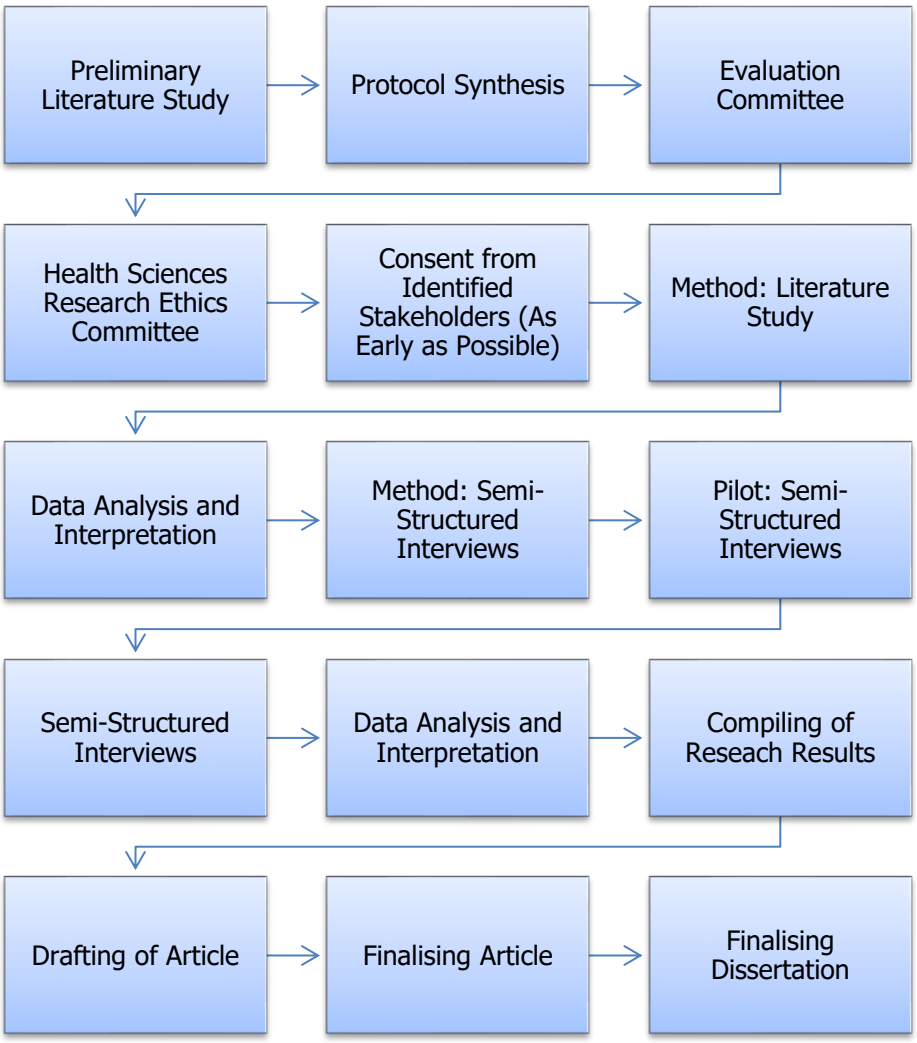

Figure 1.2: Schematic overview of research project

Source: Crawford (2021)

1.16 LAYOUT OF THE DISSERTATION

The layout of this mini-dissertation is as follows:

- Title page
- Index
- List of appendices
- List of figures
- List of tables
- List of abbreviations
- Declaration
- Dedication
- Acknowledgements

- Selected definitions and terms
- Research summary
- Chapter 1: Overview and orientation of study
- Chapter 2: Research findings: Publishable article
- Chapter 3: Conclusions, recommendations, and limitations
- References
- Appendices

1.17 CONCLUSION

Chapter 1 served to provide a thorough introduction and background that formed the overview and orientation of the research study. With the aim of mini-dissertation coherence, the researcher elaborated with reference to the holistic research design, methodology, and adopted methods. The researcher remained as transparent as academically possible in the various sections. The background to this research study, apart from providing context and conceptualising the topic for the reader, served as a means of articulating the findings of the literature study, which is presented as a narrative.

The identified lacuna in knowledge/evidence that this research study addresses was elaborated upon as a problem statement, and the manner in which the researcher opted to address this was articulated by means of a primary research question and various objectives. With the aim of upholding quality indicators of qualitative research, namely credibility and trustworthiness, the researcher clarified and transparently discussed the applied research methodology, design, and methods.

The following chapter was compiled to address the research question and stipulated outcomes via the specific methods elaborated upon, and to report the research findings holistically in an effective and efficient manner.

CHAPTER 2: RESEARCH FINDINGS: PUBLISHABLE ARTICLE

2.1 INTRODUCTION

This chapter is used to articulate the research findings in accordance with the stipulated research question and objectives. The article, titled "An Investigation into Structured Postgraduate Study Programmes for Emergency Care Practitioners in South Africa: A Qualitative Inquiry", was produced in accordance with the *Australasian Journal of Paramedicine*'s author and submission guidelines. The research team (researcher and supervisor) is undertaking a lateral process with the international journal for potential publication. It needs to be emphasised that, due to the journal's author guidelines, it was not possible for the researcher to provide extensive discussions and elaboration with regard to all research findings; this is documented as a limitation.

2.2 RESEARCH ARTICLE

An investigation into structured postgraduate study programmes for emergency care practitioners in South Africa: a qualitative inquiry

Abstract

Introduction

With the adoption of the National Emergency Care Education and Training Policy, as well as the phased implementation of National Health Insurance (NHI) informed by the National Development Plan 2030, an inquiry into structured postgraduate study programmes, current educational setting, and professional positioning of emergency care practitioners (ECPs) in South Africa was conducted.

Methods

This research study employed a qualitative and interactive design. The methods entailed a literature study and semi-structured interviews. Eight interviews were conducted, after which thematic saturation was reached. An inductive and emergent approach to data analysis was pursued. Data produced via the different methods were corroborated.

Results

Six dominant themes emerged, as well as various sub-themes. Dominant themes that emerged were “undergraduate education and training”, “postgraduate education and training”, “prehospital emergency medical care shortfalls”, “professional positioning with the adoption of the NHI”, “professional recognition”, and “the need for structured postgraduate study programmes”.

Conclusion

South Africa’s healthcare system is currently undergoing major reform. The researcher suggests that there are infinite possibilities for ECPs within healthcare with the adoption of the NHI. According to the interviewees, ECPs are seeking extended opportunities in prehospital emergency medical care (EMC). The researcher proposes that this may be remedied via structured postgraduate education and training. In line with international healthcare trends, blurring of professional boundaries, enhancing generic abilities, and expanding clinical career pathways for ECPs may be required. Epidemiological and healthcare system-informed structured postgraduate programmes are deemed a viable and effective strategy.

Keywords:

emergency care practitioner; National Health Insurance; South Africa; prehospital emergency medical care; professionalisation; postgraduate studies.

Introduction

The South African National Development Plan 2030 emphasises the establishment of a national, unified healthcare system, which is to be achieved via universal health coverage and implemented through the National Health Insurance (NHI) (1,2). The NHI White Paper (1), published in 2017, addresses and provides the foundation for implementation of the NHI. Chapter 6 of the White Paper recognises three levels of healthcare, namely emergency medical services (EMS), primary healthcare services, and hospital/specialised services, and advocates for the reorganisation of the current healthcare system (1). With reference to EMS, the following concerns are highlighted:

- The provision of EMC services needs to align with section 27 of the Bill of Rights in the Constitution of the Republic of South Africa. The NHI will contract accredited service providers to meet the demands of the South African population. EMS form a key component of the proposed NHI system, and continuous development and sustainable improvements are prioritised (1).
- EMC delivery will be multi-disciplinary and team based. Clinical teams need to have necessary competencies to assess, stabilise, and provide essential EMC and clinical intervention to all patients (1).
- Provincial EMS need to work closely with emergency medical specialists to implement appropriate referral guidelines to ensure continuity of EMC (1).
- A uniform level of quality for EMS and facility-based emergency care will be

provided according to nationally determined norms and standards (1).

In 2017, Ms Malebona Precious Matsoso, the then director-general of the national Department of Health (DoH) of South Africa, emphasised that with the adoption of the NHI, EMS will play a vital, dynamic, and central role in the healthcare system. It is paramount that prehospital EMC professionals are able to adjust to the healthcare system and the population's epidemiological demands (3). Informed by the NHI White Paper (1) and the education and training needs of the national DoH, the National Emergency Care Education and Training (NECET) policy was signed off by Dr Aaron Motsoaledi as the Minister of Health in 2017 and subsequently gazetted. The NECET policy has had an immense impact on education and training models for prehospital EMC (3). The objectives of the NECET policy are clear; including an EMC education and training framework that is aligned with the National Qualifications Framework (NQF) Act, enhancement of career mobility and progression, vertical academic articulation, and ultimately to guide the professionalisation and quality of EMS via education and training (3).

Table 1. Emergency Care Qualifications Framework (ECQF) of South Africa (3,4)

Programme	Qualification	NQF level	Credits	Duration of study	Qualification structure	Professional registration with the HPCSA*
Postgraduate programmes	Doctor of Philosophy in Emergency Medical Care (PhD EMC)	10	360	Minimum of two years	Research-based	Emergency care practitioner (ECP)
	Master of Emergency Medical Care (MEMC)	9	180	Minimum of one year	Research-based	ECP
Undergraduate programmes	Bachelor of Emergency Medical Care (BEMC) or Bachelor of Health Sciences in Emergency Medical Care (BHSc EMC)	8	480-520	Four years	Structured coursework	ECP
	Diploma in EMC	6	240	Two years	Structured coursework	Paramedic
	Higher Certificate in EMC	5	120	One year	Structured coursework	Emergency care assistant

* Health Professions Council of South Africa

Depicted in Table 1 is the nationally adopted ECQF, which allows for a three-tiered education and training model that comprises entry-, mid-, and profession-level qualifications (3). The adoption of the ECQF terminated vocational training models and signalled a new era for prehospital EMC in South Africa (4).

According to the ECQF, once a graduate reaches ECP professional registration with the HPCSA with an NQF level 8 undergraduate qualification (see Table 1), the ceiling for clinical practice, registration, and progression is reached. The postgraduate programmes depicted in Table 1 are offered solely as research-based qualifications for prehospital EMC. Despite ECPs pursuing postgraduate studies, there is no professional recognition by the HPCSA of such academic advancement and no direct benefit to clinical career progression of ECPs. Due to the adoption of formalised education and training models, Williams *et al.* (5) and Peate (6) report that the practice of prehospital EMC has progressed from an emerging profession to the 12th recognised and independently registered healthcare profession in Australia. The adopted programmes have increased professional functions and abilities in the Australian healthcare system (5,6). Implemented changes have resulted in positive outcomes (5). The researcher suggests that changes that have taken place are comparable to current changes and advancements that are taking place in the South African healthcare system.

Table 2. British Paramedic Association qualification framework mapping the National Health Service (NHS) career pathway (7)

Professional roles per description	Level of qualification	NHS professional title
Consultant paramedic – Research, education, clinical area specialisation, and management	Master's degree and doctorate	Consultant practitioner
Autonomous advanced paramedic practitioner	Master's degree	Advanced practitioner
Paramedic practitioner	Bachelor of Science with Honours	Senior/specialist practitioner
Paramedic	University diploma or foundation degree	Practitioner
Emergency medical technician	University certificate	Assistant practitioner

Table 2 depicts the academic approach to emergency care education and training in the United Kingdom (UK), as well as professional recognition within the NHS system. Various postgraduate programmes have been developed in the UK, which are informed by epidemiological analysis of healthcare demands and requirements for multi-disciplinary practice in the NHS (7). Career progression through formal postgraduate qualifications and informed by NHS demands includes critical care retrieval and transport, as well as community practitioners; for example (7). These qualifications allow for recognition with their professional body (Health and Care Professions Council), clinical career progression within the NHS, and professional gain for the practitioner.

The researcher advocates for a paradigm shift to the traditional practices of prehospital EMC. Evidence relating to healthcare and the various professions needs to be recognised; prehospital EMC and national healthcare systems cannot remain oblivious to international changes (8). It is reported that changes in Australia, New Zealand, the UK, and Canada have required reflection and clarification with regard to professional positioning in national healthcare systems. Clarification involved the provisioning of education and training, and how the profession's academic programmes could produce graduates and meet the dynamic and versatile demands of healthcare in the 21st century (5,9).

Prehospital EMS are underutilised in healthcare systems (10), especially when resources (facilities, professionals, equipment, etc.) are limited. Williams *et al.* (5) state that "because the search for improved healthcare efficiencies and alternative service delivery approaches has no health discipline boundaries, greater expectations are placed on paramedic graduates and ambulance organisations as

increased demands for resources and diversification of roles are now expected". The above-referenced literature was that of rural Ireland and Australia. The researcher cannot ignore the comparability of the context and the value of the above-referenced literature to South Africa.

The researcher pursued an investigation into structured postgraduate programmes for ECPs in South Africa in order to address the shortfall in the current ECQF and to allow for extended professional clinical career pathing. The researcher's motives that informed this investigative inquiry were profession and professional development, professional recognition, and allowing for clinical career pathing for ECPs in South Africa.

Methods

Study design

As a pragmatist, the researcher's rationale for the choice of methodology and design was based on the identified research problem; thus focusing on required methods to address the research question and objectives (11). A qualitative methodology with an interactive research design was pursued (12,13). The methods adopted were a literature study and semi-structured interviews.

Literature study

A literature study was employed as a method to determine the current body of knowledge in the national and international realm (14), to obtain expert knowledge, and to achieve the research objectives.

Semi-structured interview

Semi-structured interviews produced contextually insightful data, which allowed for the corroboration of the data obtained from the literature study (15).

Participants and procedures

A purposive sampling strategy was employed. The interviewees did not need to meet all stipulated sampling criteria; therefore only being registered as an ECP was deemed compulsory. The sampling criteria were as follows:

1. Must be registered with the HPCSA as an ECP;
2. Possess knowledge and experience with regard to higher education;
3. Possess knowledge with reference to academic legislation that informs higher education in South Africa; and
4. Needs to hold a strategic and/or influential position in the specific institute/organisation of employment.

One-on-one interviews were conducted, either face to face or via digital conferencing software (Microsoft Teams, Zoom, etc.), and were audio recorded for ease of storage and analysis. The interviewees were required to provide written consent prior to the interview. The average duration of an interview was 40 minutes.

Instrument

The semi-structured interview guide was informed by the literature study and identified lacunas in the national setting. Semi-structured interviews allowed for deviation from the interview guide where deemed necessary (15,16). Two pilot

interviews were conducted, and the resulting data were included in the analysis phase of the project.

Data analysis

Audio recordings were transcribed verbatim. Thematic analysis of the transcripts was supported by qualitative analysis software (ATLAS.ti version 9; Scientific Software Development GmbH). The dominant themes and sub-themes that emerged from the analysis are presented as the research findings. Analysis took place until thematic saturation was reached.

Ethics

Ethical approval was obtained (Approval No: UFS-HSD2020/0009/2403) from the Health Sciences Research Ethics Committee in the Faculty of Health Sciences at the University of the Free State (UFS), Bloemfontein, South Africa.

Results

Eight semi-structured interviews were conducted. Table 3 depicts the interviewees' geographical location and academic credentials. The thematic analysis of the primary data produced six dominant themes, as well as various sub-themes. The themes were identified by categorising codes. The dominant themes entailed "undergraduate education and training", "postgraduate education and training", "prehospital EMC shortfalls", "professional positioning with the adoption of the NHI", "professional recognition", and "the need for structured postgraduate study programmes".

Table 3. Interviewees' geographical location and academic credentials

Interviewee	Geographical location	Area of employment	Undergraduate qualification and university of graduation	Postgraduate qualification and university of graduation (completed or currently enrolled)
Interviewee 1	Free State, South Africa	Higher Education and Operations	• National Diploma in EMC – Central University of Technology (CUT) • Baccalaureus Technology of Emergency Medical Care (BTech EMC) – Cape Peninsula University of Technology (CPUT)	Master of Health Professions Education (HPE) – UFS
Interviewee 2	Western Cape, South Africa	Operations	• National Diploma in EMC – CUT • BTech EMC – Durban University of Technology (DUT)	Not applicable
Interviewee 3	Qatar	Operations	• National Diploma in EMC – CUT • BTech EMC – DUT	Master of Science in Critical Care – University of Edinburgh (UK)
Interviewee 4	Free State, South Africa	Higher Education and Operations	• National Diploma in Emergency Medical Care – CUT • BTech EMC – CPUT	Master of HPE – UFS
Interviewee 5	Free State, South Africa	Higher Education	• National Diploma in EMC – CUT • BTech EMC – CPUT	Master of HPE – UFS
Interviewee 6	Free State, South Africa	Operations	• National Diploma in EMC – CUT • BTech EMC – DUT	Master of Emergency Medical Care – University of Johannesburg (UJ)
Interviewee 7	Gauteng, South Africa	Higher Education	• BTech EMC – UJ	Master of Philosophy in Emergency Medicine –

Interviewee	Geographical location	Area of employment	Undergraduate qualification and university of graduation	Postgraduate qualification and university of graduation (completed or currently enrolled)
				University of Cape Town (UCT)
Interviewee 8	Western Cape, South Africa	Higher Education and Operations	• National Diploma in EMC – CUT • BTech EMC – CPUT	• Master of Philosophy in Emergency Medicine – UCT • PhD EMC – UCT

The researcher articulated the following themes in no specific order, as representative of the interview data.

Theme 1. Undergraduate education and training

This theme emerged from the discussion of the education and training of ECPs when compared to day-to-day operational requirements. This theme had numerous sub-themes, as the interviewees generally highlighted shortfalls in undergraduate programmes. The interviewees informed this theme when reflecting on operational readiness and experiences post qualification. Dominant sub-themes that emerged related to being referred to as a “jack of all trades”, a “lack of evidence informing curriculum”, “in-service training and experience” having to cover for knowledge/training shortfalls, and the absence of an “internship” to establish professional proficiency and further serve as a means of quality assurance.

> Interviewee 3: *"We can basically say, jack of all trades, but a master of none. So, we can basically do a little bit of everything and because of that, I think a lot of people suffer, patients suffer because of that."*

Theme 2. Postgraduate education and training

As depicted in Table 3, only one of the interviewees had pursued ECQF-aligned postgraduate study. When discussing the interviewee's choice of postgraduate study, the following sub-themes emerged: the currently offered MEMC and PhD EMC are "research-only" programmes, which lack "professional recognition" and serve merely as an academic qualification. The absence of "clinical career pathing" for ECPs was another sub-theme. The interviewees were further concerned that topics pursued through the MEMC and PhD EMC routes have "minimal impact on the emerging profession" due to their academic alignment and orientation.

> Interviewee 1: *"So pursuing an MEMC, would at the end of the day, you are achieving the goal of obtaining a master's, but there is no influence or no change that occurs within the healthcare system."*

> Interviewee 7: *"There are programmes available, like the master's degree programme… Those things obviously will allow you to go and do doctoral studies as well. But yeah, in terms of actual clinical practice, they don't make a difference..."*

Theme 3. Prehospital emergency medical care (EMC) shortfalls

This theme emerged from the various concerns expressed relating to prehospital EMC. Sub-themes entailed the reluctant and leisurely "reform of EMC", with emphasis of generational and historical influences. ECPs are often "practising outside of scope" when performing high-acuity transfers. There is a lack of a "quality assurance" culture in prehospital EMC; whether it be educational or operations related. Due to the previously identified lack of "professional recognition" and poor management and alignment of EMS systems and resources, the sub-theme of "unmotivated ECPs" also emerged.

> Interviewee 1: *"We [ECPs] are top of the food chain; we are still, by industry, seen as advanced life support. When you look at positions advertised, they would still advertise it as either CCA [critical care assistant], NDip or BTech. All three of them have very different scopes of practice. I think changing the mindset of the healthcare system, where ECPs can actually articulate into specific areas of interest, that would assist the healthcare system and is very necessary."*

> Interviewee 2: *"When you reach the level of ECP, you are placed on an ambulance and you're not used towards the potential of your qualification… I would say 85% of my calls are to patients that do not require an ambulance and do not require hospital. Approximately 80% to 85% of our calls are minor, that require clinic, and are definitely not emergencies, but this is what the ECP ambulances are essentially doing… There is such a shortage of resources, financial resources, and medical resources in the system that we reach a ceiling very quickly and there's not space for*

'specialisation' because there's not enough paramedics on the road, there are not enough ambulances on the road. You end up doing basic life support calls over and over and over... That increases the rate of burnout. That decreases the morale of the ECPs on the road."

Theme 4. Professional positioning with the adoption of the National Health Insurance (NHI)

This theme, which aligns with one of the research objectives, emerged from the data. Sub-themes emerged as the interviewees were questioned regarding the positioning in healthcare with the adoption of the NHI. There was a strong call for "interprofessional education" to enhance patient "continuity of care". The need to be "dynamic, versatile, and reactive" as healthcare professionals and as a healthcare system was emphasised. ECPs need opportunities to "advance knowledge, clinical skills, and abilities", with the goal of "relieving pressure on the healthcare system". "Public awareness" emerged as a means of alleviating further pressure on the healthcare system.

Interviewee 5: *"I believe whatever we implement now, whatever seed we plant now, will have a definite impact on the outcome. If we proclaim that the way forward is preventative medicine, I believe that our society will eventually be transformed in that aspect; instead of becoming therapeutic minded, we're looking at how do I maintain my health by myself. That will also lessen the whole burden of the current healthcare system, which will allow the necessary and required expertise to get to the patient that needs it the most. Currently, we do not have that; we have an imbalance with that.*

We have to serve the whole community, instead of servicing the 'real' person that is in dire need of our expertise as ECPs."

Interviewee 8: *"Firstly, I don't think we are adequately equipped skills-wise; our skill set is very focused to emergency management of things. And secondly, knowledge-wise, in my personal opinion and from what I've done through training and from engaging with people working in the primary healthcare setting, whether it be nurses, whether it be a doctor, or general medical practitioner, I do not think our knowledge is up to the level that it needs to be."*

Theme 5. Professional recognition

The interviewees addressed this theme predominantly based on the perceived "lack of profession and professional guidance" from the HPCSA in general and more specifically from the Professional Board for Emergency Care (PBEC). This results in a "lack of professional pathways" in the emerging profession of prehospital EMC once ECP registration is completed. The context of the below quotes reflects the interviewees' perceptions with regard to the MEMC and PhD EMC programmes that are not registerable and/or professionally recognised by the HPCSA.

Interviewee 4: *"No, it doesn't. It mainly focuses on the research aspect. It does not even add value in terms of the scope of practice, adding drugs and skills or more insight into patient care. It is purely research."*

> Interviewee 6: *“No, it doesn’t increase my scope. I think it is maybe just an extra qualification and maybe a way forward of developing stuff, but you won’t really get recognised so that you can do more with the qualification.”*

Theme 6. The need for structured postgraduate study programmes

This theme, which aligns with one of the research objectives, emerged from the data. Sub-themes included the need for “evidence and epidemiologically informed” programmes and curricula in prehospital EMC. Healthcare employment opportunities for ECPs need to be “competency based”. With the goal of “professionalising EMC”, the lack of “clinical career pathing” needs to be addressed. “Speciality” programmes need to be developed to allow for career pathing, differentiation, and alignment with other healthcare professions.

> Interviewee 2: *“We would like to specialise. I think many of my peers, from what we’ve had as discussions, are on the same page; you know, we’d like to specialise. Having courses, even if it is a postgraduate diploma that gives you something, just gives you some form of clinical recognition for what you’ve done. I think that is invaluable; it is needed.”*

> Interviewee 7: *“Imagine if you could phone a specialist ECP for primary healthcare or palliative care, just to give you advice, or maybe if they’re available to come to the scene and help. I think it would improve the industry, I think it would improve the generalist paramedic knowledge, I think it would result in better patient care; not to mention that it removes that clinical ceiling for ECPs. So, you can go further, you can enhance your skill set and scope of your work.”*

Discussion

The adopted ECQF adheres to South African educational legislation, namely the Higher Education Act (No. 101 of 1997) and the NQF Act (No. 67 of 2008, as amended in 2012) (3). When registered as an ECP, the ceiling for clinical practice, skills and intervention, taught clinical knowledge, and professional recognition (HPCSA) is reached. Postgraduate academic pathways exist for ECPs, but lack professional recognition, resultant professional advancement, and clinical career pathing opportunities. Postgraduate programmes serve merely as academic qualifications.

Prehospital EMC education and training have undergone immense changes over the last three decades (4). Formalisation of education and training pathways is a step in the right direction for professionalisation (3,5,9). The question that the researcher poses is whether prehospital EMC undergraduate education and training have kept up to date with 21st-century HPE trends and healthcare demands. The interviewees consistently highlighted concerns relating to undergraduate education and training. As a recognised healthcare profession in South Africa, prehospital EMC is the only healthcare profession without a post-qualification internship; the interviewees highlighted this as a major shortfall in terms of quality assurance. With a call for evidence-informed, competency-based curricula in 21st-century HPE, the interviewees suggested that there is a potential misalignment in the taught curriculum when compared to day-to-day operational requirements, which link extensively to clinical topics of focus and credits awarded towards qualification. Interviewee 3 suggested that EMC undergraduate education and training are producing “professionals” that are referred to as “jacks of all trades”, which potentially leads to poor management of patients. This was

highlighted in the sense that ECPs have a wide knowledge basis, but often have shortfalls in specific areas, which lead to overlooking and/or underestimating presenting pathology. Relying on in-service training and experience to compensate for the suggested educational shortfalls is an unreliable and dangerous practice. The researcher suggests, based on interviewee responses, that undergraduate education and training need to be scrutinised; this with emphasis on a shift towards evidence-informed, competency-based curricula and the greater adoption of a quality assurance culture in prehospital EMC (education and training and operational environment) (17).

Vertical academic articulation pathways exist for ECPs; however, they self-limit the emerging profession of prehospital EMC. The researcher poses the following as a rhetorical question: how can it be that there is no professional recognition of or gain from pursued postgraduate studies? The MEMC and the PhD EMC degrees are offered as research-only qualifications; despite the higher NQF levels, there is no professional recognition or gain in a clinical career. When compared to nursing in South Africa, the master's and doctorate qualifications are also offered as research-only qualifications. The differentiator is the postgraduate diploma qualifications framework, which allows for specialisation in numerous areas of clinical practice, such as child nursing, emergency nursing, forensic nursing, etc. (20,21). The postgraduate qualifications framework allows for enhanced professional recognition and clinical career pathing. Once a professional has completed such a postgraduate qualification, it is registerable with the professional body (South African Nursing Council) (20). If employed in the public healthcare sector of South Africa, which is remuneratively governed by Occupation Specific Dispensation (OSD), such an advancement in qualification and registration is

recognised, which will lead to remunerative benefits, increased responsibilities, and progression in the healthcare system (22).

It is evident that the majority of the interviewees have pursued postgraduate studies, albeit through other professional spheres. Due to the absence of professional recognition (HPCSA), gain, and academic impact, the interviewees suggested that they would rather pursue postgraduate studies that “actually mean something”, which implied broadened professional horizons and competencies once the qualification is obtained. Given the well-documented loss of professionals due to poor working conditions and inadequate remuneration (18), the researcher suggests that the absence of professional (HPCSA) recognition for postgraduate studies and clinical career pathing may exacerbate this loss. The researcher suggests that this may be detrimental to future professional development, professional positioning, credibility, and autonomy in the holistic healthcare context.

The researcher proposes a shift from the traditional practices of prehospital EMC. The profession cannot remain oblivious to healthcare changes and cannot continue to operate as a silo in an integrated healthcare system (8). Prehospital EMC is tarnished by historical injustices and influences that persist well into the 21st century (1,3). The researcher reflects that EMS and EMC redress measures are notoriously slow to incite change. Timelines, lack of transparency, and alignment of the profession with holistic healthcare are worrisome. Merely ticking boxes is insufficient to address the changes and guidance required by the emerging profession. The interviewees highlighted that poorly managed EMS systems and the absence of clinical career pathing and professional recognition

(HPCSA) have resulted in often unmotivated professionals (ECPs). ECPs should be the ones guiding and driving professional development (18). Given the highlighted undergraduate education shortfalls, the interviewees reported that they occasionally practised outside of their scope and clinical abilities (19). This finding is predominantly with reference to critical care transport, which aligns with what had previously been identified by other researchers. Venter and Stassen (19) found that paramedics who undertake critical care transfers in South Africa are often not equipped with the necessary clinical skills, knowledge, or scope required for high-acuity patients. The researcher suggests that influences and challenges experienced by EMS systems and ECPs (the interviewees in the case of this research study) have tumultuous effects on the emerging profession of prehospital EMC.

The lack of professional recognition was a theme consistently highlighted by the interviewees, which is complemented by the theme of prehospital EMC shortfalls. In consultation with variously referenced state publications, the HPCSA, as the statutory body that governs various healthcare professions and with specific reference to the PBEC, seems to be disconnected from national healthcare developments and advocated healthcare trends. The interviewees highlighted the fact that there is an absence of clinical career pathing for ECPs and lack of professional guidance from the PBEC. As an interviewee example with reference to the latter, it was highlighted that a project embarked on by the PBEC, such as the clinical practice guidelines initially released for comment in 2017, had numerous shortfalls in clinical therapeutic areas. A few interviewees highlighted that such occurrences have resulted in personal and professional frustration and embarrassments. The researcher identified a lacuna, which he believed should

have been addressed with the development and implementation of the adopted ECQF, where the PBEC (governing professional board) should have noticed the absence of professional recognition and clinical career pathing above the level of ECP, especially when compared to postgraduate academic pathways of other, better-established healthcare professions such as nursing and medicine. Reflecting on his experiences in the metier of prehospital EMC, the researcher observed that it appears that the emerging profession of prehospital EMC is self-limiting and often generates its own shortfalls.

Based on the discussed themes, it is evident that there are numerous foundational concerns relating to the emerging profession of prehospital EMC. The literature advocates that healthcare systems in the 21st century require a dynamic and versatile healthcare workforce, facilitated by the adoption of an interdisciplinary and multi-skilling approach (5). Healthcare professionals need to be trained and educated to perform more than one function and need to be able to practise in a variety of healthcare contexts. Flemming, cited by Williams *et al.* (5), emphasises that the multi-skilling of practitioners has been identified as a reputable means to cope with the increased demand and burden on public healthcare systems. The researcher further proposes that the profession of prehospital EMC is in the ideal position to influence and adopt this multi-faceted approach. It needs to be further acknowledged that obvious historical barriers exist with this approach to healthcare, including the ability to define professional scopes of practice, professional territorialism, accountability, curriculum development, safety, and standards. Such concerns and barriers should not inhibit the realisation of such an approach, and further research into this healthcare approach is advocated (5).

Informed by the preceding paragraph and as a research objective, the themes of professional positioning with the adoption of the NHI and the need for structured postgraduate studies emerged. The interviewees emphasised the need for the adoption of interprofessional education, with the intent to generate a community of practice and to allow for enhanced professional respect, to establish professional relationships, and ultimately to streamline the continuity of patient care. This topic is well supported by evidence (national and international). The uniform objective of relieving pressure on a burdened healthcare system was emphasised by the interviewees and they had suggestions as to where they could assist. With the adoption of the NHI, emphasis is placed on a shift from a reactive to a proactive healthcare system; primary healthcare and related services are therefore emphasised. The promotion of healthcare and disease prevention, and providing curative services, rehabilitation, and palliative services are essential to the success of the NHI (1,3,10).

Informed by the literature review and interviewees responses, there are definite roles that ECPs could play in a universal healthcare system. This research proposes that there is a need for professionally recognised, clinically orientated postgraduate studies that allow for clinical career progression and that further complement the holistic healthcare system. The interviewees highlighted that had such opportunities existed, namely to pursue structured postgraduate studies towards a clinical career path, all interviewees would have opted for such. According to the interview data, and trends in national and international literature, common areas of interest for structured postgraduate programmes could include that of primary healthcare, palliative care, critical care transport, general medical, and enhanced trauma-related qualifications.

Informed by epidemiological and healthcare system demands, the UK developed extended opportunities for its prehospital professionals (see Table 2), which allowed for extended roles, enhanced registration, and positioning in the NHS system. As an example, such formal qualifications include critical care and community-based healthcare (7). In keeping with the idea of the NHI, prehospital EMC professionals have been extensively utilised to complement primary healthcare services in the NHS (UK) system. It is reported that this has resulted in halving the number of patients being transported to hospitals unnecessarily. The extended professional role has been adopted with great accuracy, effect, and proven safety. The concept of treating the right patients, in the right place and at the right time, has had many benefits for the holistic functioning and efficiency of the NHS (1,7). The researcher, based on his professional knowledge and experience, advocates such an approach and believes that such a study, conducted in the South African healthcare setting, will produce comparable results.

Recommendations and limitations

Due to academic time constraints, available funding, and the employed sampling strategy, the researcher acknowledges that the research sample size will need to be increased in geographical representation to produce enhanced, nationally indicative findings to reach definitive conclusions and/or recommendations. Given the extent of the research findings, it is not possible to elaborate in detail on all the emergent themes; the researcher therefore emphasised only the dominant themes. The researcher proposes that future publications must attempt to address this limitation. Due to the narrow scope of this research study (submitted as a mini-dissertation for obtaining a qualification), the various dominant themes that

emerged may serve as future research topics, to gain further clarity and to allow for the provision of concrete, implementable solutions.

Conclusion

A qualitative inquiry into structured postgraduate programmes for ECPs in South Africa was conducted. The research data brought to light numerous areas of concern relating to the emerging profession of prehospital EMC. The interviewees unanimously supported the trend of extended opportunities within healthcare that will allow professional clinical career progression and further assist in alleviating the burdens on national healthcare. The researcher acknowledges that further research is required to determine if this is true for all ECPs registered with the HPCSA.

South Africa's healthcare system is currently undergoing major reform (comparable with international countries that have made this change); the researcher recognises infinite possibilities with such reform. It is well documented that a siloed professional approach to the rendering of healthcare in a burdened and complex healthcare system is set for failure. Traversing professional boundaries, enhancing the generic abilities of healthcare professionals, and expanding the current roles and clinical abilities of ECPs are required. This research concludes that expanding the current roles and clinical abilities of ECPs in the South African healthcare context, addressed by means of structured postgraduate studies, may be deemed a viable and effective strategy to improving healthcare delivery with the adoption of the NHI. Further research into this specific domain is advocated.

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Conflict of interest

The authors of this manuscript declare no competing interests. The authors of this manuscript have completed the International Committee of Medical Journal Editors' disclosure of potential conflict of interest document.

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CHAPTER 3: CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS

3.1 INTRODUCTION

The researcher conducted an investigation into structured postgraduate programmes for ECPs in South Africa. The researcher is aware of the current ECQF that depicts the various academic qualifications offered in the metier of prehospital EMC. With specific focus on postgraduate qualifications, the MEMC and PhD EMC programmes are offered as research-only qualifications, and lack professional recognition with the HPCSA and the PBEC. Furthermore, there is no substantial professional gain in terms of clinical skills and abilities, nor are there articulation pathways within healthcare (the absence of clinical career pathing) above the professional registration level of ECP. It is recognised that MEMC (NQF 9) and PhD EMC (NQF 10) programmes serve merely as academic qualifications.

Chapter 1 provided an overview and background relating to current trends in prehospital EMC education and training. This provided further insight into national and international trends, wider healthcare system concerns, and presented numerous findings from the literature study that informed the background (see Section 1.2) to this study. Chapter 1 laid out how this study was conducted with the goal of enhancing the credibility and trustworthiness of this research study.

Chapter 2 was presented as a publishable manuscript, written and formatted in accordance with the *Australasian Journal of Paramedicine*'s author guidelines. This academic journal is accredited with the South African Department of Higher Education and Training. The research article served to present the research findings, which were informed by corroborated data from the literature study and semi-structured interviews.

In this final chapter, the researcher concludes the study, with the focus on the research conclusions, recommendations, and limitations. The chapter ends with concluding remarks.

3.2 CONCLUSION

The aim of this research study was to investigate the potential need for structured clinical postgraduate study programmes for ECPs in South Africa. Postgraduate studies referred to need to complement the emerging profession of prehospital EMC and the holistic healthcare system of South Africa, especially given the adoption of universal health coverage via the

NHI by 2030. The adoption of the NHI is informed by the NDP 2030. The investigated postgraduate programmes need to enhance the practitioner's clinical knowledge and abilities, thereby enhancing professional progression, registration (HPCSA), development, and clinical career pathing.

The researcher pursued the research with a single research question, which was supported by various objectives. The research question was as follows: Is there a need for structured clinical postgraduate programmes for ECPs in South Africa? Due to the complexity of the data that emerged from this research study, the researcher addressed the research question after necessary elaboration on the research objectives. The objectives were pursued as main and secondary objectives.

3.2.1 Main objective

The main objective of the study was as follows: To investigate the potential need for structured postgraduate studies for ECPs in South Africa.

This objective is directly aligned with the research question, which was the driving force behind this research study. To achieve this research objective, the researcher relied on data from the literature and data produced by the semi-structured interviews. In the international setting, further employment and clinical career opportunities have been developed for ECPs based on epidemiological and healthcare system demands/requirements. In the international realm, evidence-informed and competency-based formal academic programmes allow for professional gain and recognition. Enabling further personal and professional development of dynamic and versatile healthcare professionals has had immensely positive results on the referenced healthcare systems. In the UK, it is reported that the number of patients being transported to hospitals unnecessarily has halved since adjusting the healthcare system and producing extended skilled and knowledgeable practitioners. Due to limited literature in the national setting, the researcher used primary data (semi-structured interviews) to inform this objective. Data produced from the eight semi-structured interviews suggest the need for structured postgraduate academic programmes that will allow for clinical career opportunities/pathways in South Africa.

3.2.2 Secondary objectives

The secondary objectives of the study were as follows:

Objective 1: To determine the international trends with reference to and the implementation of postgraduate studies for prehospital EMC professionals.

The researcher addressed this objective by means of a literature study, which was presented in Chapter 1 of this mini-dissertation. Various sources of literature that advocate the need for the "specialisation" of practitioners in the prehospital EMC profession exist in Australia, New Zealand, the UK, and Canada. It is evident that the need for dynamic, versatile, and multi-skilled practitioners is especially pronounced in an NHI system. The abovementioned countries achieved this through structured postgraduate study programmes. The development of postgraduate programmes needs to be informed by epidemiological and healthcare system demands. Such an approach allows for evidence-informed and competency-based curricular development. The positive effects reported on the holistic healthcare system of the referenced countries have allowed for professional and clinical career progression. The researcher further acknowledges that such developments in an emerging profession will assist with profession development of prehospital EMC.

Objective 2: To investigate the potential professional positioning and utilisation of ECPs in the universal health coverage system proposed via the NHI in South Africa.

The literature and interview data suggest that EMS and more specifically ECPs are underutilised in the national healthcare system; this may be due to the lack of such professional (human) resources in South Africa or the poor management of such human resources. Informed by the literature and interviews, EMS system shortfalls, poor management, resource abuse, and poor remuneration are commonly reported to result in poor practitioner morale and professionals often end up leaving the emerging profession of prehospital EMC. The researcher suggests that this is detrimental to future developments and the professionalisation/development of prehospital EMC in South Africa.

Informed by the need for structured postgraduate programmes, ECP positioning in a universal healthcare system implemented via the NHI provides many opportunities. Common areas of healthcare that ECPs with extended skills and clinical abilities could advance include primary healthcare services and palliative care. The researcher suggests

that there are no limits to this research objective; if there is an epidemiologically, evidence-informed need in healthcare, ECPs could be in the ideal position to complement the system towards holistic healthcare. This implies that the curriculum at the undergraduate level may need to be reviewed to align with epidemiological and healthcare system demands. The same will be true should further structured postgraduate study programmes be developed.

Objective 3: To determine shortfalls in education and training pathways in relation to competency-based clinical practice for ECPs in South Africa.

The researcher and research study confirm that the current ECQF adheres to educational legislation. This allows for vertical academic articulation and aligns with the NQF and Higher Education Act. It is evident, based on the findings of the semi-structured interviews, that there are concerns with reference to the current undergraduate and postgraduate education pathways. The researcher suggests the need to align undergraduate education and training with the latest HPE trends. HPE trends include that the curriculum and exit-level outcomes of the respective qualifications (currently undergraduate qualifications) be evidence informed (epidemiological and healthcare system demands) and must adopt a competency-based educational model. The greatest concern that emerged from the interviewee data was that qualifications often produce ill-equipped graduates when measured against day-to-day operational (in-service) requirements. Based on the research findings, the researcher proposes that a national review be performed with reference to prehospital EMC education and training curriculum content that informs exit-level SAQA outcomes.

There is an international call for interprofessional education and training to be harnessed, which in this study was supported by the semi-structured interview findings. Adopting interprofessional education and training may mitigate many operational concerns and negative experiences of healthcare professionals in the national healthcare system. The goal is enhanced interprofessional respect and, more importantly, improved patient management. The literature suggests that adopting interprofessional education will allow enhanced continuity of care for the patients served by the healthcare system.

The researcher and interview findings suggest that current postgraduate programmes (ECQF) lack impact on the clinical career profession of ECPs. Postgraduate studies need to allow enhanced professional recognition, clinical career pathing, enhanced clinical competency, and professional recognition, as well as benefits. Informed by the interviewee data, it is further emphasised that prehospital EMC must adopt a culture of quality

assurance. An example of a quality assurance measure may be that of a formal and compulsory post-qualification internship. Prehospital EMC is currently the only health profession in South Africa with no post-qualification internship.

Prehospital EMC education and training present many exciting opportunities that need to be explored (researched), developed, and implemented.

3.2.3 Research question

The research question of the study was as follows: Is there a need for structured postgraduate study programmes for ECPs in South Africa?

This research study suggests that there is a need for structured clinical postgraduate study programmes for ECPs in South Africa. Structured postgraduate programmes will not only allow for vertical academic articulation, but will also have extended positive effects on healthcare. The researcher suggests that structured postgraduate programmes will address the current lack of clinical career pathing for ECPs and will assist with the professional development of prehospital EMC in South Africa, in order to align with other healthcare professions such as nursing and medicine. Numerous other advantages exist, including the potential development of a multi-skilled, dynamic, and versatile healthcare professional; assisting in alleviating healthcare system burdens; and potentially allowing for further development of the stipulated stakeholders.

The research question, as per the academic approach and regulations, was addressed in Chapter 2, which was presented as an original research article. The research article was drafted in accordance with the identified academic journal's author guidelines.

3.3 RECOMMENDATIONS

The researcher recommends the following:

- Due to the extent of the primary data findings of this study, it is advised that future academic publications be produced with reference to specific topics (these were presented as themes in the research article in Chapter 2).
- Due to the journal limitations (author guidelines), it was not possible for the researcher

to provide extensive discussions and elaboration with regard to all research findings. This was also stated in the article as a limitation (see Chapter 2).

- There is an international call and need for interprofessional collaboration within healthcare; be this healthcare system and/or education and training related. Strengthening interprofessional collaboration needs to receive the necessary attention.
- The research findings suggest that there is a need for a review of curriculum design, areas of content focus, and exit-level outcomes of undergraduate prehospital EMC education and training in order to be aligned with operational and healthcare system demands.
- Specific research findings may serve as topics for future research projects in order to gain further and deeper insight into national and international trends.
- Collaborative efforts among academics in the emerging profession of prehospital EMC are crucial to professionalisation strategies, future developments (operations and education and training), and alignment with the NHI system.
- Consultative processes need to be implemented in the emerging profession of prehospital EMC in order to ensure that advocated changes and future developments are indicative of "actual" concerns/areas.
- Further research needs to be conducted to determine potential clinical career pathways that may be addressed by the proposed structured postgraduate programmes.
- Informed by further research, which should aim to identify specific areas that may be attended to by postgraduate programmes, it is recommended that such programmes be designed and implemented. This needs to be in consultation with all applicable stakeholders for maximum effectiveness and value in the profession of prehospital EMC and in healthcare.
- It may be of value to allow for a comparison of clinical scopes between the referenced countries to inform areas of clinical scope that may need to be addressed and/or allow the findings to serve as a benchmark for national developments.
- Consultative processes between applicable stakeholders need to take place to discuss the viability and potential mobilisation of research study findings.
- The ECQF, in consultation with the PBEC, may need to be reviewed above the level of undergraduate education and training to allow for structured clinical career pathing, as well as professional recognition by the statutory body.

3.4 LIMITATIONS

- Due to the COVID-19 global pandemic and the various adjustments that were made in higher education, the research study timelines had to be extended.
- Stakeholders referred to in the target population (see Section 1.9.2.1) will need to be consulted to reach definitive conclusions to this research study. The researcher only pursued ECPs in the semi-structured interview process as beneficiaries of this study.
- Due to the research study being produced for an academic qualification (professional advancement/development), numerous limitations exist with regard to funding, time allocation, and the manner in which the results are presented. The researcher also needed to strictly adhere to the journal's author guidelines.
- Due to the journal limitations (author guidelines), it was not possible for the researcher to provide extensive discussions and elaboration with regard to all research findings. This was also referenced in the article (see Chapter 2).
- Further research is required to reach generalisable conclusions and recommendations. This is due to the adopted design of this research study and the small interviewee sample that was utilised.

3.5 CONCLUDING REMARKS

The research study suggests the need for structured postgraduate study programmes for ECPs in South Africa that will allow for clinical career pathing opportunities and professional recognition. The benefit of this is that it will further assist in alleviating various stressors and burdens on the national healthcare system. The researcher acknowledges that the development of such programmes will need to be informed by epidemiological and healthcare system demands and must adopt the form of an evidence-informed and competency-based curriculum. All stakeholders will need to be involved and a consultative process will need to be adopted should this become a reality.

The researcher suggests that ECPs in an emerging profession (prehospital EMC) are in the ideal position to complement and assist the healthcare system with the adoption of a universal healthcare system via the NHI. The many determinants and influences on healthcare and higher education, as well as concerns relating to professional territorialism, accountability, and quality assurance, should not deter the realisation of development and implementation of such academic programmes.

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APPENDICES

APPENDIX A: COVER LETTER – OVERVIEW OF THE RESEARCH PROJECT

Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care
Department of Health, Free State
Master's Degree in Health Professions Education
stvncraw@gmail.com
+27 72 3566983

To whom it may concern

RE: Research Project Overview for Potential Participation

AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

Firstly, I would like to thank you for the opportunity to present my research project. Since you have received this letter, there is a vital link between you and the research I am pursuing: you have expert knowledge pertaining to the field of study and your assistance in informing and providing insight into the research will be of great value.

I (Steven J. Crawford) am currently employed by the Department of Health, Free State, where I lecture in Emergency Medical Care for the Diploma of Emergency Medical Care programme at the Free State College of Emergency Care. I graduated from the Central University of Technology, Free State, in 2012 with a National Diploma in Emergency Medical Care and Rescue. Since graduation I have predominantly been involved in private emergency medical services in the Free State province. In 2017, I graduated from the Cape Peninsula University of Technology with a Baccalaureus Technology in Emergency Medical Care. My career in education, with emphasis on prehospital emergency medical care, was initiated in early 2018, at my current employer, as indicated above.

The research study that you have been invited to participate in forms part of my master's degree in Health Professions Education, which commenced in January 2019.

This research study is informed by a vast quantity of literature pertaining to the title of the research study. Although the literature on current trends is predominantly in the international realm, there is little literature about the national (South African) setting. Legislation from a South African perspective has been utilised to provide a rationale for pursuing this research project.

For your convenience, I attach a summary of the research proposal. This will provide a thorough overview of the research project. Should you be interested in the entire research proposal, it can be made available upon request.

This research project has been scrutinised by various processes related to obtaining ethical approval, including multiple peer-evaluation sessions and the Health Sciences Research Ethics Committee of the University of the Free State. Below, I provide the study's ethical approval registration number, should you require it.

Ethical Approval Reference Number: **UFS-HSD2020/0009/2403**

My research supervisor's details are recorded below, should you require any additional information.

Research Supervisor:
Dr Dirk Hagemeister
Senior Lecturer: Family Medicine
School of Clinical Medicine
Faculty of Health Sciences
University of the Free State
Email Address: HagemeisterDT@ufs.ac.za
Cell: +27 72 9426218

The research project is informed by a holistic **aim,** which will be achieved by means of numerous **research objectives,** which all support the primary **research question**. Elaboration of this concept is provided below.

The **aim** of the research study is to pursue an investigation into structured postgraduate studies for emergency care practitioners in South Africa. Postgraduate studies that will be researched need to enhance practitioners' clinical knowledge and abilities (this can be viewed as specialising), and allow for professional, academic, and alternate healthcare career tracks to be pursued post qualification.

The **research question** posed is as follows: Is there a need for structured postgraduate study programmes for emergency care practitioners in South Africa?

To achieve the **aim** and address the **research question**, numerous **objectives** will be pursued. This research project will involve two methods of data capture, namely a literature review and semi-structured interviews.

Objectives have been recorded as a main objective and secondary objectives:

Main objective:
To investigate the need for structured postgraduate studies for emergency care practitioners in South Africa. (This will be achieved by means of literature study and semi-structured interviews.)

Secondary objectives:

i. To determine the international trends with reference to and the implementation of postgraduate studies for prehospital EMC professionals. (This will be achieved by means of a literature study.)
ii. To investigate professional positioning and utilisation of emergency care practitioners in the universal health coverage system proposed by via the National Health Insurance in South Africa. (This will be achieved by means of literature study and semi-structured interviews.)
iii. To determine shortfalls in education and training in relation to competency-based clinical practice for emergency care practitioners in South Africa. (This will be achieved by means of literature study and semi-structured interviews.)

Rest assured that the information received during the project will be used for research purposes only and will not be released for any academic and/or employment-related performance evaluation, promotion and/or disciplinary purposes. The findings of this study will be made public to other educationists within Health Professions Education through

paper presentations at conferences and seminars and by publishing articles in applicable journals.

Your willingness to participate in the interview process of this research project is valuable for the future of prehospital emergency care in South Africa. With this research overview, I include a summary of the research proposal. If you are willing to complement this research project with your expert knowledge and experiences, I will be sure to provide you with the applicable consent documentation.

Please do not hesitate to contact me (contact details on the first page) should you require any additional information.

Thank you for the time taken to read this communication; your contribution to this research will be appreciated immensely.

Yours sincerely

Mr Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care; Bloemfontein
Department of Health, Free State

APPENDIX B: SUMMARY OF RESEARCH PROTOCOL – ADAPTED FROM COMPLETE PROTOCOL

Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care
Department of Health, Free State
Master's Degree in Health Professions Education
stvncraw@gmail.com
+27 72 3566983

To whom it may concern

RE: Research Project – Summary of Research Project

AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

The following summary serves to provide you, as a prospective interviewee, with a brief, yet thorough, understanding of the rationale informing the research project. The summary should be read in conjunction with the overview letter (cover letter) that accompanies this summary.

Summary:

Emergency medical services will play a vital, intricate, and dynamic role in the National Health Insurance system being proposed for the Republic of South Africa. The ability to render sufficient and just healthcare in South Africa is currently receiving a great deal of attention, and is articulated in the White Paper on achieving universal health coverage via National Health Insurance. Healthcare and healthcare system reform emphasises Health Professions Education as a means of addressing the numerous burdens and injustices, the misalignment of educational outcomes/competencies of graduates, and inequalities pertaining to the population's healthcare status. The ability to align education models and competencies of graduates, to provide a holistic understanding of healthcare, and to eradicate a silo-based professional approach to healthcare and education, is critical to the future success and sustainability of national healthcare.

Emergency medical services are currently underutilised in the international and national realm of healthcare. There are a variety of reasons for this underutilisation, including a lack of training opportunities, which inversely affects abilities and (clinical) skill of practitioners, a silo approach to rendering healthcare, the hierarchical status quo amongst healthcare professions, and historical burdens and effects of the apartheid era that persist well into the 21st century, thus affecting current education models, which have restricted the professionalisation and progress of healthcare and, more intimately, the emerging profession of prehospital emergency care.

South Africa recently (April 2017) terminated the vocational education approach used for prehospital emergency medical care, and now conforms to various legislative requirements informing higher education within South Africa. According to the accepted Emergency Care Qualifications Framework, the professional registration of emergency care practitioner (four-year-degree graduates) is the highest clinical qualification that can be obtained in the metier of prehospital emergency care – this an undergraduate qualification. The current academic framework allows for further vertical articulation within the metier; however, the currently offered master's and doctorate programmes are solely research based, which limits professional pathways and the clinical abilities of practitioners, and promotes a silo-based healthcare system.

In the presence of an ailing national healthcare system, reform should know no limits; in contrast, the ability to multi-skill healthcare professionals, enhance versatility and roles within the healthcare system, and adopt a proactive/preventative approach to healthcare is critical to future success and sustainability. Emergency care practitioners are in a unique, versatile, and dynamic position to complement the healthcare system. Their potential contribution is articulated in the National Health Insurance White Paper and the National Emergency Care Education and Training Policy, which were published in 2017. The researcher suggests that burdens that inhibit progression in this emerging profession may be due to a silo-based approach to the rendering of healthcare, and the absence of postgraduate programmes that allow for professional and career progression and enhancing clinical skill and abilities, and the inability of emergency care practitioners to migrate within the healthcare system on the basis of professional competencies.

The researcher will pursue an investigation into the potential for structured postgraduate programmes for emergency care practitioners in South Africa.

The predominant research question, objectives, and aim relate to determining the potential need for structured postgraduate programmes that could enhance clinical ability, professional roles, and titles; allow for further career opportunities within the holistic field of healthcare; and equip graduates with the necessary knowledge and skills to complement a system-based, interdisciplinary, and multi-skilled healthcare system and workforce.

Due to a lack of evidence and literature pertaining to this topic in South Africa, the researcher will pursue a qualitative approach, which will allow inductive data gathering, and which will allow findings to emerge by deduction of data as the study progresses. The researcher will, first, employ a literature review according to steps that are stipulated in the protocol, to determine international trends, develop expert knowledge, and provide holistic contextualisation and conceptualisation of the topic. Secondly, the researcher will employ a semi-structured interview process, which will provide context for and insight into the proposed topic of research in South Africa. Analysis and interpretation of the literature review data will be utilised to inform the final interview guide; a draft interview guide was provided as an appendix for the process of ethical approval.

The researcher provides an in-depth section pertaining to research methodology and methods that will guide him throughout the duration of the study. The protocol has been subjected to multiple peer evaluations and scrutinised by the researcher's supervisor throughout the synthesis, which directly enhanced the credibility and trustworthiness of the proposed research. Quality indicators are alluded to and elaborated upon in the protocol.

The researcher hopes to provide an immense contribution to the body of knowledge, and leave a legacy relating to prehospital emergency care in South Africa. The research will provide clarity about structured postgraduate programmes for emergency care practitioners and, potentially, allow for professional progression pathways, obtaining clinical skills and knowledge, and complementing the national healthcare system. Providing further education and training pathways for emergency care practitioners will complement a proposed 21st-century healthcare system that advocates a multi-professional and multi-skilled workforce, informed (epidemiological) curriculum, and educational approaches and competencies of graduates.

Rest assured that the information received during the project will be used for research purposes only, and will not be released for any academic and/or employment-related performance evaluation, promotion, and/or disciplinary purposes. The findings of this study

will be made public to other educationists within Health Professions Education through paper presentations at conferences and seminars and by publishing articles in applicable journals.

Your willingness to participate in the interview process of this research project will be of much value to the future of prehospital emergency care in South Africa. With this research summary, I have included the study cover letter.

Please do not hesitate to contact me (contact details on the first page) should you require any additional information.

Thank you for the time you have taken to read through this communication; your contribution to this research will be appreciated immensely.

Yours sincerely

Mr Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care; Bloemfontein
Department of Health, Free State

APPENDIX C: PERMISSION FORM – SEMI-STRUCTURED INTERVIEW – INSTITUTION

Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care
Department of Health, Free State
Master's Degree in Health Professions Education
stvncraw@gmail.com
+27 72 3566983

To whom it may concern

RE: Institutional Permission Form for Participation in the Research Project – Semi-Structured Interview

Title of Research Project:

AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

Since you have received this form, there is a vital link between you and the research I am pursuing; you have expert knowledge pertaining to the field of study and your assistance in informing and providing insight with reference to the research will be of great value. Institutional/organisational support in allowing for an interview will be much appreciated.

At this point in the research process, I believe that you would have consulted the overview and summary of the research project that preceded this document. This form is targeted at the institutional/organisational level; should you only require individual consent, please ignore this document and complete only the individual consent form.

Due to the sampling strategy implemented in this research project, I will consider various criteria, which will be recognised as "rich data". I will appreciate it if I may make reference to the institution/organisation when analysing and interpreting data; if this is not an option, please complete the consent form accordingly and I will ensure that the institute and individual(s) remain anonymous. With many stakeholders involved in this study, having institutional permission and individual consent for analysing and reporting these data may

be deemed invaluable to the credibility and trustworthiness of this research project. Below I provide the ethical approval number for reference.

Ethical Approval Reference Number: **UFS-HSD2020/0009/2403**

Should the institution/organisation be willing to participate in the research project, please advise by means of completing this document with whom I should liaise to arrange the interview. All questions that will guide the interview process are posed in a constructive manner and the chance for negative reflection on the specific institution/organisation is minimal.

I am available to assist in clarifying any misunderstandings or shortfalls in information that may exist at this point. Please do not hesitate to contact me on the contact details provided above.

Just a few additional points pertaining to institutional/organisational permission:

- Participation in this project is voluntary. The institution has the right to decline to participate in the study or to withdraw from the study at any stage. Should the institution/organisation be willing to participate in the research study, it is requested to complete the permission form and return it to the researcher.
- Participation will involve no costs; neither is financial gain involved for participants in the research phase of this study.
- If the institution is willing to be involved in the research project, a time will be scheduled for an interview with the applicable individual/representative.
- The interview process with the individual will be audio recorded, and will be transcribed for review purposes.
- The results of this research project will be published via article(s) in applicable journals and/or platforms.
- Kindly note that the information received during the project will be used for research purposes only and will not be released for any academic and/or employment-related performance evaluation, promotion, and/or disciplinary purposes.
- Should the institution/organisation be willing to participate in the research project, the body will not be held responsible for any decisions or conclusions transpiring from the study.

Yours sincerely

Mr Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care; Bloemfontein
Department of Health, Free State

***Please complete the last page and return to the researcher as permission to participate**

Hereby I, the undersigned, provide permission for the institution/organisation to allow for individual(s) to participate in the semi-structured interview process of the abovementioned research project.

.....

Full Names and Surname

.....

Institute/Organisation Represented

.....

Position Held at Institute/Organisation

.....

Signature and Date

May the position of employment of the interviewee and institute/organisation be made known when compiling research results? Please make a "X" over the applicable option. Failing to provide permission to be made known in the interpretation phase will not exclude the institution from participating in the research project.

Yes	No

Allowing institutional/organisational access in pursuing this research project is vitally important. Thank you for your cooperation in allowing access and providing consent to pursue this research project.

APPENDIX D: CONSENT FORM – SEMI-STRUCTURED INTERVIEW – INDIVIDUAL

Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care
Department of Health, Free State
Master's Degree in Health Professions Education
stvncraw@gmail.com
+27 72 3566983

To whom it may concern

RE: Individual Consent Form for Participation in the Research Project – Semi-Structured Interview

Title of Research Project:

AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

Since you have received this consent form, there is a vital link between you and the research I am pursuing; you have expert knowledge pertaining to the field of study and your assistance in informing and providing insight with reference to the research will be of great value. Providing individual consent to an interview will be much appreciated.

At this point in the research process, I believe that you would have consulted the overview and summary of the research project which preceded this document. This consent form is targeted at you as an individual. Please complete and return it to the researcher via the above provided contact details.

Due to the sampling strategy implemented in this research project, there are various criteria I am taking into account that will be recognised as "rich data"; it will be much appreciated if I may make links to your professional position and experience(s) when analysing and interpreting data; if this is not an option, please complete the consent form accordingly and I will ensure that you remain anonymous as far as academically possible. With many stakeholders involved in this study, having your consent with regard to analysing and

reporting of data may be deemed invaluable to the credibility and trustworthiness of this research project.

Below I have provided the ethical approval number for reference.

Ethical Approval Reference Number: **UFS-HSD2020/0009/2403**

Should you be willing to participate in the research process, please advise by means of completing this document. All questions which are to guide the interview process are posed in a constructive manner and the chance for negative reflection on yourself or institution of employment is minimal.

I am available to assist in clarifying any potential misunderstandings or shortfalls in information that may exist up until this point; please do not hesitate to contact me via the contact details provided above.

Just a few additional points pertaining to individual consent:

- Participation in this project is voluntary. You have the right to decline to participate in the study or to withdraw from the study at any stage. Should you be willing to participate in the research study, it is requested that the consent form be completed accordingly and returned to the researcher.
- Participation will involve no costs; there is no financial gain to be made during the research phase of this study.
- If you are willing to be involved in the research project, a time will be scheduled for the interview.
- The interview process will be audio recorded for transcribing and review purposes only.
- The results of this research project will be published by means of an article(s) in applicable journals and/or platforms; consent to making institutional and/or professional position known in the interpretation phase will be of much value.
- Kindly note that the information received during the project will only be used for research purposes and will not be released for any academic and/or employment-related performance evaluation, promotion, and/or disciplinary purposes.
- Should you be willing to participate in the research project, you will not be held responsible for any decisions or conclusions transpiring from the study.

Yours sincerely

Mr Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care; Bloemfontein
Department of Health, Free State

***Please complete applicable areas on the last page and return to the researcher should consent be provided for participation. Areas marked with an asterisk (*) are compulsory.**

Hereby I, the undersigned, consent to my participation in the semi-structured interview phase of the research process with reference to the abovementioned research project.

.....

***Full Names and Surname**

.....

Institute/Organisation Represented

.....

Position Held at Institute/Organisation

.....

***Signature and Date**

May employment position and professional experience of the interviewee be made known when compiling research results? Please make a "X" over the applicable option. Not providing consent to this specific section will not exclude you from participating in the research project.

*

Yes	No

Your assistance in allowing for your position and/or experience to be made known will be of much value to this study and your consent will be much appreciated.

Thank you for your cooperation in allowing access and providing consent to pursue this research project.

APPENDIX E: SEMI-STRUCTURED INTERVIEW GUIDE

Steven J. Crawford
Lecturer: Emergency Medical Care
Free State College of Emergency Care
Department of Health, Free State
Master's Degree in Health Professions Education
stvncraw@gmail.com
+27 72 3566983

Research Topic Title:

AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA

Ethical Approval Reference Number: **UFS-HSD2020/0009/2403**

The following questions have been compiled as a guide to aid in the semi-structured interview process. The questions have been formulated in conjunction with the literature review process and intend to address specific research objectives, which have been articulated in Chapter 1. The questions have been recorded in no specific order.

Research questions have been structured in such a manner as to inform specific research objectives. The researcher is adopting a semi-structured research method for data collection; the interview guide is not intended to serve as a rigid document with no room for deviation. Depending on the "tone" of the interview, this will guide the specific approach adopted by the researcher.

The semi-structured interview process will be recorded via audio only, for transcribing and analysis purposes. Chapter 1 elaborates on this research method in depth.

Semi-Structured Interview Questions:

- In your opinion, where do you see ECPs and the emerging profession of prehospital emergency care in the future of national healthcare (South Africa)?
- Have you ever required or experienced the need for additional clinical knowledge and

skills while practising as an ECP? Please elaborate in this regard.

- Have you pursued any postgraduate qualifications? What informed your choice of postgraduate studies?
- What is your opinion with regard to the idea of structured postgraduate studies for ECPs?
- Has the unavailability in postgraduate studies and professional career progression had an influence on your current career and/or academic choices? How and why?
- What is your opinion or standpoint about ECPs with additional studies/qualifications practising in clinics, hospitals, on-scene discharge and referral, additional clinical skills, professional recognition, etc.? Do you think there is room for these roles in the future of healthcare?
- Do you think there is a need for structured postgraduate studies for ECPs? What would these programmes entail and how do you suggest they be implemented (NQF level, content, structure, duration, etc.)?
- Tell me about your view with regard to ECP specialisation.

APPENDIX F: AUTHOR GUIDELINES – *AUSTRALASIAN JOURNAL OF PARAMEDICINE*

Submissions

Login or Register to make a submission.

Submission Preparation Checklist

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines.

- The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
- The submission file is in Microsoft Word document file format.
- Where available, URLs for the references have been provided.
- The text is double-spaced; uses a 12-point font; employs italics, rather than underlining (except with URL addresses); and all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end.
- The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines, which is found in About the Journal.
- If submitting to a peer-reviewed section of the journal, the instructions in Ensuring a Blind Review have been followed.

- **Conflict of Interest**
    - Each author of the article is requested to complete and return an ICMJE Form for disclosure for potential conflicts of interest. Available at: http://www.icmje.org/downloads/coi_disclosure.pdf
    - This form will need to be completed by all authors prior to the article being published.

- **Patient Data**
    - You will need to download and complete the Patient Consent Form if you are using patient information or images.
    - See the Editorial Policies – *Consent for Publication of Individual Patient Data* for further information.

Author Guidelines

Author Guidelines

Criteria

Contributors are encouraged to follow the recommendations of the International Committee of Medical Journal Editors (ICMJE) Uniform Requirements for Manuscripts Submitted to Biomedical Journals http://www.icmje.org. The document provides useful

information for authors, reviewers, editors and general readers, in many aspects of ethical, technical and formatting principles which should be applied to manuscripts prior to submission and publication in any medical related journal.

Manuscript types outlined above will be considered for publication if they meet the requirements of the journal, editorial review and review process.

Submission Process

The manuscript should be submitted by the corresponding author who will be the author the journal will send all correspondence to.

To ensure rapid processing all manuscripts should be submitted electronically by going to http://ajp.paramedics.org/index.php/ajp/author/submit. You will need to be a registered author to submit a manuscript.

The journal will accept the following manuscript file formats: doc, docx and rtf.

The submission process requires a cover letter outlining briefly why the manuscript should be published by the journal, declare any author conflicts of interest, declare any funding for the research. The cover letter should be copied into the "Comments for the Editor" box under Step 1 of the submission process.

The manuscript file is uploaded in Step 2 of the submission process..

Manuscript Layout

The manuscript should contain the following components:

- Abstract: with Manuscript Title, Abstract & Keywords
- Introduction
- Methods
- Results
- Discussion
- Conclusion
- Acknowledgements
- Competing Interests
- References

Abstract

The abstract page should have the manuscript title at the top.

For *quantitative research* the abstract should have the following sub-headings:

- Introduction (the last sentence should be study objective, same as in the main introduction)
- Methods
- Results
- Conclusion

and be a maximum of 250 words, including headings. The abstract should not contain references.

For *qualitative research* the abstract should be a summary and cover the purpose and setting of the research, the processes involved in the study, the principal findings and major conclusions and be a maximum of 250 words. The abstract should not contain references.

After the Abstract should be the Keywords. There should be no more than six keywords, using MeSH headings where possible. These should be in lower case separated by a semi-colon (;).

Introduction

- An overview of the current literature which demonstrates a gap and how this leads to the current study.
- Provides an overview of the problem being studied and the reasons for the study.
- Background information may be presented => historical developments leading to the study.
- The study objective, most important part => the last sentence in the last paragraph.

Methods

- Should describe exactly how the study was conducted.
- Designed to answer the research question
- The most important section of the article, it must be described with sufficient detail and clarity so that another researcher could replicate the study using a different group of participants.
- Used to assess the validity and reliability of the study.

Study Design

- State the study design, eg. a retrospective cohort study.

Setting

- The department/university/ambulance service – number of staff/state and population, reference state population.
- Delete if not applicable.

Participants/Population

- Describe who participated in the study.
- Should include the calculation or method for determining the sample size (if required).
- Inclusion criteria.
- Exclusion criteria.
- Delete if not applicable.

Instrumentation

- Used when using measurement scales, eg. pre-existing surveys.
- Psychometric information is required, e.g. external/internal consistency, dimensionality, construct validity, plus a reference to an articles reporting this information.
- Delete if not applicable.

Procedures

- Exactly how the study was conducted, eg. the processes used to administer a survey.
- Treatment allocation process (if used):
- Sample types => paired samples, eg. use of matching (case-control study), independent sample, eg. no matching.
- Randomisation => the process of how the participants are randomised to their respective groups should be described.
- Control groups => should describe what type, eg. historical, concurrent, or placebo.
- Blinding => should state who is blinded to the intervention in the study, eg. patient, statistician, investigator, etc.

Outcome Measures

- Should include the outcomes that will be measured during the study, eg. death, length of hospital stay.
- Delete if not applicable.

Data Analysis

- Describe what data will be analysed using which stats, tests and statistical program.
- Delete if not applicable.

Ethics

- List all ethics committees that approved the study.
- Delete if not applicable.

Results

- Demographic results first.
- A description of the study groups and how similar they are or are not.
- For a literature review, include all articles located, then number that met the inclusion criteria.
- The magnitude of the analysis and statistical significance of the results should be reported => point estimate, confidence interval, and p values should be reported.
- Potential or actual confounder(s) should be reported.
- Missing participants should be accounted for and a statement about how these were handled.
- The outcomes stated in the methods section should be reported.
- All the numbers need to add up.
- Is variability in the results reported?
- Graphical summaries must be accurately presented.
- Adverse effects reported.

Discussion

- Approximately eight to ten paragraphs.
- First paragraph should be an overarching statement about the study.
- The results may be interpreted.
- Each paragraph consists of approximately four to six sentences, the first highlighting a point of interest from the study. The remaining sentences support

the first sentence or a comparison of results from similar studies, highlighting similarities or differences.
- The second last paragraph can be one that recommends further research, or changes to current practice.
- The last paragraph should be the study limitations.

Conclusion

- Should summarise the study, no additional information should be added.
- Two to three sentences is normally sufficient to summarise the study.
- The conclusion should not contain references.

Acknowledgements

- Participants who participated in the study, eg. staff who completed a survey.
- Delete if not applicable.

Conflict of Interest

- Each author of the article is requested to complete and return an ICMJE Form for disclosure for potential conflicts of interest. Available at: http://www.icmje.org/downloads/coi_disclosure.pdf
- This form will need to be completed by all authors prior to the article being published.

References

- Use the Vancouver style with in text parenthesis "()" and numbering in the reference list.
- Authors are responsible for the accuracy of all references and in text citations.

Figures

- These should be inserted into the text, either high quality jpeg or preferably tiff, and of 300dpi minimum quality.
- Figures must be labelled sequentially and made reference to in the text.
- Delete if not applicable.

Tables

- Can be used to provide a large amount of information instead of writing it in the results section.
- Tables should be created within the word processor and not inserted from another program.
- Tables should be inserted into the text.
- Tables must be labelled sequentially and made reference to in the text.
- Delete if not applicable.

Manuscript Style and Language

- Manuscripts must be submitted in English, using the Macquarie dictionary as a spelling reference and/or the Australian English language setting in word processing programs.
- Standard international (SI) units should be used throughout the manuscript.
- Font selection should be sized at 12 point in Times New Roman or Arial and line spacing should be double and left justified.

- Pages should be numbered consecutively on the bottom centre commencing with the title page to include all references, tables, acknowledgements and legends.
- In the title capitals should be used for the first word and proper nouns
- Footnotes and endnotes created by word processors are not allowed.
- *All manuscripts should be submitted in document (doc, docx) or rich text format (.rtf) and should be submitted electronically online.*

Manuscript Handling

Initial evaluation of all manuscripts will be undertaken by one of the assistant editors to determine suitability for publication in the AJP. A process of peer review by appropriately qualified researchers will follow to determine quality and changes required of submitted articles, prior to publication.

Acceptance of a manuscript for publication is possible only after completion of the editing process. Every author whose name appears on the manuscript is responsible for all content published in the article, including any changes made in the editing process. As the AJP is an open access journal each author will be able to download a copy of the article after it is published.

Article Types

Each issue will contain the following component, depending on accepted material:

- Editorial
  - By the editor
  - Invited by the editor
- Original research
  - Any study type
  - No limit of size, references, tables, or figures
  - Figures may be in colour or black and white
- Reviews
  - Systematic review +/- meta-analysis
  - Narrative literature reviews
  - Scoping reviews
- Case study
  - About an interesting patient presentation/management issue
  - You will need to download and complete the Patient Consent Form if you are using patient information or images.
  - See the Editorial Policies – *Consent for Publication of Individual Patient Data* for further information
- Management/Policy/Education
-
  - Articles covering policy/management issues
  - Current
  - Technical aspects
  - Articles covering various aspects of education, in line with the journal aims.
- Commentary
  - Invited to comment on a submitted manuscript
  - Submitted, covering a current important prehospital issue
- Clinician's Corner
  - Cover up-to-date information on conditions/management/etc
- Letter to the editor
  - Will also permit a reply by the authors to whom the letter pertains

- Special topics
  - An article on points of interest, eg. how to interpret a forest plot
- Other components
  - Conference reports
  - Book reviews
  - Media reviews
  - Website reviews

The following word limit is given as a guide and is not absolute:

- Editorials – 600 to 800 words
- Original research – 2,500 – 3,000 words excluding tables and references
- Systematic Literature reviews +/- meta-analysis – 3,500 – 5,000 words excluding tables and references
- Narrative literature reviews – 2,500 – 3,000 words excluding tables and references
- Scoping reviews – 2,500 – 3,000 words excluding tables and references
- Management/Policy/Education – 2,000 words excluding tables and references
- Commentary – 600 to 800 words
- Case Study - 1,000 words
- Clinician's Corner – 1,200 to 1,500 words
- Letter to the Editor – up to 500 words
- Special Topics – 1,500 words
- Other components – up to 800 words

Supplementary/Special Issues

These will contain specific content that cannot wait until the normal publication time or it contains articles of a similar type, for example, a compilation of student articles. Supplementary/special issues may also contain conference abstracts due to the various times conferences are held and the time to obtain and format the abstracts.

Manuscript Resubmission

Following review of the manuscript changes recommended by the reviewers should be undertaken in the following way.

- In a fresh version of the submitted manuscript, changes made should be done using track changes so the reviewer and/or editorial team can see what changes have been made to the manuscript.
- A document with each point raised by the reviewer and the author's response to the comment.

Both these documents should then be uploaded for re-review.

Privacy Statement

The names and email addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party.

APPENDIX G: EXAMPLE OF INTERVIEW TRANSCRIPT

8 - 7 Oct 2020

SUMMARY KEYWORDS

ecp, qualification, programme, clinical, profession, scope, primary healthcare, primary health care, training, ems, operational, big, practitioners, emergency medicine, western cape, care, undergrad, practising, masters, input

SPEAKERS

Interviewee, Steven Crawford

Steven Crawford 00:08
Firstly, I'd like to, from a research side, thank you for the opportunity to interview yourself. And just for transcription purposes, I just want to also highlight that I have received your consent form. So I just like to thank you for that. I just want to confirm, you did receive the communication with reference to my research, consisting of I think it was a cover letter, the summary and obviously the consent form, which I have received?

Interviewee 00:37
Yes, that's correct.

Steven Crawford 00:39
And you have read through and orientate yourself?

Interviewee 00:42
Yes, that is correct.

Steven Crawford 00:47
Further than that, I'm just going to engage in a general type discussion, from a research side of things I do I have specific outcomes which I need to achieve in this interview, but from your side, I would like you to just engage in a natural manner. And we'll take it from there.

Interviewee 01:04
Awesome, no worries.

Steven Crawford 01:06
I understand you are ECP by profession and registered with HPCSA?

Interviewee 01:14
Yes, you are correct in saying that.

Steven Crawford 01:17
I would appreciate if you provide me a bit of background with regards to your professional career development up into the point where you are now. When I say background, you can touch on your operational experiences, but I'm more interested in qualifications and then probably a bit of reason why that qualification?

Interviewee 01:40
So, yeah, I think back when we met was in Bloemfontein, and that's when I obtained my National Diploma qualification in 2013, thereafter I got employed by the Western Cape government as an operational ALS Paramedic in Mosselbay. During operations on that side, I've been mostly based on a response vehicle, so it wasn't so much an ambulance based operation thing. Then during 2015 I completed a training and development short course through UCT as well as a higher certificate in health care service management. And during 2015 to 2016 I completed my bachelor's in Emergency Medical Care at CPUT. From there on from the end of basically from Jan 2017, I got upgraded to Emergency Care Practitioner level within the profession, and specifically in Mosselbay. And then operational experience on that side was much more critical care transfer orientated. So I did a lot of long distance transfers in and out of Eden and within the region of Eden itself. And since the end of 2015, while being in the Eden district itself, I have been involved with continuous professional development of our staff, while helping out giving CPDs. I got involved with the Human Resource Development Department, which is an extension of the College of Emergency Care where I'm employed today. And with that, we did monthly CME updates. And then since 2016 up until the time that we came to Cape Town, I actually conducted those sessions in Mosselbay and some of the towns on that side by my own, where we involve private emergency medical services and the fire department greatly as well. Whilst being in the district I also served on the hospital's resus council, which was basically a forum where we did discussing M&M kind of things, so kind of mortality and morbidity discussions of difficult cases. And it basically comprised of myself as an operational paramedic, and a couple of emergency care doctors that was working in that unit. I then started with

my Master's in emergency medicine, more specifically clinical emergency medicine. The beginning of 2018, when I moved to the college, where I'm currently employed as a lecturer on a Diploma programme and for the first two years, so that would be 2018 and 2019 I've been serving the subject of critical care. And then during this year (2020), which has mostly been disrupted by COVID, I've been doing the medical one or Emergency Medical Care subject for the first years. So why the qualification specifically?

Steven Crawford 05:26
Do you mind if I pause you there quickly just to break it up and help with the flow of the interview. So it is obvious that you have an extensive experience in the operational setting and if I may just generalise and use a word, probably more academic type setting...

Interviewee 05:44
Yes I do...

Steven Crawford 05:48
I understand your shift from national diploma to the BTech or ECP level of qualification. I mean, that's probably part of your medical career track development as a prehospital practitioner. But I'd like to jump... When it came up, you said you pursued your masters in what did you say Emergency Medical Care?

Interviewee 06:17
Clinical Emergency Medicine...

Steven Crawford 06:19
I'm interested in that shift, what informed that shift from your ECP or bachelor's qualification to the Masters in clinical medicine?

Interviewee 06:31
The short answer of that is that I was basically aiming to do something in the manner that I could actually gain something from the qualification. So I'm just going to use a broad explanation, if I did a normal MSC, or MTech, or MEMC, it would have been basically a thesis and I would have ended up, being not exactly the same practitioner, but I would have had a better understanding of, I'm just going to use a

simple explanation, why we have Chevron tape (reflective tape) on the back of a response vehicle? If that was my study, for example, I'm just using a stupid explanation. Then when I met someone during 2017, that is employed by the service, and she informed me about the MPhil programme specifically. And the programme at UCT has got a couple of streams, where one of them is disaster medicine. The other one is the clinical emergency medicine, there is a stream of patient safety and then there is a stream of African healthcare or something like that. So particularly why I chose the clinical emergency medicine stream was mainly because of the the extension of medical knowledge. So we go a bit deeper into the... It doesn't change your scope of practice, but we do actually delve a bit deeper into the field of emergency medicine, particularly to the level that they will manage someone within a level one trauma facility in hospital. So we explore a but more drugs, we explore but more of management practices when it comes to patient specifically. And then more so they had one subject, specifically in the second year, which I mentioned earlier on, which is the resus and critical care component which I've always been fond of in EMS. So I enjoyed the fact that I could actually do this Master's, yes, still get exposed to research, still do a study that is really relevant to the profession, but in a more clinical matter. I think that's basically why I chose the clinical emergency medicine stream. And then part of it, I felt that seeing that I'm still very much involved in clinical operations that would benefit me in improving, being a better practitioner. I also had the opportunity of choosing elective subjects, such as one of them that I chose is education, because I'm in the field of education currently and then the other option that I chose is management within the healthcare sector as well. So that's basically why I chose the clinical emergency medicine stream.

Steven Crawford 09:21
Thank you very much for that explanation. You mentioned in that discussion that yes, you've pursued your Masters of clinical emergency medicine and you briefly touched on it that it does not change your scope.

Interviewee 09:39
Yes.

Steven Crawford 09:41
I just want to hear from a professional side. Is there any professional recognition granted to you as a healthcare professional based on your Masters qualification?

Interviewee 09:53
Are you talking about in service based?

Steven Crawford 09:55
Well with the professional Board of Emergency Medical Care. So has it changed your title of ECP? Or given you any more intervention or enhanced scope? Obviously, there's been a massive increase in knowledge, but when it comes to practice?

Interviewee 10:21
To answer you on that one, it does not affect my scope of practice with the HPCSA and it also does not change my title or my status that I hold with the HPCSA. So I'm still just a normal Emergency Care Practitioner. However, I'm able to register the qualification as a sub qualification, but it does not change anything to my status on role.

Steven Crawford 10:44
What is your opinion with regards to this? Is it a potential...? Let me give you a bit of background, as far as I'm aware, ECP is pretty much the clinical ceiling with regards to the PBEC. It doesn't matter what we study from there, your scope and professional title remains that of ECP. Is this a shortfall within our vertical hierarchy of clinical practice?

Interviewee 11:15
Yes, I'm gonna use a bit of my own experience with other practitioners outside of South Africa and then why I say that. I think it is a relevant concern, in my opinion. So if you look at something like the the UK system, for example, where you do a four year degree, whether it's a bachelor's, or whether you do, they have something similar to a National Diploma or the current Diploma and then onto a bachelor's, and then thereafter you can actually go and do a Master's, and you can specialise in advanced care or urgent care, and they've got a couple of, critical care is one of the things, but it does actually change your scope of practice, and then recognition with the applicable board changes. So you wouldn't just carry the title of ECP... So I would say that the board in our instance, will at some point need to start looking at that... I'm not generally vouching for a change of scope of practice. Particularly if I'm looking at the, and this is probably speaking out of a point of a bit of privilege. But if I'm looking at the scope of practice that an ECP currently has, and even with the new CPGs sort of implemented, I don't know what

more we want to ask for if we get to that Master's level. So that might be some simple things like maybe, I don't want to speak too much about clinical things, but chest drains or X, Y and Z. The reason I'm saying this is, out of the opinion of the two guys that we had working with us that's from the UK... Is and which is pretty much a first world ambulance service and they were both on the Masters level, so they both had a extended scope within their country and things, but for them being here they were more or less equivalent to ourselves on ECP level and then second to that they kind of said that our scenes within Cape Town were flooded with the skill. I'm saying that because it's quite common here to end up with with five ECPs on scene, which is not that common in your area for example. But I think we need to kind of specialise or not specialise, we kind of need to say, what do we want from that kind of specialisation? But that is definitely needed. I think there needs to be some sort of recognition at the end of the day. I just don't know what we're going to do, because it's not like we adding RSI or we add thrombolysis to someone's scope, it's already in our standard scope. So what are we going look at going forward?

Steven Crawford 14:13
I completely hear what you are saying. What I pick up in your rationale there is that you're basing advancement or if I may use the word specialisation, based on skill and intervention. So I just want to, let's chat a bit about education and training within Emergency Medical Care going up towards ECP, for example, how much time in your development was spent on let's say, neonatal and paediatric emergencies?

Interviewee 15:01
In my personal training that was definitely lacking in a lot of instances, but I think we then need to get to programmes and I think that's where we're ultimately aiming, is specific specialisation within the profession. And saying that, even on an undergrad level, I'm just going to use a blanket statement now, but let's say you're sitting on a BEMC programme and I know that something that's been talked about for years, but it's never actually changed, but lets say I'm really not interested in rescue or up to this, then I could choose a stream where I would actually be specialised in neonatal care, with maybe just the introduction to resuce or something along that line... I think that change then needs to take place from an undergrad level and then postgrad to actually push us into certain directions. And not just have this generic blanket approach. Even now with me, sitting with the the Masters in clinical emergency

medicine. Yes, I had one or two subjects of specialisation, but it still doesn't make me a specialist according to the board or the profession for that matter.

Steven Crawford 16:16
So you somewhat suggesting there that from an undergraduate level, you already start branching into a direction?

Interviewee 16:23
Yes, that's kind of what I'm suggesting. But also, if you look at, and that's the other thing of being, and again, just to add on the Masters that I was doing ,was very much focused on a low resource setting, so low to middle income countries, such as South Africa and the majority of Africa and some other countries. With saying that is then we actually need to go and have a look at what is the country's needs and a lot of these things, if you then start investigating it, you might actually find that, I'm not saying where we sitting now, but if we take it back to a couple of years where there was vast amounts of communicable diseases and noncommunicable. The disease burden was so great that it was actually, it's difficult to say where to push it in an undergrad level, if you if you get what I'm saying. So you cannot really say let's specialise a couple of, let's say we offer BEMC programme and we give them this, this pushing them into a direction, but everybody for the sake chooses critical care. But at the end, when you qualify, your scope of practice is so much aligned to critical care that you can't actually fit into a normal functioning ambulance service. And I think that's where we are limited as a country. If we look at disease burden, and the healthcare system needs, I don't know if specialisation on an undergrad level is really going to help, because we might end up with a pool of practitioners, that's not fitting our current needs...

Steven Crawford 18:14
You need almost that general type practitioner...

Interviewee 18:14
Yes... You need you need that general type and currently I feel that, and this is in my personal opinion, that the current Diploma programme that is running, is great for that. I feel that those paramedics should technically be able to, to cover the bulk of the ambulance calls, if I can call it that. And then thereafter we can actually start specialising. And especially, on an ECP level, if you look at the bachelor's programme, start looking at getting those guys going into some sort of a direction even from an

undergrad level. You're always going to have diplomas to a certain extent, that is if they decide what they want to do? I know they want to change it back to three years again, but I mean, you're always going to have that level of care which I think is sufficient for the general population and service delivery needs and the bigger healthcare system that need to meet the 2030 NDP. Like you said you need that generic one, but I think there's definitely also place for specialisation and if not spatialization at least scope adjustment depending on where you're practising within the country, but that's another discussion....

Steven Crawford 19:37
I hear what you are saying and that is definitely in line with 21st century concepts, as they are speaking a lot about evidence informed curriculums and scope based on epidemiological studies. We need to definitely, as a emerging profession, start looking at this stuff probably more reason behind our decisions. Thank you so much for that input. Just briefly, you said you are still very much operational in the clinical environment and whatnot. Over the many years you've been practising, have you ever experienced or potentially wanted the need for more knowledge, for more skill? Have you ever had that need? I heard you mentioned, you have quite a bit of experience in critical care transfers in the Eden district? Were you adequately trained for this or was it a lot of in service experience that led to you probably mastering that area? What's your feel with regards to operations...?

Interviewee 20:50
I would definitely say that there is a need for better training, or better preparation. especially with the specific field of critical care transfers. I mean, if I recall, my undergrad training in Bloemfontein, we didn't have much focus on the ICU side of things, I don't even think we had a subject focusing on that specifically. So yes, and the second thing that I think just to add on there, but we cannot really train someone for the geographical area that they are going to work in... But I'm going to use an example for us in Cape Town, it's not that I struggle to train these guys, but I mean they have got a 5 minute transfer or a 10 minute transfer to hospital wherever they from for argument's sake, that's completely different for someone going to work in Beaufortwest or Prince Albert or whatever rural area. So I think with that regard, in my undergrad training, we weren't sensitise enough to what, what happens if you're on a call and you an hour out and you're sitting with a patient for 40 to 45 minutes? And yes, we were taught the normal emergency care stuff that we needed to know. In my personal opinion, I don't think Bloemfontein did a bad job in that. There was a lot of things that lacked that could have been better in training. I

think, if I take from talking to other practitioners not specifically trained in Bloemfontein, not to mention a university, but one of the newer ones that started with BEMC, where the practitioners actually qualified, and they said, but they did not get it all for theses critical kind of things that they're doing... They are currently working in our Western Cape flight environment. So they were literally saying, we completely out of our depth with the cases that we see. And that's with a new generation and BEMC qualification...

Steven Crawford 21:04
I'm picking up, it's almost like a disconnect between education and operational requirements which you are highlighting here...

Interviewee 23:19
Yes, it is. I don't know if this is a completely to do with that. I know there's a disconnect in our training, and there is a disconnect in medicine for the bigger fraternity of healthcare practitioners. But I think, and this is my personal opinion, it is because there's a lack of operational involvement of the clinical educators, in the bigger picture. I'm going to take an example, if I take CPUT now in Cape Town, none of their lecturers are working on the road, but you want to be teaching your students how to do the work, but you've been on the road 10/15 years ago. So that's one of the things I think has got a big influence, because they don't actually know what the current need is or what the current situation, operational situation is. And then second to that something else that I wanted to mention to you, but I forgot now is... I completely forgot. I'll think and if I remember, I'll tell you...

Steven Crawford 24:32
Hundred percent, we can come back to that. Thanks for that very valuable input. You mentioned earlier, I'm not sure how acquainted you are with the various policies but the National Development Plan 2030, which further informs a white paper of 2017 and the one big point in the white paper i that it is advocating for universal health coverage via national health insurance. This is very much in line with, which you have mentioned, the UK health system, the NHS. I just want to branch into that a bit, so one of the big points which they stipulate is for development of EMS. That's why we seeing the three tiered ECQF been developed, the formalisation of training... I'm sure you're acquainted with all of these policies?

Interviewee 25:24
Yes, to a certain extent.

Steven Crawford 25:24

That's fine, as long as you got that in place. So one of the big pushes, nationally speaking, is primary health care which is receiving much attention on a global scale, moving more towards a preventative or prophylactic healthcare system. So one of the big things they are mentioning there is that EMS and primary health care are potentially to merge for the greater good of the country, if I can put it like that...? Tell me... So now I've painted that background, then there's a push towards interprofessional teams in achieving health care. What is your opinion with regards to this? Are we equipped to all of a sudden complement the primary health care system? I'm speaking ECP specifically now... Are we equipped to complement primary health care systems, be this knowledge or skill?

Interviewee 26:31

Firstly, I don't think we adequately equipped skills wise, our skill set is very focused to emergency management of things. And secondly, knowledge wise, in my personal opinion, what I've done through training and from just engaging with people working in the primary healthcare setting, whether it be nurses, or whether it be a general doctor, or general medical practitioner, I don't think our knowledge is up to the level that it needs to be. However, for the concept, I'm not completely against the concept. And again, this is also something that that's quite prevalent in first world countries, where, yes, and primary healthcare is important, but the reason why I mentioned earlier is that it comes as a bit of a frustration out of a medical, out of my personal practising is, currently our profession or EMS, isn't even able to serve the true emergencies to the level that it should be. And if I'm saying real emergencies, I'm cutting out the the bulk of our calls that is actually primary healthcare. So yes, I think there is a need for this platform to take place or we can have a big role in that, but with that then would ultimately need to either come some sort of a specialisation again. So I'm a ECP and I am going to use an example, I'm tired of running primaries, I'm tired of the emergency calls, I do some specialisation into primary health care and that would be my goal then, and I would ultimately be able to go out to someone's house, do an assessment, prescribe them some medication and like something similar to what they have in the UK where it is actually a paramedic practitioner, or whatever they call them there. But you can prescribe...

Steven Crawford 28:48

A community based practitioner...

Interviewee 28:50

Yeah, community based practitioner type of thing. But yes, that needs the relevant specialisation, I don't think our current skill set will allow for that. I don't think we've got enough knowledge to deal with those more kind of chronic, preventative things. Yeah, you might have an infection in two days so I think let's give you these antibiotics, those kind of things. To a certain extent, we might get some practitioners who's well versed and well experienced, but I would not say it's by standard curriculum training. And then the other thing that you mentioned is this interdisciplinary service delivery thing, which yes, I feel that that could also work and perhaps we don't actually need them to go to the full spectrum of changing training and those kinds of things too much or too drastically. But if we can get some of those primary healthcare nurses to get on board with our system, and you have kind of a dual response community paramedic based thing, that's potentially something that can work, but if I have to look at, and this is not having any stats in front of me, but if I have to look at the current healthcare burden on primary healthcare itself, if you walk into any clinic, day or night, if it's a 24 hour clinic, there's always people waiting, there are always staff, there's never a quiet moment. And similar on EMS side, whether it is true emergency or whether it is, and more than 60% of the times, it's probably not a true emergency call, it's more Primary Health Care related or they need access to primary health care, both sides of the spectrums currently is too overwhelmed and overburdened to actually allow for this kind of a change to happen. That's my personal opinion... And at the end of the day, what's going to happen, you're going to now have a bigger focus on primary health care within EMS, but that guy still doesn't get to the heart attack, but he's now sitting with someone who needs oral rehydration...

Steven Crawford 30:59

I hear what you are saying and thank you very much for that input. As an ECP if you wanted to pursue a professional career track in a clinical side of things, currently, we're very limited with opportunity, I think actually ECP is your clinical ceiling.

Interviewee 31:18

Yes.

Steven Crawford 31:21

As a professional with experience and knowledge, you do have... Will you, if possible, what is your ideal system that you see, for ECPs? In the sense of professional development? What is the system which you dream of?

Interviewee 31:38

So idealy and interestingly enough, it's a conversation that I had with someone not too long ago, is if you, I'm going to use the Western Cape just as a framework to talk from... If you've got a and if you are familiar with the UK system, we are trying to run a very similar kind of a thing here now. But if you've got a system where you have ambulance operations, you've got rescue operations and then you've obviously got your supply chain, Training College and all the other branches on the side of it. But I feel that and it's probably, apology, something that has changed over the years, that initially we had a system were paramedics was run similar to what rescue was done... Running on their own kind of a structure and it kind of made sense opperationally because they actually ended up getting to the cases that they needed to get. But on an ECP level, I think what we're currently sitting with is, is the ECP that gets employed and it's a bum on a seat, not to be disrespectful. But that's currently what happening her by us and we have a lot of practitioners that is wanting to be better, that is wanting to actually study and I don't know if you saw that postgraduate diploma that I shared of UCT, that they actually accepting CCAs and you wouldn't believe the amount of practitioners applying... That they really would like to actually go into some different thing, even though it's not going to change the scope of practice generally, but they have a hunger for some sort of, if I can use the word specialisation or some sort of professional development. But on the ECP level, I think what we need is, is some sort of, within the service, some sort of growth, whether it is organisational growth, whether it is academic growth, and if I'm talking about academic growth, again, is allowing those opportunities to actually for example, I'm doing, let's say, I'm going to use a simple thing and it's probably not even going to be valid as a postgraduate thing, but let's say I'm doing a postgraduate diploma in emergency ultrasound or whatever. And I do a year, and I do the basics of ultrasound, I do the basics of radiography and eventually I'll be able to do work on a unit where we actually carry FAST and I'll be able enough to do ultrasound and those kind of things. So I'm not, that's a simple explanation, but I think we need to get to a point in the professions where we have individuals who specifically train toward for example, crtical care. So is there something available to actually specialise in that and not just in the service, so actually getting some sort of academic qualification and acknowledgement for that. The reason I'm saying that is if, as soon as you want to

allow any sort of specialisation within any profession, it needs to go with professional qualification and that is where we're lacking currently in our services. We've got this sprint team, which is the paediatric retrieval unit thing... And yes, these guys are good because they work on that vehicle. But if they step off there, they're just the same as me being an ECP. So academically and qualification wise, they don't have anything and they're hungry for that... Our people, and I would personally like to have avenues of saying, I like to do disaster management, for example, and there is a postgraduate qualification that I can do and I can specialise in some sort of a field.

Steven Crawford 35:38
You need to diferentiate yourself...

Interviewee 35:40
Yes...

Steven Crawford 35:41
It needs to be professionally recognised, it needs to come with, besides obviously, the academic recognition, it needs to come with probably a change in title, in remuneration, further healthcare opportunities. So maybe even to deviate into a hospital type setting...

Interviewee 35:57
Yes, definitely. That I agree with, and I think currently in the profession, but in my organisation as well there is nothing for ECPs besides college, or management, and they don't get liked in management, because they often too much of a challenge, they see things out of a clinical perspective and they see things out of the point of I need to treat that patient... Which I must say, your mind does change a little bit, if you've been in the game a while to say, but perhaps we need to start considering stuff such as, it's completely off topic now, but finances and those kind of things, and then you can sometimes see why management is resistant to certain things. But that differentiating needs to take place at some point and obviously that's part of your study. We need to see what are the opportunities for our people. But currently, they come in here, and they literally just sit on that ambulance, and they exactly the same as the one next to them and they can do whatever they want to, there's absolutely no way of differentiating themselves. And that's partly because of a lack of, if I can can call it study opportunities or things to do in an academic environment, and then also partly to serve as not buying in, because the servise doesn't

actually see the value of having them there. I mean, one of the stupid things that we can do, and I think all of us can actually do in the field that we practising, is actually setting up a dedicated clinical mentoring programme in EMS and get education officers or whatever you want to call them, and you give them a small little badge, they immidiatly going to feel empowered, and I'm the clinical instructor or mentor on the shift or whatever, and expand their capabilities and teach them mentoring skills and those kinds of things. But I think that goes on both sides of the spectrum, at academic tertiary level education and in service training, we need to create some sort of a developmental pathway.

Steven Crawford 38:06
Awesome, thank you very much for that input. From a research side I am saturating my outcomes at this point which I needed to obtain from the interview. So from my side I would just like to thank you for your expert input. It is of immense value to my research. So thank you for that. And then I would like to open the floor to you, are there any further inputs or points that you may deem valuable that you would like to bring up?

Interviewee 38:38
No, I think I've spoken about most of the things. I hope the things that I mentioned is actually stuff that you can use. I think the bigger overall thing is, and there's definitely a need for something, whether it is, and I know obviously your study is academic or more focused towards the academic side of things, but it's definitely needed. And I think one of the things that's quite prevalent out there in any profession, you cannot pretend to have specialisation if you don't have anything to actually go and study and come out and say I've got this and that and a validated thing. I personally feel in our profession, currently, we have this thing of practitioners saying or the opinion would be that they specialised or that they are this or that and it's just because of years of service or because they've got the biggest mouth, but on paper it's nothing definite. Not that the qualification makes a difference always, but I think we need to get into a thing where we can say, you know what, I really like emergency care, but I've got a passion for paediatrics, so why don't you do a postgraduate degree in paediatric emergency medicine? But that has been mentioned previously, I don't have anything else...

Steven Crawford 40:03
Thank you very much. Your input is much appreciated once again.

APPENDIX H: ETHICAL APPROVAL

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Health Sciences Research Ethics Committee

09-Mar-2020

Dear **Mr Steven Crawford**

Ethics Clearance: **AN INVESTIGATION INTO STRUCTURED POSTGRADUATE PROGRAMMES FOR EMERGENCY CARE PRACTITIONERS IN SOUTH AFRICA**

Principal Investigator: **Mr Steven Crawford**

Department: **Office of the Dean: Health Sciences Department (Bloemfontein Campus)**

APPLICATION APPROVED

Please ensure that you read the whole document

With reference to your application for ethical clearance with the Faculty of Health Sciences, I am pleased to inform you on behalf of the Health Sciences Research Ethics Committee that you have been granted ethical clearance for your project.

Your ethical clearance number, to be used in all correspondence is:**UFS-HSD2020/0009/2403**

The ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the HSREC for approval to ensure we are kept up to date with your progress and any ethical implications that may arise. This includes any serious adverse events and/or termination of the study.

A progress report should be submitted within one year of approval, and annually for long term studies. A final report should be submitted at the completion of the study.

The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services- (HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the HSREC of the Faculty of Health Sciences.

For any questions or concerns, please feel free to contact HSREC Administration: 051-4017794/5 or email EthicsFHS@ufs.ac.za.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours Sincerely

Dr. SM Le Grange
Chair : Health Sciences Research Ethics Committee

Health Sciences Research Ethics Committee
Office of the Dean: Health Sciences
T: +27 (0)51 401 7795/7794 | E: ethicsfhs@ufs.ac.za
IRB 00011992; REC 230408-011; IORG 0010096; FWA 00027947
Block D, Dean's Division, Room D104 | P.O. Box/Posbus 339 (Internal Post Box G40) | Bloemfontein 9300 | South Africa

APPENDIX I: EDITING LETTER

GRAMMAR GUARDIANS

11 November 2021

To whom it may concern

Re: Proofreading and editing of research article

I, J.L. van Aswegen of Grammar Guardians, hereby confirm proofreading and editing of the master's thesis entitled "An Investigation into Structured Postgraduate Programmes for Emergency Care Practitioners in South Africa" in June and November 2021.

Please contact me on 082 811 6857 or at jeanne@grammarguardians.co.za regarding any queries that may arise.

Kind regards,

J.L. van Aswegen
Grammar Guardians