DEVELOPING AN INTERVENTION TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH

A thesis submitted to the School of Nursing and Public Health, College of Health Sciences, University of KwaZulu-Natal in fulfilment of the requirements for the Degree of Doctor of Philosophy (Nursing)

by

MAHLOMOLA KUTOANE

210509025

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SUPERVISORS: PROFESSOR PETRA BRYSIEWICZ

CO-SUPERVISOR: DOCTOR TRICIA SCOTT

DECLARATION

I declare that this thesis by publication is my own, unaided work. It is being submitted in fulfilment of the requirements for the degree of Doctorate in the School of Nursing and Public Health, University of KwaZulu-Natal, Durban, South Africa. It has not been submitted before for any other degree or examination at any other university. All sources of information utilized have been acknowledged.

Mahlomola Kutoane **Date**

Dr Tricia Scott **Date**

Prof. Petra Brysiewicz **Date**

DEDICATION

This thesis, I dedicate to my dear wife and three children, my parents, who have been a pillar of strength and support, providing me with their full and true attention to enable me to accomplish my research with truthful self-confidence.

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LIST OF ABBREVIATIONS

AED	Automated External Defibrillator
CHAL	Christian Health Association of Lesotho
CoP	Community of Practice
DCoP	Digital Community of Practice
ED	Emergency Department
EN	Emergency Nurse
ENP	Emancipatory Nursing Praxis
HIV	Human Immuno-Deficiency Virus
LRCS	Lesotho Red Cross Society
NENA	National Emergency Nurses Association (Canadian)
PIH	Partners in Health
SANC	South African Nursing Council
SDGs	Sustainable Development Goals
WHO	World Health Organization

ABSTRACT

Introduction: Professional isolation is described as a deficiency in one's network of social relations at work and is associated with compromised health service delivery and quality of life among health professionals, particularly those working in low-resource environments.

Aim: to develop an intervention for managing professional isolation among emergency nurses working in Lesotho.

Method: A mutually collaborative action research study, with an exploratory-descriptive qualitative design, was conducted in the emergency departments of five selected hospitals in Lesotho, with 25 purposively sampled registered nurses. A needs assessment was conducted through a scoping review and focus group discussions, followed by the establishment of a three-member research team (Cycle One). Thereafter, 13 individual interviews were conducted to explore the perceptions of professional isolation among emergency nurses (Cycle Two). The intervention, a Digital Community of Practice, was developed (Cycle Three) and facilitated through WhatsApp platform, then was implemented and evaluated in Cycle Four.

Results: The scoping review highlighted there is limited literature on professional isolation among health professionals and the focus group discussions revealed that participants acknowledged that there was a need for such a study. Qualitative interviews exploring professional isolation resulted in an overarching theme of 'feeling like an island' and three categories; lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness. Following consultation with the research team, a digital community of practice was developed for emergency nurses using the WhatsApp platform and then implemented.

Conclusion

This study revealed that emergency nurses in Lesotho do experience professional isolation and a digital community of practice developed using social media, such as WhatsApp, as a communication tool, could be considered as an intervention strategy for managing professional isolation among emergency nurses working in low-resource environments. However, it is recommended that a larger-scale study be undertaken to encourage the motivation for developing contextual interventions for addressing professional isolation in emergency care settings.

Keywords: *Low-Resource Environments, Professional Isolation, Emergency Nurses, Lesotho, Digital Community of Practice*

CONTENTS

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

This chapter presents background information on professional isolation among health professionals, including emergency nurses working in low-resource environments. The chapter describes the research problem and discusses various concepts and the theoretical background in relation to the study. It introduces the purpose and objectives of the study, proposes a conceptual framework to guide the study, and describes the methods of inquiry; the data analysis; and the interpretation and structure of the thesis.

1.2 BACKGROUND TO THE STUDY

Social relationships exist between two or more people who influence each other's thoughts, feelings, and/or behaviour, sharing common interests and reasons for being together as a social group. An individual is considered socially isolated if he disengages from this social group and has few, or weak, social connections and relationships (Williams, Townson, Kapur *et al.*, 2021). When professionals experience a sense of isolation from their professional peers, lacking mentoring and opportunities for professional interaction, collaboration, and development, they are considered to be professionally isolated (Services for Australian Rural and Remote Allied Health (SARRAH), 2018). Actual and perceived professional isolation are both linked with increased risk of premature death and career loss amongst professionals. It is also linked to lower productivity; it limits individual and team performance; it reduces creativity; and it impairs reasoning and decision-making (van Zoonen & Sivunen, 2021). The literature suggests that professional isolation is a multidimensional concept, that may be either geographic (a distance between), social (a lack of contact) or ideological (being a social outcast) and has the potential to cause a series of adverse effects in the workplace (Peng, Liu, Su *et al.*, 2022; Aoki, Yamamoto, Ikenoue *et al.*, 2018). Professional isolation may place nurses, especially emergency nurses (ENs), at risk for a variety of health challenges, ranging from poor physical to poor psychological health (National Emergency Nurses Association (NENA), 2018).

Nurses remain the largest healthcare workforce in Africa and their practice is diverse, and includes emergency nursing (NENA, 2018; Cunningham, Brysiewicz, Sepeku *et al.*, 2017). Emergency nursing is a unique, evolving speciality (South African Nursing Council (SANC), 2020), dealing with the care of individuals of all ages, with perceived or actual physical or

emotional health conditions that are undiagnosed or require further interventions. They can be unstable, often presenting unexpectedly (van Hoving & Brysiewicz, 2017). Whereas this is common to many nursing specialties, the key difference is that an emergency nurse integrates knowledge, skills, abilities, and judgement for dealing with people in the phase when a diagnosis has not yet been made and the cause of the problem is not known. According to NENA (2018), addressing the need, or perceived need, for unplanned emergency care in an unscheduled manner, with a greater potential for a stressful, chaotic environment, defines the character of emergency nursing. The exceptional body of knowledge and skillsets inherent in emergency nursing practice provides a unique opportunity for the emergency nurse to serve as a focal point at all levels of the disease-wellness continuum (van Hoving & Brysiewicz, 2017). Currently, in Africa, nursing practice continues to provide only a limited exposure to basic emergency care skills; the emergency nursing speciality and standards still vary between African countries (Brysiewicz, Scott, Acheampong *et al.*, 2021).

According to Scott and Brysiewicz (2017), ENs on the African continent are likely to experience professional isolation as a result of geographical and professional remoteness, and sub-optimal resourcing of educational opportunities and information technology. Therefore, ENs in these environments may need mentorship, as these challenges limit their potential for providing up-to-date, evidence-based care. Mertens, Debrulle, Lindskog *et al.* (2021) assert that inter-professional collaboration within nursing cadres and other members of the healthcare team increases the opportunity for effective interaction; co-operation and mentorship; and shared responsibility for problem-solving and decision making, for improved practice. The complex nature of the ED environment, the uniqueness of the emergency nursing speciality, the geographical nature of the country in which the study was conducted, and the research phenomenon under examination, all require nurses who can conceptualize and integrate emancipatory knowledge into their clinical practice.

The World Health Organization (2019), defined emergency care as a health service that cuts across traditional disease-focused disciplines and delivers rapid interventions for acute illnesses and injuries across the life continuum. Emergency care accomplishes at least 12 of the objectives of the sustainable development goals (SDGs: targets 3.1 - 3.9; 3d; 11.5 and 16.1), which form an integral part of the universal health coverage concept, therefore making emergency care a human right (WHO, 2019). The organization developed four essential elements, namely: availability, accessibility, acceptability and quality, to support and prioritize the establishment of each component of the emergency care pathway. Ouma, Maina, Thuranira

et al. (2018), attest that access to quality emergency services demonstrates an effective and functional healthcare system, as delays in the treatment of acute illness and injury may result in increased morbidity and mortality. Burkholder, Bergquist and Wallis (2020) also noted that emergency care serves as an access point into the healthcare system and provides a critical safety net for patients without other links to healthcare. As a primary access point service, a fragile emergency care service increases vulnerability to surge events and limits effective clinical care interventions (Phillips, Creaton, Airdhill-Enosa *et al.*, 2020).

Emergency care is an evolving field in sub-Saharan Africa, and it is slowly developing in other countries. Hence, the region has a limited capacity to deliver safe and effective emergency care, with little ability to escalate operations in times of surge demand (Kannan, Tenner, Sawe *et al.*, 2020). Marsh and Rouhani (2018) indicated that, globally, emergency care in low-income and middle-income countries faces various challenges, including limited data on hospital accessibility and service availability. A low-resource environment is an environment with marginalised access to clinical information and decision support, varied availability of specialty consultation, and hindered interaction with colleagues (Hall, 2022). Apart from the extreme burden of infectious diseases, there is a high prevalence of injury and acute medical complications of communicable and non-communicable diseases, including tuberculosis, malaria, the human immunodeficiency virus (HIV), diabetes and hypertension (Scott & Brysiewicz, 2016). The typical challenges of emergency care in the sub-Saharan region include minimal access to professional development; lack of exposure to specialist practice; lack of supervision and peer support; and lack of opportunity for inter-professional teamwork and mentorship (Tenner, Sawe, Amato *et al.*, 2019).

The Emergency Department (ED) is a dedicated hospital-based facility, or a free-standing health facility, specifically designed and staffed to provide continuous emergency medical care services through the diagnosis and treatment of acute illnesses and injuries (Brambilla, Mangili, Das *et al.*, 2022). The ED is generally characterised by spontaneous visits, the unpredictable arrival of patients, and multiple care needs of patients. Patients usually present with a broad spectrum of illnesses and injuries, some of which may be life-threatening and requiring immediate attention (Mowafi, Ngaruiya, O'reilly *et al.*, 2019). These circumstances render the department a complex, challenging and dynamic environment which involves interacting and interdependent, simultaneous, multiple processes, thereby demanding highly skilled personnel and collaborative decision-making (Marsh & Rouhani, 2018). The workload, more in than any other discipline's unit, is uncontrolled and unpredictable; decisions and interventions are often

made under intense pressure with, sometimes, incomplete information about the patient (Mowafi *et al.*, 2019). Marsh and Rouhani (2018) further emphasized that the complexity of the ED environment requires emergency care professionals, particularly in low-resource environments, to possess a broader range of clinical skill sets, and to engage in constant interaction and intensive mentorship to function effectively.

The operational context of an ED requires that the individual needs for direct nursing care are directly proportional to the number of ED patients; or patients with more severe conditions are admitted to an ED (Razzak, Beecroft, Brown *et al.*, 2019). Challenges in the structure of emergency care practice, in which a nurse is working alone in the ED or in a healthcare centre; the geographical location of the practice, where ENs are widely dispersed across very wide areas; leadership issues, and inadequate preparation for ED roles, may result in professional isolation among ENs (Williams *et al.*, 2021). According to Mertens *et al.* (2021), these challenges further limit collaborative efforts to share expertise, build professional relationships, and reflect on their professional practice.

Recognising the importance of interprofessional collaboration for emancipatory activities, communities of practice have been found to be a crucial concept to counteract the challenges arising in low-resource environments, including emergency care. Wenger-Trayner and Wenger-Trayner (2015:2) described CoPs as "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly". The developments in information and communication technology led to flexible communication and knowledge management tools enabling collaboration and sharing of best practice among health professionals, using a wide range of digital communities of practice (DCoPs) (Sant Fruchtman, Bilal Khalid, Keakabetse *et al.*, 2022). Information technology devices, such as personal digital assistants (PDAs), and mobile and smartphones, have been widely accepted in a range of health-related applications, including educational support (Mars, Morris & Scott, 2019). There is increased acceptance and utilisation of digital devices in low-resource environments, which may fuel a greater interest and demand in the various sectors, including the education, health and nursing professions (Struminger, Arora, Zalud-Cerrato *et al.*, 2017). This is due to their perceived capacity for enhancing professional networking and widening access to learning opportunities, thus decreasing the limitations of geographical location and socio-economic status (Wenger-Trayner & Wenger-Trayner, 2015).

Barayev, Shental, Yaari *et al.* (2021) also showed that smartphones, using operating systems such as Facebook, WhatsApp, Cloud and One Drive applications, have had a more dramatic influence on professional interaction than any previously known technological innovations. They are the basic elements for communication and collaborative technologies that involve voice, video, social networking, and content sharing, established by their users. Therefore, they are considered as tools which may foster a dynamic, multi-dimensional collaborative environment among ENs, improving their clinical practice and assisting in managing professional isolation, especially in low-resource environments (Barayev *et al.*, 2021; Mars *et al.*, 2019).

Lesotho's context is more unique because, it is a largely rural country in southern Africa and thus, forms a typical example of a low-resource environment. The country has about 81% of its population living in remote rural villages, often taking several hours walk over rough mountain paths from the nearest health facility (Partners In Health (PIH), 2021). Access to healthcare is shaped by its burden of Human Immuno-Deficiency Virus (HIV/AIDS), Tuberculosis (TB), poverty, and its ragged mountainous geographical layout. Given the rugged topography of Lesotho, high rates of violence as result of use of alcohol and the gangsterism among the traditional 'famo' music artists, the incidence of injuries is high. Moreover, use of wheelbarrows lined with blankets and carts pulled by work-animals, taxies and private vehicles are sometimes used to carry patients to the hospital or nearest health facility (WHO, 2022). Additionally, there is no formal training towards the specialty of emergency nursing. As a result of the outlined challenges, ENs in this country are highly susceptible to experiencing professional isolation.

1.3 PROBLEM STATEMENT

According to Murthy (2022), professional isolation is linked to adverse life effects and increased likelihood of early mortality among young adults, including healthcare workers. It markedly affects labour production, limiting individual and team performance, reducing creativity, and impairing reasoning and decision-making (van Zoonen & Sivunen, 2021). Human beings are social beings with social needs, and a sense of isolation may result when there are deficiencies, limitations, or insufficient meaningful interpersonal relationships (Peng *et al.*, 2022). Besides having an influence on psychological and emotional well-being, being socially connected has a substantial and positive effect on physical well-being (Saeri, Cruwys, Barlow *et al.*, 2018). When professionals experience a sense of isolation from their peers and lack mentoring and opportunities for professional interaction, collaboration, and development,

they are considered professionally isolated (SARRAH, 2018). The current literature demonstrates that professional isolation is a multidimensional concept that may be either geographically, socially or ideologically influenced; but most importantly, it has the potential to have a series of adverse effects on the workplace and employees, including individuals (Jung, Song & Yoon, 2021; Aizenberg & Oplatka, 2019; Anand & Mishra, 2021; Arslan, Yener & Schermer, 2020). A cross-sectional survey from a matched sample of 138 nurses revealed that professional isolation negatively impacts job performance (Amarat, Akbolat, Unal *et al.*, 2019). Frey (2018) added that professional isolation is more common among health professionals deployed in low-resource settings, resulting from marginal access to clinical information and decision-making support; the varying availability of speciality consultation; and hindered interaction with colleagues.

Professional isolation is more common among nurses, and they experience emotional and physical trauma, leading to burnout and feelings of loneliness (Gómez-Salgado, Navarro-Abal, López-López *et al.*, 2019; Seppala & King, 2017). In their work setting, nurses experience psychological and physical stress resulting from limited professional development and lack of employee mentoring, which may further increase their likelihood of professional isolation (Aizenberg & Oplatka, 2019; Rokach, 2018). However, much less consideration has been given to strategies or mechanisms which have been confirmed to have a comparable, or better, effect on professional isolation, particularly among ENs working in low-resource environments.

EDs are complex environments characterised by an uncontrolled and unpredictable workload. They are time-sensitive, involving highly stressful decisions, often being made under intense pressure, and interventions with, sometimes, incomplete information about the patient (Kannan *et al.*, 2020). Globally, EDs face increasing challenges, mainly in overcrowding, growing admission volumes, inadequate resources, and department operational inefficiencies (Mowafi *et al.*, 2019). Consequently, EDs have become the primary diagnostic and resuscitation sites for healthcare systems, with no established limits to clinical patient load concerning sex, age, or patient diseases (Marsh & Rouhani, 2018).

In sub-Saharan Africa, there is a wide range of challenges, including immense disease burdens and fragile healthcare systems, exacerbated by extreme poverty, underdevelopment, conflicts and political instability; unclear learning mechanisms; affordability; and availability of skilled healthcare providers (Raykar, Yorlets, Liu *et al.*, 2016). Inadequate pre-hospital trauma care protocols; limited training for emergency personnel; non-availability and poor distribution of resources; communication deficiencies; transportation and general infrastructure deficits; and

lack of a comprehensive approach to emergency care, are some of the challenges within emergency care in low-resource environments (Kannan *et al.*, 2020; Marsh & Rouhani, 2018).

Lesotho's medical care is primarily framed by the nation's challenges with HIV/AIDS, TB, poverty, and its topography (PIH, 2021). Speciality training in emergency care for health professionals has not yet been established, and insufficient medical equipment compounds this situation. Without a dedicated emergency care area, acutely ill patients are assessed and treated alongside less acute patients. Registered nurses, whether trained or not trained in emergency care, provide emergency care services independently; or, rarely, a doctor may be available (Ebrahimi, Mirhaghi, Rezamazlom *et al.*, 2016). ENs face these challenges while being required to possess a broader range of clinical skillsets to function effectively in unpredictability and uncertainty; and in decision-making. They frequently find themselves without sufficient staff and adequate training to meet the patient's needs (NENA, 2018). The practice environment in this country may predispose healthcare workers, particularly the rare ENs, to elevated levels of professional isolation, potentially lowering their standard of practice.

The characteristics of the ED environment, allied with the aforementioned challenges in the low-resource environments, including limited access to inter-professional teamwork and mentorship, provide a unique context in which to examine professional isolation. Despite the significant work in research focusing on professional isolation (Gómez-Salgado et al., 2019; Amarat et al., 2019 & van Zoonen & Sivunen, 2021), gaps remain in how Ens can reflect and understand the aspects of professional isolation including their ability to effectively intervene. Moreover, the interventions that have been developed and implemented were conducted in the low-resource environments of developed countries and none were conducted in the EDs (Kutoane, Brysiewicz & Scott, 2021).

1.4 PURPOSE OF THE STUDY

The purpose of this study was to develop an intervention for managing professional isolation among ENs working in a low-resource environment of Lesotho.

1.5 TENTATIVE RESEARCH OBJECTIVES OF THE STUDY

The tentative objectives of this study were:

- to establish the need for developing an intervention for managing professional isolation among ENs working in low-resource environments;

- to explore the perceptions of professional isolation among ENs working in low-resource environments;
- to develop an intervention for managing professional isolation among ENs working in low-resource environments; and
- to implement the intervention among the ENs working in low-resource environments.

1.6 RESEARCH QUESTIONS

The research questions for this study were;

- Do ENs believe there is a need for developing an intervention to manage professional isolation?
- What evidence exists in the literature regarding the interventions used to manage professional isolation among health professionals?
- What are the perceptions of ENs towards their professional isolation?
- What interventions can be used to manage professional isolation among ENs working in low-resource environments?
- What are the essential elements for developing an intervention for ENs in a low-resource environment?

1.7 SIGNIFICANCE OF THE STUDY

The purpose of this study was to make a positive contribution in the following areas:

1.7.1 Nursing practice

Professional isolation is a concept that is not clearly understood, particularly among Ens. Therefore, the results of this study are expected to contribute to the understanding of how ENs perceive professional isolation, as well as creating an increased awareness of its impact. Such understanding and knowledge may enlighten clinical guidelines and strategies to encourage management of professional isolation among ENs and allied healthcare professionals in the EDs. The study findings are expected to contribute to an improved quality of care in healthcare systems, as managing and reducing professional isolation among ENs promotes efficiency, and improved patient care.

1.7.2 Nursing research

This study may add to the existing, limited, body of knowledge on ways to potentially support ENs in low-resource environments, and to assist in managing their professional isolation. The findings may further add to the understanding and knowledge of professional isolation among

Ens, as well as all other health professionals, in the low-resource environments where the concept is currently poorly understood, but widely experienced in the workplace.

1.7.3 Nursing education

The results of this study may generate an interest in the professional isolation encountered by ENs, and therefore may contribute to the basic and advanced training programmes for nurses. The knowledge to identify, prevent and strategies for managing professional isolation may complement the necessary skillsets required throughout their professional lives.

1.7.4 Nursing administration

The study developed an intervention that could assist emergency nurses to manage professional isolation. The intervention could, potentially, assist nurse managers in raising awareness, early detection and prevention of professional isolation among their employees. This might improve the quality of life for nurses and consequently provide improved nursing service delivery.

1.8 OPERATIONAL DEFINITIONS

The following terms are operationally defined, to indicate their contextual relevance in this study:

1.8.1 Emergency nurse

The Emergency Nurses Society of South Africa (2020) defines an emergency nurse as a nurse, either registered or enrolled with the South African Nursing Council, who works within the emergency care environment. This nurse may have basic emergency nursing skills (enrolled nurses), intermediate emergency nursing skills (registered/professional nurse) or advanced emergency nursing skills (registered/professional nurse with an additional emergency nursing qualification). In this study, 'emergency nurse' refers to a nurse registered with the Lesotho Nursing Council who is working in an ED.

1.8.2 Emergency department

This is a specialised hospital department that is staffed and equipped to provide rapid and varied emergency care, especially for those who are stricken with sudden and acute illness, or who are the victims of severe trauma (Brambilla *et al.*, 2022). In this study, ED refers to any out-patient department of a hospital where patients presenting with trauma or acute illnesses attend (trauma unit, casualty unit, accident or emergency unit).

1.8.3 Low-resource environments

This refers to countries confronting severe structural impediments to sustainable development. They are highly vulnerable to economic and environmental shocks and have low levels of

human assets (United Nations (UN), 2018). In this study, Lesotho is classified as a low-resource country by the UN Department of Economic and Social Affairs.

1.8.4 Intervention

An intervention is, simultaneously, a political and intellectual act which can be individual or collective, undertaken with intent, with consciousness of context and possible outcomes, and from a specific institutional and cultural position (Sterne, 2017). In this study, it refers to a plan of action that will assist in the prevention, early detection and management of professional isolation among ENs.

1.8.5 Professional isolation

This refers to a sense of isolation from one's professional peers, resulting from a lack of professional networks and contact (SARRAH, 2018). In this study professional isolation refers to the extent to which ENs in Lesotho experience isolation from their professional peers and lack mentoring and opportunities for professional interaction and collaboration. Further to this, they experience limited possibilities for professional collaboration and feel as though they are not part of the work or professional community.

1.9 CONCEPTUAL FRAMEWORK

Attempting to understand the concept and the processes that lead to professional isolation, and the tools that could possibly be used to mitigate its consequences among ENs, various theoretical models were reviewed. The conceptual frameworks considered for this study were: (i) The Transformational Model for Professional Practice in Health Care Organizations - a descriptive representation of the structures essential for professional practice and patient care, the processes necessary to meet the imminent challenges in health care systems, including the anticipated the outcomes (Bradle, 1998). According to Elliot Wolden (2013), the four concepts (professional practice component, process component, primary outcomes and strategic outcomes) of the model can be customized to any health care organization or system, a specific organization or system based on that organization's vision, values, goals and intended outcomes. (ii) The Social, Action, Leadership, and Transformation Model was developed by Museus et al., (2017) to explicitly focus on leadership that is socially conscious and facilitates transformation to achieve justice. (iii) Emancipatory Knowing Theory is described by Chinn & Kramer (2011) as the ability to identify and critically reflect on the social, cultural, and political problems of injustice or inequity. It focuses on equally empowering individuals with the knowledge required to eliminate barriers that limit health and well-being. (iv) The fourth theory reviewed was the Emancipatory Nursing Praxis Model (ENP) by Walter's (2017) which

is a middle-range nursing theory of social justice aiming to reveal, and created to resolve, unknown socio-political, ideological and oppressive barriers that may thwart nurses' complete democracy, liberty, voice, and ability to integrate holistic caring-healing.

1.9.1 Overview of the conceptual framework

The purpose of the intervention was to be implemented in a low-resource environment, therefore, the ENP was considered suitable to underpin this study. The ENP advocates for the integration of social justice within the profession of nursing and provides a framework in which nurses can awaken and serve as agents of change, working to ameliorate issues of systemic marginalization. The social justice theory advocates for equitable distribution of power, resources, and obligations in society to all people, regardless of social status, and has been acknowledged as a professional value in the nursing literature (Habibzadeh, Jasemi & Hosseinzadegan, 2021; Matwick & Woodgate, 2017). According to Ayala, Hage & Wilcox (2011), this theory is fundamentally governed by principles of inclusion, collaboration, co-operation, equal access, and equal opportunity. Professional isolation generally ensues where the work settings restrict professional interactions, thus thwarting these fundamental principles of social justice. In essence, the emancipatory praxis is aimed at the empowerment of nurses through knowledge that stimulates self-sufficiency and independence, consciousness of social models, and a flexible environment that is responsive to change (Habibzadeh *et al.*, 2021).

1.9.2 Rationale for choosing the Emancipatory Nursing Praxis Model

The ENP model is grounded in the unitary-transformative theory and is sustained by other extant nursing theories, such as Nursing, Caring, and Complexity Science (Davidson, Ray & Turkel, 2011); Unitary Foundations for a Healing Praxis (Cowling Iii & Swartout, 2011); and The Theory of Human Caring (Watson, 1997). In this model, events are uniform and self-organized, affiliated to multi-cultural diversity, and grounded in a relational ontology of moral-ethical-transpersonal caring, which is central to nursing practice (Marks, 2013). According to Rafii, Nasrabadi and Tehrani (2022), ENP is a model based on the human environment, as an essential component, where the application of knowledge (reflection-in-action and action-in-reflection) is the designer for emancipatory human environment (systemic) change. This model is grounded in empirical, meaningful and useable philosophical assumptions, and values the principles of social inclusion, collaboration, and co-operation. Therefore, the researcher found it to fit the conceptual and philosophical perspectives of the social emancipatory process, and thus the purpose of this study, compared to other theories. In the model, as demonstrated in Figure 1 below, the learning processes of becoming, awakening, engaging and transforming

repeatedly inform and shape each other, occurring and recurring in a variable approach (Walter, 2017). This spiral provides an ongoing, evolutionary, unpredictable and transformative process which potentially allows ENs to ascertain, resolve and transform their practice environment.

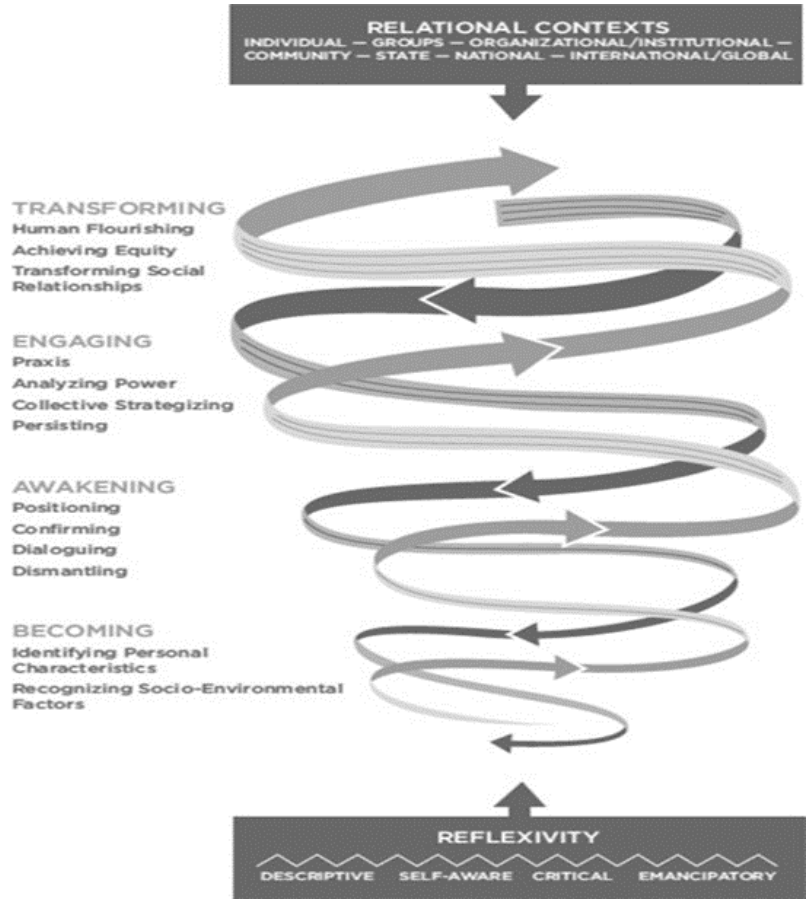

Figure 1. Emancipatory Nursing Praxis Model (Walter, 2017), author permission (Appendix P).

1.9.3 Application of the model

The ENP model employs practical concepts that can be verified empirically and defined operationally, allowing it to interweaving social justice into nursing practice (Walter, 2017). It has four main conceptual categories, namely: becoming, awakening, engaging, and transforming, anchored by relational and reflexive elements as the contextual conditions which influence the basic social process of ENP (Walter, 2017).

19.3.1 Becoming

Walter (2017) describes this phase as the unconscious, initial exploration of perceptions and ways of being in the world. Based on Wesp, Scheer, Ruiz *et al.'s* (2018) views, this model challenges nurses to become conscious of their marginalized social conditions, which are often

subtle and hard to recognize, and to change them for the better. The phase is mostly influenced by intrapersonal characteristics and socio-environmental factors, working together to make individuals conscious of their social position. Daszko and Sheinberg (2017) added that the 'becoming' phase is the beginning of realization on the part of the individual that, despite best current or previous efforts, they still have room for improvement or development.

Emergency nursing is a new and unique speciality that is constantly being scrutinized and adapted to develop a body of knowledge based on a solid foundation, in line with the social transformations that exist in other countries of the world (Cunningham *et al.,* 2017). This effort assists ENs to become aware of their professional isolation, which may be dominated by a range of factors, such as limited access to professional development; lack of exposure to specialist practice; lack of supervision and peer support; and lack of opportunity for inter-professional teamwork and mentorship (Paliadelis, Parmenter, Parker *et al.*, 2012). These may be perpetuated by geographical and professional remoteness and under-investment in information technology. The ENs were not consciously aware of their professional isolation due to these contextual factors, so awareness-raising efforts, such as conducting workshops on professional isolation, were carried out by the researcher.

1.9.3.2 Awakening

'Awakening' is the second phase, in which the individuals take cognisance of the disparities, inequities, and inequalities in their midst; but not necessarily their social milieu (Walter, 2017). Awakening usually arises from extensive experience and reflection that results in a person awakening and identifying their role in society (Holmes, 2022). The emancipatory reflexive practices begin to emerge as practitioners take responsibility to reflect, introspect and identify opportunities for new ways of interacting, scrutinizing and dismantling previously held oppressive ideas (Singer, Johnson, Crooks *et al.,* 2021). In this study, the researcher conducted focus group discussions (FGDs) to determine if ENs needed to form a DCoP where they would be afforded the opportunity to reflect on, and introspect, their perspectives; and scrutinize the interventions through which they would be able to manage professional isolation. A scoping review was also conducted to map the relevant literature that would assist ENs in deciding on the interventions they can use to reflect on their practice and management of professional isolation.

1.9.3.3 Engaging

Walter (2017) has described this phase as a dynamic, evolving process in which the individuals perform various actions and interactions intended to advance specific transformative goals.

According to Wesp *et al.* (2018), this phase involves an extensive analysis of power within the group, and the collective strategizing that creates injustice, before engaging in action that would lead to transformation in support of a social justice agenda. Collective strategizing encompasses a personal and professional dialogic process of assessing, coalescing support, and planning the individual or collective actions/interactions required, within a given situation or phenomenon being investigated (Wesp *et al.*, 2018).

The researcher, in collaboration with the ENs, developed a research team which facilitated the formulation of a DCoP, by engaging in knowledge-sharing activities, and developing strategies for managing professional isolation and practice standards. They developed a WhatsApp group as a platform for effective inter-professional collaboration, mentorship and continued professional development, as key elements which play a role in the management of professional isolation.

1.9.3.4 Transforming

This phase is characterised by three goal-directed processes: human flourishing, achieving equity, and transforming social relationships (Garcia, 2021). 'Human flourishing' is expressed in various forms by individuals, such as through their feeling of wellness and quality of life deserved by all people. Achieving equity encompasses all basic human needs, such as shelter; education; food; employment; transportation and full connectedness; belonging and participating in society (Walter, 2017). 'Transforming' is experienced as participants develop perceptions that engage their thoughts, feelings, and actions, regarding what constitutes social justice (Garcia, 2021).

In this study, transformation started to emerge among ENs when they became aware of their status as ENs and started to participate as members of the research team.

1.9.3.5 Relational and reflexive contextual conditions

In this model, the association between the concepts is influenced by the relational context (individual; group; organizational; community; national; and international) and the reflexivity context (descriptive; self-aware; critical; and emancipatory). Furthermore, this model embraces the ability to identify social and political problems of injustice or inequity to identify or participate in social and political change to improve people's lives (Valentine, Sekula & Lynch, 2020). The use of the ENP model increases ENs' understanding of social justice, while linking concepts to theoretical nursing underpinnings.

1.10 RESEARCH METHODS

This section describes the research methods used in this study.

1.10.1 Research paradigm

This study was underpinned by pragmatism, which is concerned with action and change and the interaction between knowledge and action (Creswell & Creswell, 2018). Pragmatism involves the application of any methodology to identify a solution to a particular problem (Kelly & Cordeiro, 2020) regarding the subjective and objective revelation of answers (Creswell & Plano Clark, 2011). This paradigm focuses on diverse theoretical perspectives and allows for the use of multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis (Keskin & Metcalf, 2011; Viberg & Grönlund, 2013). These characteristics make pragmatism a suitable paradigm that facilitates a dynamic approach to address the complex research problems often encountered in nursing practice; and not merely observing the world.

In this study, pragmatism was employed because it is a practical approach to finding a solution to a problem; it has an association with qualitative research methods; and it is an action-oriented inquiry process based on commitment to democratic values and progress (Huffman, 2013; Cameron, 2011; Greene & Hall, 2010). Furthermore, pragmatism articulates that qualitative research reconstructs and probes the experience of social action (Huffman, 2013). Hence, the study participants, in collaboration with the researcher, determined the factors that contribute to the professional isolation which challenges their practice, and in relation to the developing DCoP.

1.10.1.1 Criticism of pragmatism as a paradigm

Pragmatism has been widely criticized as a research paradigm, from as early as 1904, with concerns raised that it focuses on practical results, while ignoring philosophy and theory (Mccready, 2010). Johnson and Onwuegbuzie (2004) argue that pragmatism, like all other philosophies, has shortcomings which researchers should take into consideration when deciding to employ it. The practical challenge associated with pragmatism is primarily its contextual, problem-centred nature, which limits its ability to identify and analyse structural social problems (Johnson & Onwuegbuzie, 2004). Pragmatism has been criticized for being an approach that is designed primarily as a solution to a specific situation or problem, which works without considering wider or long-term issues (Doyle, Brady & Byrne, 2009; Onwuegbuzie, Onwuegbuzie, Leech *et al.*, 2009; Glogowska, 2011).

While accepting these limitations, there are basic principles which make it suitable for this study. According to Taatila and Raij (2012), pragmatism is a paradigm that accommodates a variety of research methodologies and uses them to achieve a deeper level of understanding about a particular phenomenon. Moreover, pragmatism is concerned with action and change and the interplay between knowledge and action, making it an appropriate paradigm for intervening in the world, and not merely observing the world (Goldkuhl, 2012).

1.10.2 Exploratory qualitative design

According to Creswell (2014), qualitative research primarily focuses on acquiring direct experience of the setting, which is a naturally explorative endeavour with the potential for generating new theories and ideas. Marshall and Rossman (2011) described qualitative research as the broad study of social phenomena; its distinct designs draw from multiple methods of inquiry. In collaboration with the participants, professional isolation was explored, based on the perceptions of the ENs, looking at contributing factors and strategies for managing professional isolation (Creswell, 2014; Maxwell, 2013; Rossman & Rallis, 2012).

1.10.3 Collaborative action research

Action research was the primary research method employed in this study, underpinned by the ENP model (Walter, 2017) as the conceptual framework. Mutually collaborative action research is committed to supporting professionals and groups of professionals in coping with their practical challenges and implementing innovations in a thoughtful way: an intervention in personal practice with a commitment to professional improvement (Nasrollahi, 2015). This means that the ENs became the subjects and objects of the enquiry. They investigated their own actions and motives systematically, were critical of their interpretations and findings, and became more open to alternative viewpoints regarding professional isolation. The dual commitment of action research contributed to both the practical challenges of the ENs and to furthering the goals of social science, simultaneously (Nelson, 2013). Thus, it allowed the researcher to collaborate with the participants in bringing about changes in their practice, through an intervention that they mutually regarded as desirable. Ideally it engaged the participants in the research activities (Davies, Lambert, Turner *et al.*, 2014; Abdel-Fattah, 2015).

Collaborative action research allowed for the researcher, in collaboration with the ENs, as both research team members and participants of the study, to interrogate professional isolation as a perceived problem: its causes, contributing factors to, and possible mechanisms of, the problem (Nelson, 2013). This research design is democratic in nature and is effective for research in

diverse disciplines of healthcare. Dynamically, it brings about changes in practice aimed at the participants, together with the participants, who collectively advise about subsequent research and action to be undertaken (Davies *et al.*, 2014). According to Lyngsnes (2016), reflexivity in action research is a mutual collaboration whereby the participants take part in reflexive dialogues, in which they express their thoughts and interpretations, complementing the new insight into the researcher's process of confronting, modifying and improving their interpretations. During each cycle, and after each cycle, of the study, the research team, together with the researcher, was involved in creative spirals of planning, acting, observing, reflecting on the findings, and collaboratively determining the best possible ways to manoeuvre to the next cycle of the study.

1.11 RESEARCH SETTING

This study was conducted in Lesotho, officially known as the Kingdom of Lesotho, which is a mountainous country entirely surrounded by the Republic of South Africa. According to the Ministry of Health (2016), the land area of Lesotho is approximately 3 035 km², with less than 10% arable land. The western lowlands and foothills (urban), ranging from 1500 to 2000 metres above sea level, occupy about one quarter of the total area of Lesotho. The country has a population of 2,324,419 with density of 68 people per square kilometre (World Population Review, 2023) and it is divided into 10 administrative districts, seven of which are found in the lowlands, with the majority of the population and the best agricultural land. The eastern mountains (rural), the highest point of which is almost 3500 meters above sea level, are more sparsely populated (Ministry of Health, 2016).

The Ministry of Health is responsible for all health issues in Lesotho, including the development of health policies, the development of standards and guidelines, the mobilization of health resources; and the monitoring and evaluation of health sector interventions. The healthcare system is divided into primary, secondary and tertiary levels. The healthcare system in Lesotho consists of 22 hospitals and 192 health centres (clinics) distributed throughout the country and administered by different bodies. Government administers 12 hospitals and 79 clinics; the Christian Health Organization of Lesotho (CHAL), eight hospitals and 75 clinics; the Lesotho Red Cross Society (LRCS), four clinics; and the Maseru City Council two clinics; with two hospitals and 33 clinics which are privately owned. In each of the hospitals, there is an outpatient department or casualty unit with a small area designated for emergency care. In all other health centres, acutely ill patients are seen together with other patients, with no dedicated area for emergency care. Registered nurses, whether trained or not in emergency

care, provide emergency care services in these units independently; or rarely, a doctor may be available. Considering the objectives of the study, the researcher purposefully opted to conduct the study in this geographically challenged setting with poor infrastructure, unstable media coverage and a shortage of trained healthcare professionals. The study was conducted in five of the 22 hospitals; one private hospital; one CHAL hospital; two government hospitals; and the national referral hospital.

1.11.1 Hospital A

This is a 425-bed national referral hospital and a district hospital for the capital city, Maseru. Initially, it was part of a public-private partnership with the Ministry of Health of the Government of Lesotho and is the nation's major clinical teaching site for health professionals. The hospital offers a wide range of services, including a well-established 24-hour Accident and Emergency Department. The department has a full complement of emergency equipment and is staffed with unit-based doctors, registered nurses, nursing assistants and porters. There are 17 registered nurses allocated in the ED in this hospital, including a unit manager.

1.11.2 Hospital B

This is a CHAL mission hospital, situated in the district of Berea, 80km. north-east of Maseru. It operates with a capacity of 150 beds and offers a comprehensive range of healthcare services, primarily to approximately 100,000 people living in the 264 villages in its health service area. In this hospital, the casualty department is in the out-patient's department, headed by the nursing officer. There are two registered nurses allocated to this department, with nursing assistants.

1.11.3 Hospital C

Hospital C is a government hospital situated about 100km. north of the capital city, Maseru. It has a bed capacity of 200, and provides various services, including surgical, medical, maternity and emergency, to serve a population of more than 300 000 people. In this hospital there is a dedicated casualty department which provides 24-hour accident and emergency services. The department is staffed with three registered nurses, rotating on an annual basis, with the nursing officer leading the department.

1.11.4 Hospital D

This is also a district hospital, about 48km. north of Maseru, with a capacity of 128 beds. The hospital provides various services, including emergency services. However, there is no dedicated ED. It has a single room assigned for resuscitation and is staffed by two registered

nurses, one in charge of the department. The registered nurses are allocated on an annual, rotational basis.

1.11.5 Hospital E

This hospital is a 40-bed private hospital situated in the suburb of Ha Thetsane, about 6km south of central Maseru. The hospital provides 24-hour casualty services, wards and maternity departments. The casualty department is staffed with one registered nurse on a monthly rotational basis.

1.12 RESEARCH PARTICIPANTS

Purposeful sampling was used to select participants which, the researcher believed, had full knowledge of emergency care, which would be useful in achieving the purpose of the research (Palinkas, Horwitz, Green *et al.*, 2016). The participants were registered nurses currently working in the EDs of the five selected hospitals. To allow for representation of the full range of individuals, participants were sampled from government, CHAL, and private hospitals, through purposeful sampling, which is a non-random method of sampling used to select the most knowledgeable subjects to participate in the study (Palinkas *et al.*, 2016). Table 1.1, below, shows the distribution of the registered nurses across the EDs from which the sample was obtained.

Table 1.1: The distribution of the registered nurses in the EDs

SETTING	NAME OF HOSPITAL	NO. OF RNs
Hospital A	National referral hospital	17
Hospital B	CHAL hospital	2
Hospital C	Government hospital	3
Hospital D	Government hospital	2
Hospital E	Private hospital	1
Total: According to site A, B, C, D & E		25

* Numbers current as of October 2018.

The inclusion criteria for the participants are:

- all registered nurses over the age of 18 years
- registered nurses who currently working in an ED and have worked for more than three months in that department
- registered nurses working in the EDs

Exclusion criteria:

- registered nurses currently not working in an ED

1.13 CYCLES OF ACTION RESEARCH IN THIS STUDY

The research was conducted in four cycles using action research, as indicated in Table 2.1, below.

Table 2.1: The summary of the research plan

Cycle	Research objective	Research question	Research approach	Setting
Cycle One	To establish the need	a. What evidence exists in the literature regarding the interventions used to manage professional isolation among health professionals? b. Do ENs believe that there is need for developing an intervention for managing professional isolation?	Focus group discussions (sub-study one) and Scoping review (Manuscript One) (sub-study two)	Five EDs
Cycle Two	To explore the perceptions of professional isolation among ENs	c. What are the perceptions of ENs regarding professional isolation?	Exploratory-descriptive qualitative study (Manuscript Two) (sub-study three)	Five EDs
Cycle Three	To develop an intervention for managing professional isolation	d. What interventions can be used to manage professional isolation for ENs working in low-resource environments?	Two workshops: Integrating the results from Cycles One and Two. The five-phased life cycle of the CoP model guided the establishment of the DCoP. A WhatsApp platform was used for collaboration and interaction. (Manuscript Three) (sub-study four)	Five EDs
Cycle Four	To implement the intervention among the ENs.	e. What are the essential elements for developing an intervention for managing professional isolation among ENs?	Implementation of the intervention and evaluation of the implementation of the intervention.	Five EDs

1.13.1 Cycle One: Establishing the need

Mutually collaborative action research requires that individuals direct their own progress; and it recognizes the necessity for society members to work together meaningfully in analyzing their own solutions to sustainable development (Nyumba, Wilson, Derrick *et al.*, 2018). Therefore, the researcher conducted a needs assessment using a scoping review of the existing literature, and FGDs involving nurses working in the emergency departments (Chapter Two).

1.13.1.1 Conducting a scoping review

The aim of the scoping review was to address the study objective: to map and examine available literature on interventions for managing professional isolation among health professionals in low-resource environments.

In line with the Joanna Briggs Institute Methodology for Scoping Reviews (2020), the scoping review was guided by the methodological framework proposed by Peters et al. (2017), with amendments made to this framework by Aromataris and Munn (2020). This framework informed the design of the review and focused on the following questions: (i) What interventions for managing professional isolation for health professionals in the low-resource environment are being addressed in the literature? (ii) Which target populations are addressed in the literature, regarding professional isolation for these health professionals? (iii) What are the key gaps in the literature relating to professional isolation for health professionals in low-resource environments?

A search strategy, developed in consultation with a specialist librarian, was conducted initially in September 2018 to establish search terms, and was then revisited in February 2019 to identify published and unpublished research studies relevant to professional isolation among health professionals. The search terms (Table 4) were applied to the following databases: EBSCOHOST; Cochrane Library; EMBASE (via Ovid); PsycINFO; CINAHL; MEDLINE and PubMed. Dissertations and theses databases, as well as Sabinet WorldCat Dissertations, were searched for potentially relevant literature. To discover relevant grey (non-indexed) literature, the same keywords were used, as for the indexed databases, to search in ResearchGate, Google and Google scholar. A comprehensive search was conducted for relevant literature on the websites of specific global health organisations, institutions and agencies, with relevance to health professionals working in low-resource environments, professional isolation, and interventions for managing professional isolation. Reference lists of cited articles were hand-searched to identify additional articles for inclusion. In identifying the

literature, searches were limited by language and year of publication (from January 2009 to February 2019) (**See Chapter Two, Manuscript One**).

Table 1.3: Search terms

Content	**Problem**	**Population**	**Context**
"interventions" (OR "mechanism" OR "strategies")	"Professional isolation" (OR "isolation" OR "loneliness")	"Health personnel" (OR "allied health professionals" OR "nurse" OR "medical staff" OR "doctor")	"Developing country" (OR "low-resource setting" OR "low-income country" OR "resource-constrained setting"

1.13.1.2 Access and recruitment of participants

Gaining access to each of the five settings was a necessary part of the needs assessment, and involved the following: (i) ethical clearance from University of KwaZulu-Natal (Appendices H, I, and J); (ii) permission from the Ministry of Health of the Kingdom of Lesotho (Appendices K and L); and (iii) gatekeepers' (hospital managers) approval from the five selected research settings (Appendices M and N). These gatekeepers further introduced the researcher to the unit managers.

FGDs were used to establish the need for the study and build rapport with the potential participants. FGDs generate more detailed exploration of ideas than one-to-one interviews, since they encourage participants to reflect and introspect on their perspectives, and scrutinize their views, which might lead to the development of an intervention through which they can manage professional isolation (Nyumba *et al.,* 2018). After obtaining the gatekeepers' permission, the researcher telephonically contacted each unit manager of the EDs to set appointments, provide information about the study and discuss suitable dates and times for FGDs. In each setting, the researcher met with the nurses to introduce them to study, to build respectful, open and trusting partnerships through FGDs. During these sessions, the researcher introduced the concept of professional isolation among ENs, and invited them to participate in FGDs. In these discussions, participants were asked to think deeply about their practice situations; their roles; the way their own values and assumptions influence their perspectives of their needs; how they understand professional isolation; their professional development; and the strategies they can employ to cope with practice challenges that arise.

From these discussions, it appeared that the concept of professional isolation was not known or understood by the participants from all the settings. However, they agreed that there was a need for a study on professional isolation. Conducting FGDs with the ENs working in each of

the EDs revealed their beliefs and perceptions regarding this concept and identified opportunities relating to the study. The researcher held the initial workshop (Appendix S) with the potential participants from three settings. In this workshop the researcher gave a 15-minute presentation and allowed a 30-minute discussion on emergency nursing, covering the roles of ENs and their scope of practice, as well as the challenges facing ENs in low-resource environments, particularly in Africa.

1.13.1.3 Forming the research team

In line with the principles of collaborative action research and "*the plan–act–observe–evaluate cycles*" of action research, and in collaboration with interested nurses, the researcher formed a research team (Castro Garcés & Martínez Granada, 2016). From the five settings where FGDs were conducted, the researcher asked for nurses who might be interested in participating as research team members. The research team initially consisted of three nurses (one from each ED), and the researcher. An agreement (Appendix F) was drawn up between the research team and the researcher, outlining the responsibilities of all the research team members and issues relating to the ownership of the data. Due to the challenges in one setting where there was a continuing nurses' strike, one member of the research team withdrew from the study and was replaced by another member who was recruited from the same facility through referral from one member of the research team.

The research team was involved in all the cycles and the researcher ensured that they participated in all aspects of planning and implementation of the research, until completion. The research team members were quick to accept the invitation to participate in the study, and co-operated with the researcher in improving the needs assessment by highlighting the nature of the challenges they encountered in the ED where they worked, showing that there was need to continue with the proposed study. Throughout the study, regular meetings were held with the research team members to discuss the emerging categories and interpretations.

1.13.2 Cycle Two: Exploring the perceptions of professional isolation

The aim of this phase was to explore professional isolation among ENs working in low-resource environments. The collaborative efforts of the research team were evident in this cycle as they assisted in qualitative data collection by helping to identify participants for individual and telephonic interviews and arranging for secured, unoccupied rooms to facilitate interviews with the participants. The research team was also finalized during Cycle Two, as one member had withdrawn from the study due to the nurses' strike in the facility.

1.13.2.1 The participants in Cycle Two

Participants consisted of nurses who worked in the EDs of the five selected hospitals in Lesotho. Purposeful sampling was used to recruit nurses registered with the Lesotho Nursing Council, with either a diploma and/or degree in nursing and currently working in the ED. Purposive sampling was justifiable in this study, because registered nurses working in specialised, highly visible EDs would have expert knowledge pertaining to the challenges facing nurses in the department. These registered nurses needed to have been working for at least three months (to have sufficient experience) in the ED, with or without additional training in emergency care/a nursing qualification, or training.

Inclusion criteria were registered nurses who were currently working in the EDs and had worked for more than six months in that department.

1.13.2.2 Data collection in Cycle Two

After obtaining ethical approval and permission from the research sites, the researcher (MK) approached the ED unit managers and requested permission to speak to the nurses. Initially four face-to-face interviews were conducted (November 2019 to February 2020), and then, owing to the COVID-19 pandemic, the researcher had to switch to telephonic data collection for six participants (August 2020 to January 2021). As COVID-19 restrictions eased, three more participants were interviewed face-to-face (March 2021 to June 2021).

Each interview was approximately 20 to 45 minutes long and was held at a time and venue suitable for the participants. All interviews were guided by the interview guide (Appendix B), consisting of four open-ended questions; and were conducted in English, audio-recorded and transcribed verbatim by the researcher (MK). After 12 participants had been interviewed and the data analysis completed, the research team jointly determined that redundancy and completeness of the data had been reached.

1.13.2.3 Data analysis in Cycle Two

Qualitative content analysis was used to analyse the data from the individual interviews with the participants (Erlingsson & Brysiewicz, 2017). The interviews with the participants were transcribed by the researcher. The transcripts were read line-by-line several times over by the researcher, who focused on answering the research questions with an open mind (Graneheim & Lundman, 2004). Following the procedures recommended by Erlingsson & Brysiewicz (2017), the text was divided manually into ‘meaning units. The meaning units were condensed to reveal the central meaning for the identification of codes. Similar codes were combined into

categories. Coding and categories were discussed and critiqued by the researchers (MK, PB and TS) until consensus was reached. **(See Chapter Three, Manuscript Two)**

1.13.3 Cycle Three: Developing an intervention for managing professional isolation

The objective of this cycle was to develop an intervention for managing professional isolation among ENs working in low-resource environments.

1.13.3.1 Research approach in Cycle Three

Based on the principles of communities of practice (Wenger-Trayner & Wenger-Trayner, 2015) the researcher and the research team established a DCoP guided by the five-phased life cycle of the CoP model suggested by Lupton, Webne-Behrman, Johnson *et al.* (2019). The Life Cycle of CoPs Model sets out the five phases of the life cycle of a CoP that guide the development of a community of practice in a marginalised setting. To promote comprehension of emancipation among ENs, and to develop an intervention for managing professional isolation, a thorough literature search was undertaken to establish the best method to develop communities of practice and the results were presented to the research team members. Communities of practice in healthcare: Frameworks that were considered of relevance in this study included a framework for managing knowledge-sharing in operations (Valentine *et al.*, 2020); A Step-by-Step Guide for Designing & Cultivating Communities of Practice in Higher Education (Cambridge, Kaplan & Suter, 2005); and Developing Communities of Practice by 'thinking together' (Pyrko, Dörfler & Eden, 2017). Because the anticipated intervention was to be employed in a low-resourced environment, the research team agreed that the aforementioned frameworks did not sufficiently suit the purpose of the study.

The researcher and the research team convened in two meetings to discuss the findings from Cycles One and Two before a decision could be made to develop an intervention. The research team convened with the purpose of reflecting on the results and to debate how these findings could best inform the development and implementation of the intervention for managing professional isolation. In consultation with the supervisor (PB), it was agreed that a CoP using a WhatsApp platform should be developed and implemented to facilitate interaction among ENs. WhatsApp was used because it is a social media platform which increases collaboration and sharing among its users (Mars *et al.*, 2019). Moreover, in the initial workshop (Cycle One), conducted prior to the implementation of the intervention, it was revealed that WhatsApp was one of the standard digital platforms and the participants preferred using it. The researcher took a leadership role within the research team as this study was being conducted to earn a formal

qualification. The research team discussed possible mechanisms to provide a guiding framework for the group discussions. It was agreed that the African Federation for Emergency Medicine Nursing Induction Booklet (AFEM NIB) (Muya, Brysiewicz & Acheampong, 2020) should be used to direct weekly discussion topics in the WhatsApp group. AFEM NIB was used with the understanding that emergency nursing is a new speciality in the country, and the booklet was primarily developed to introduce novice ENs in the ED environment, particularly in low-resource environments. The research team encouraged simple and informal discussions, thus nurturing confidence and ensuring the rapid flow of communication among the CoP members (Khoza & Marnewick, 2021). **(See Chapter Four, Manuscript Three)**

1.13.4 Cycle Four: Implementing the intervention and evaluating the implementation of the intervention

In Cycle Four, the developed intervention to manage professional isolation among ENs, was implemented, followed by an evaluation of the implementation. Due to the nature of action research, in collaboration with the research team it was concluded that the intervention would be implemented at all sites, as opposed to just two sites, as proposed by the researcher. A total of 19 ENs from the five selected settings volunteered to join the WhatsApp group, 'Lesotho Emergency Nurses', which was convened in November 2021, and it is still running. However, because this study was for degree purposes, a pilot evaluation of the implementation of the intervention was done in February 2022. The research team, with the support of the research supervisor, acted as moderators of the group. The topics discussed included the nature and purpose of the WhatsApp group and ground rules for participation.

After three months, a pilot evaluation of the implementation of the intervention was conducted using qualitative content analysis and a checklist questionnaire (Appendix C) (Pimmer, Mhango, Mzumara *et al.*, 2017). The results highlighted the three dimensions of a COP, namely mutual engagement, joint enterprise, and a shared repertoire (Wenger, 1998).

1.14 RIGOUR

In keeping with the requirements of qualitative research, credibility, transferability, dependability, and confirmability were applied to ensure the rigour of the study (Lincoln & Guba, 1985).

1.14.1 Credibility

In this study, credibility was accomplished through the researcher's prolonged engagement with the participants in the five different settings (approximately six months), thereby

becoming known to the participants, and thus creating rapport (Shenton, 2004). Peer debriefing was conducted through regular consultation with the meetings' supervisors, and discussions with the research team, to review the activities of the study; to suggest new plans of action; to make appropriate changes; and to discuss the categories emerging from the data (Morse, 2015). The interview guide allowed for focus and flexibility during the interviews by including prompts that allowed further expansion of answers and the opportunity to request more information, where necessary (Forero, Nahidi, De Costa *et al.*, 2018). Credibility was further enhanced through an independent review of the data by the three authors (the student and the two supervisors experienced in qualitative research) which were then discussed, and, in turn, categories were agreed upon.

1.14.2 Dependability

Stability and consistency were established through a detailed audit trail throughout the study, by describing in detail how data was collected, how categories were derived, and how decisions were made throughout the inquiry (Shenton, 2004). All the steps taken in coding the data and identifying the themes and categories were agreed upon by the three researchers (Noble & Smith, 2015). The audit trail enabled the researcher to demonstrate that the study findings were derived from the data obtained and not from the researcher's ideas and preconceptions (Korstjens & Moser, 2018).

1.14.3 Transferability

According to Shenton (2004), transferability is established by providing detailed information on the study settings, the study participants, and the data findings, to allow the reader to make an informed decision as to whether the findings are transferable to other settings (Lincoln & Guba, 1985). A purposive sampling technique was used to ensure that the selected participants were representative of the diverse groups of ENs (Forero *et al.*, 2018; Noble & Smith, 2015). The researcher further reported on the number of participants of each sub-study; the duration and number of data collection sessions; and the limitations with regards to accessing the participants during the COVID-19 outbreak. This evidence established the limits of the study, which could be considered prior to assessing transferability (Shenton, 2004).

1.14.4 Confirmability

To enhance confirmability, the analysis was conducted by the three researchers (one student and two research supervisors) who brought different perspectives to the data interpretation (Forero *et al.*, 2018). The researcher maintained a reflexive journal during the research process

to keep notes and document daily reflections that would be beneficial and pertinent during the study (Cypress, 2017).

1.15 RESEARCH ETHICS

Grove, Gray and Burns (2015) advise that honesty, integrity and good ethical practice are fundamental to nursing research inquiry; and not only the researchers' expertise and diligence in conducting the research study. Ethics clearance was obtained from the university's Humanities and Social Science Ethics Committee (Appendix H). Ethical approval and clearance were granted with any modifications that were made during the data collection process (Appendices I and J). Ethical clearance was sought from the Ethics Committee of the Ministry of Health of the Government of Lesotho, with amendments and renewals being forwarded as required (Appendices K and L). Permission was also sought from the management of the five hospitals (Appendices M and N). Following permission from the management of the hospitals, unit managers were contacted to request a convenient place to conduct a meeting. In the meeting, all relevant information about the purpose of the research was presented and registered nurses were asked to voluntarily participate in the study.

1.15.1 Maintenance of ethical principles

This study adhered to ethical principles as proposed by Grove *et al.* (2015) as follows:

1.15.1.1 Right to anonymity and confidentiality

Anonymity refers to the protection of the participants in such a manner that even the researcher is unable to link the participant with the information provided (Grove *et al.*, 2015). All the discussions on the WhatsApp group were accessed only by the participants. Extraction of the relevant data from the discussions was anonymised by removing and hiding the participants' contact numbers and names to ensure privacy of the information (Lee, Jung, Park *et al.*, 2018). The fundamental principles of research ethics include beneficence and non-maleficence, which obligate researchers to maximize benefits from the research and minimize harm and risk to their subjects (Smebye, Kirkevold & Engedal, 2016). Benefits can be defined as gain to society or science through contribution to the knowledge base; gain to the individual through improved wellbeing; or empowerment of the individual by giving him or her voice. Harm may include death and injury; psychological abuse; loss of privacy and public exposure; and may not only affect individuals, but specific population subgroups as well (Smebye *et al.*, 2016). Whilst there was no immediate benefit to participants, there was no anticipated or encountered harm arising from participation either. Anonymity and privacy of the research subjects were maintained, as

explained under the principle of anonymity. The only aspect that caused them inconvenience was the time they sacrificed for this study.

1.15.1.2 Justice

There were no incentives offered to research participants during the entire course of this study, other than the continuous professional development (CPD) points to be gained.

1.15.1.3 Collaborative partnership

At the beginning of this study, the researcher drew up an ownership agreement with the research team which stipulated issues of confidentiality, intellectual property, publications, and termination of the agreement.

1.15.1.4 Informed consent

The researcher, guided by the protection of human research subjects criteria, provided information to all potential participants and the opportunity to participate in the study by describing the study and what subjects would be asked to do (Grove *et al.*, 2015). The decision whether to participate is a voluntary act and lies entirely with the potential participant, based on the information provided by the researcher (Farmer & Lundy, 2017). All participants gave written, informed consent for participation (Appendices D and E) prior to commencing the research project. The document explained possible risks and benefits, gave assurance of anonymity and confidentiality, and guaranteed freedom to withdraw or refuse to participate in the study. The information in the consent form was sensitive to the participants' language and cultural needs. Focus group confidentiality was agreed, so what was said in the group remained in the group.

1.16 DATA MANAGEMENT

Data was securely stored in accordance with good standards of research control and was used solely for the purpose of this investigation. This data was in the possession of, and controlled by, the researcher during data analysis and drafting the report. Thereafter, it will be archived by the research supervisor at the University of KwaZulu-Natal, under lock and key at the School of Nursing, for a period of five years. Thereafter, the data will be destroyed through shredding and deleted from the computer's hard disc as per the university's research policy. The analysed data has been saved in computer files protected by an encryption known only by the researcher.

1.17 STRUCTURE OF THE THESIS

This table presents all the steps and cycles of the study, including an overview of the chapters of this thesis.

Table 1.4: Structure of the thesis

SECTION	RESEARCH OVERVIEW	RESEARCH APPROACH	COMMENTS
Chapter One Cycle One	Overview of the study	Relevant literature provides a comprehensive background and problem statement for the study. The purpose and research objectives and questions are indicated, as well as the research methodology.	This serves as an overview to the study being carried out.
Chapter Two Cycle One	Establish the need for developing an intervention for managing professional isolation among ENs working in low-resource environments (Objective 1).	Conducted a scoping review guided by the Joanna Briggs Institute Methodology for Scoping Reviews (2020), as well as with FGDs. The research team was established.	Manuscript One (published in 2021)
Chapter Three Cycle Two	Explore the perceptions of professional isolation among ENs working in low-resource environments (Objective 2)	A descriptive qualitative approach using qualitative content analysis was carried out, assisted by the research team. Data were collected from individual interviews (November 2019 – June 2021).	Manuscript Two (submitted to the Journal of Emergency Nursing and under review) Manuscript Four (submitted to the Professional Nursing Today- a professional journal)
Chapter Four Cycle Three	Develop, implement and evaluate an intervention for managing professional isolation among ENs working in low-resource environments (Objective 3 & 4).	The Digital Community of Practice was developed (in collaboration with the research team) as an intervention to address professional isolation.	Manuscript Three (submitted to the International Journal of Africa Nursing Sciences)
Chapter Five Cycle Four	Synthesis, conclusions, recommendations, summary and limitations		

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CHAPTER TWO: ESTABLISHING THE NEED (CYCLE ONE)

Kutoane, M., Brysiewicz, P. & Scott, T. 2021. Interventions for managing professional isolation among health professionals in low resource environments: A scoping review. Health Science Reports, 4, e361. Doi: 10.1002/hsr2.361

2.1 MANUSCRIPT ONE: SUB-STUDY ONE

This chapter presents Manuscript One (2.1), including its synopsis (2.2), and the report from the focus group discussions (2.3). This cycle of the research was concerned with establishing the need for the research and this was done by conducting a scoping review and five focus group discussions with nurses working in the emergency departments.

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REVIEW

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Interventions for managing professional isolation among health professionals in low resource environments: A scoping review

Mahlomola Kutoane[1,2] | Petra Brysiewicz[1,2] | Tricia Scott[3]

[1]School of Nursing & Public Health, College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa

[2]School of Nursing & Public Health, College of Health Sciences, University of KwaZulu-Natal, Howard College, Durban, South Africa

[3]Healthcare Research and Education Consultant, London, Hertfordshire, UK

Correspondence
Mahlomola Kutoane, School of Nursing & Public Health, College of Health Sciences, University of KwaZulu-Natal, Durban, South Africa.
Email: kutoanes@gmail.com

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Abstract

Background: Professional isolation is viewed as a sense of isolation from ones professional peers and this has contributed to compromised quality of health service delivery as well as quality of life for health professionals in low resource environments. Professional isolation is a multidimensional concept which may be either geographic, social, and/or ideological. However, professional isolation in low resource environments remains poorly defined with a limited body of research focusing on health professionals.

Aim: To map and examine available literature on interventions for managing professional isolation among health professionals in low resource environments.

Methods: We conducted a scoping review of the published and grey literature to examine the extent, range and nature of existing research studies relevant to professional isolation in health professionals.

Results: Of the 10 articles retrieved, 70% were conducted in high income countries where the context may be different if applied to other low-income settings such as in Africa. Only 20% of the studies focused specifically on nurses or the nursing profession and only 10% were conducted on the African continent.

Conclusion: There is insufficient research on the definition and origins of professional isolation among health professionals including the interventions that can be employed. Rural, remote and/or isolated settings significantly predispose health professionals to professional isolation but remain poorly defined. Additional research is recommended to explore and determine the interventions for managing professional isolation among health professionals in low resource environments.

KEYWORDS
health professionals, interventions for managing, low resource environments, low resource settings, professional isolation, professional loneliness

1 | INTRODUCTION

Social relationships exist between two or more people who influence each other's thoughts, feelings and or behavior, sharing common interests and reasons for being together as a social group. Professional isolation refers to a state when a professional individual experiences a sense of isolation from his/her professional peers, while lacking mentoring and opportunities for professional interaction, collaboration

and development[1] and is a multidimensional concept which may be either geographic, social, and/or ideological.[2,3] Orhan et al[3] attest that professional isolation originates from physical separation that is, when individual professionals are not co-located, thus leading to limited coordination and collaboration. However, geographic distance does not necessarily lead to complete isolation. Frey III[4] describes professional isolation as professional loneliness, and is mainly created by the current fragmentation of the workspaces and job descriptions particularly of health professionals such as physicians. Scott and Brysiewicz[5] further support this by suggesting that professional isolation among health professionals particularly in low resource environments may result from geographical and professional remoteness as well as suboptimal resources of educational opportunities and information technology. The term low resource environment is used for environments with limited material and financial means. In the health care environment this refers to limited access to medication, equipment and supplies, under-developed infrastructure and lack of trained personnel. Low resource environments are mostly found in countries defined by the World Bank as Low Middle Income Countries .[6]

The negative effects of professional isolation in low resource environments have chronically contributed to the scarcity of the health care workforce, the quality of health service delivery and compromised quality of life for health care workers.[7,8] Cacioppo and Cacioppo[9] and Frey III[4] assert that professional isolation predisposes health professionals to a variety of health challenges including risk of personal and professional well-being, which threatens the quality of clinical care especially in the low resource environments. Professional isolation in conjunction with insufficient exposure to specialist areas of practice, has the ability to create a culture of uncertainty particularly among health professionals and in some instances may lead to lack of confidence which is hazardous to patients' health.[10]

Despite a significant body of research on professional isolation and its effects, very little of this work specifically focuses on health professionals particularly in low resource environments.[11,12] Subsequently, this scoping review sets out to map and examine available literature on interventions for managing professional isolation among health professionals in low resource environments.

2 | METHODS

Using an empirical scientific approach, this scoping review was guided by the methodological framework proposed by Peters et al,[13] with amendments made to this framework by Aromataris and Munn.[14]

2.1 | Research questions

- What interventions for managing professional isolation for health professionals in the low resource environment are being addressed in the literature?
- Which target populations are addressed in the literature regarding professional isolation for these health professionals?
- What are the key gaps in the literature relating to professional isolation for health professionals in low resource environments?

2.2 | Data sources and search strategy

A search strategy, developed in consultation with a specialist librarian, was conducted initially in September 2018 to establish search terms. Then it was revisited in February 2019 to identify published and unpublished research studies relevant to professional isolation in health professionals. The search terms listed in Table 1 were applied to the following databases: EBSCOHOST, Cochrane Library, EMBASE (via Ovid), PsycINFO, CINAHL, MEDLINE and PubMed. ProQuest Dissertations and theses database as well as Sabinet WorldCat Dissertations were searched for potentially relevant literature. To discover relevant grey (nonindexed) literature, the same keywords as the indexed databases were used to search in ResearchGate, Google and Google scholar. A comprehensive search was for relevant literature within websites of specific global health organizations, institutions and agencies with relevance to health professionals working in low resource environments, professional isolation, as well as interventions for managing professional isolation. Reference lists of cited articles were hand searched to identify additional articles for inclusion. Searches were limited by language and year of publication (from January 2009 to February 2019) to identify contemporary literature.

2.3 | Inclusion criteria

This scoping review followed the Population, Content and Context format recommended by The Joanna Briggs Institute.[15]

- **Population**: Health professionals - Health professionals, to include doctors, nurses and all other allied health professionals such as pharmacists, physiotherapists and prehospital staff.
- **Content**: Any intervention, strategy or mechanism for the management of professional isolation and professional loneliness.
- **Context**: The context of this scoping review was the low resource environment, a setting where the capability to provide healthcare is limited to basic care resources, including equipment and staff. A rural, nonmetropolitan area.

2.4 | Study selection

Following the execution of the search strategy, the identified records were collated into EndNote Reference Manager to aid de-duplication. The final set of records were screened independently by two reviewers (MK and PB) in two stages. The first level screening involved looking at the titles and abstracts to determine each article's eligibility for full-text screening based on predetermined inclusion criteria. At this level of screening there were no disagreements to warrant the involvement of a third reviewer. The second level

TABLE 1 Search terms

Content	Problem	Population	Context
"Interventions" (OR "mechanism" OR "strategies")	"Professional isolation" (OR "isolation" OR "loneliness")	Health personnel" (OR "allied health professionals" OR "nurse" OR "medical staff" OR "doctor")	"Developing country" (OR "low resource setting" OR "low-income country" OR "resource constrained setting"

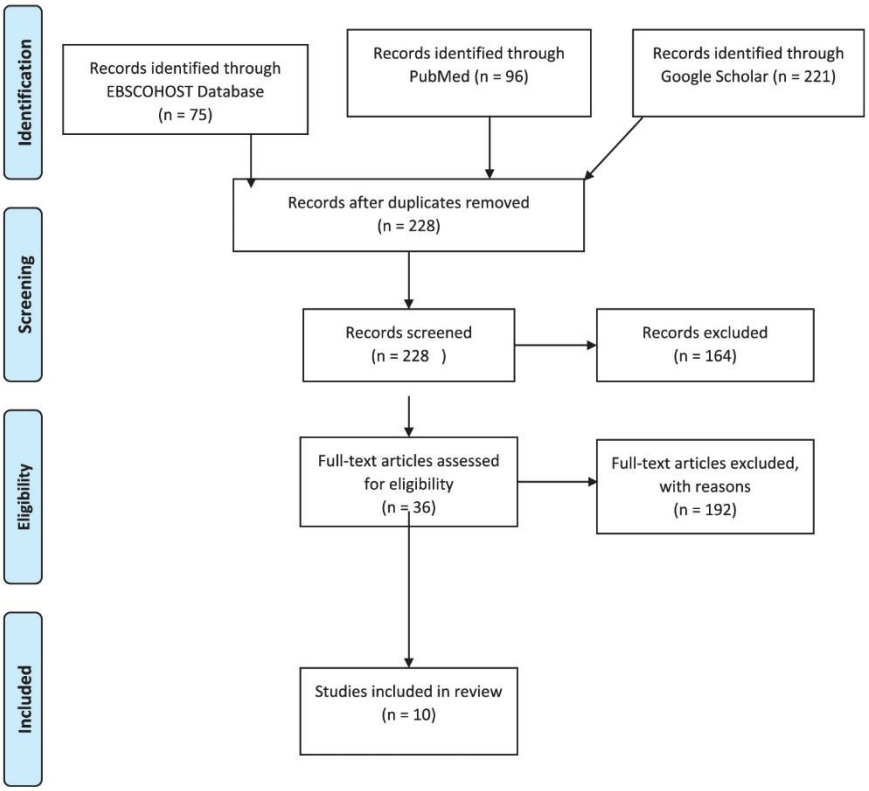


FIGURE 1 PRISMA Diagram of screening process and outcome

screening involved full-text screening of the individual articles. Where there were disagreements the two reviewers discussed and made a conclusion, again, there were no disagreements to warrant the involvement of the third reviewer.

2.5 | Data charting and extraction

Data of the included studies were captured independently by the first reviewer (MK) then sent to the second reviewer (PB) for verification using the priori data extraction form Table 2. The 12-item Template for Intervention Description and Replication (TIDieR) checklist, which is recommended by Campbell et al[16] was utilized to develop the priori data extraction form in this review. The information recorded included are general study features (author(s), year of publication, country where the study was conducted), intervention characteristics (name, type or aim of the intervention, instruments used or mechanism of delivery of the intervention and population), limitations (limitations of the intervention and limitations of the study) and lastly the recommendations of the study. Disagreements that emerged during data

TABLE 2 Included studies

General study features			Intervention characteristics			Limitations		Recommendations
Author(s)	Year	Country (context)	Name/type aim of intervention	Instruments used/mechanism of delivery	Population (sample size)	Intervention	Study	
Barnett, SR	2014	Australia: Southern NSW, Australia (rural and regional areas)	VCoPs for knowledge sharing and overcoming the barriers of time and geography	Telephone, Internet and social media	Physicians – rural and urban (n = 131)	The intervention has not been evaluated	The study focused solely on the physicians both in the rural and setting. The sample size was too small for generalization.	Demonstrates that there is a need to determine the extent to which VCoPs impact on knowledge sharing and overcoming professional isolation, and how this translates, if at all, into measurable outcomes.
Ducat, et al	2016	Australia – remote and rural	AHRRTS program for capability-based clinical education, training and professional support to the allied health workforce in non-metropolitan areas	Supervision	Allied health professions (n = 42)	The efficacy of supervision may be subject to use of technology, time and geographical distance between the supervisor and supervisee.	Methodology does not clearly state the mechanism or mode of delivery on how supervision was conducted.	Shows there is a gap in the current literature on parameters of effective supervision in rural and remote contexts.
Gagnon et al	2014	Canada – Rural	Tele-assistance service for improving nursing practices and nurses' retention in peripheral areas of Canada	Telehealth	Nurse (n = 4000)	The intervention was not evaluated	The methodology is not clearly explained.	To consider some adverse effects such as work overload associated with the deployment of tele-assistance service.
Gulzar, et al	2013	Pakistan – Remote	EHealth for improving health services in Gilgit-Baltistan.	Information and communication technology	Nurses (n = 9)	Intervention not evaluated	Small scale study	To consider continuous training on eHealth.
Koppe, et al	2016	Australia - rural	Online Balint group for knowledge sharing and mentorship for general practitioners and general practitioner registrars	Web 2.0 technologies	General practitioners (n = 28)	The intervention has not been evaluated	This was a pilot study which had a small sample size therefore results may not be generalized	There is a need for implementing broadband infrastructure for online Balint group participation for rural participants
Kumar et al	2016	Australia - rural	Allied Health Professional Enhancement Program for Allied health professionals practicing in rural and remote areas	Not clear	Allied health Professionals (n = 4)	The intervention has not been evaluated	The sample size was too small for generalization.	Further studies are warranted to investigate the direct benefits of rural placements program on patient care

TABLE 2 (Continued)

General study features			Intervention characteristics			Limitations		Recommendations
Author(s)	Year	Country (context)	Name/type aim of intervention	Instruments used/mechanism of delivery	Population (sample size)	Intervention	Study	
Mehrotra, et al	2018	India – remote	NIMHANS ECHO blended tele-mentoring model on Integrated Mental Health and Addiction for knowledge sharing and capacity building for counsellors	Computers, tablets and toll-free phone numbers	Clinical psychologists and psychiatric social workers (n = 12)	The intervention has not been evaluated	The methodology of the study is not clearly explained.	Patients' satisfaction about the program needs to be evaluated.
Mwape et al	2018	Zambia	WhatsApp Messaging for Sharing Best Practices and Prevention of Professional Isolation for HIV Nurse Practitioners	Smartphones	HIV Nurse Practitioners (n = 32)	The intervention has not been evaluated	The purpose of the study is not clearly outlined	There is a need to evaluate the use of WhatsApp as a tool for sharing best practices and keeping abreast of the new trends care provision.
Paul et al	2016	United States of America – Underserved areas	Teleconsultation projects for value-added healthcare delivery through information and communications technologies	Information and communication technology	Health clinicians, administrators and IT professionals (n = 14)	The intervention has not been evaluated	The sample size is too small for generalization	A better understanding of the social processes and power dynamics involved in teleconsultation projects might also be needed
Straume and Shaw	2010	Norway	Medical internship and in-service training model for general practitioners' professional development	Face to face facilitation	Medical graduates (n = 267)	The intervention has not been evaluated	The research methods for this study are not clearly outlined.	There has to be consideration of the local context to implement interventions to improve rural retention and recruitment.

Abbreviations: AHRRTS, Allied Health Rural and Remote Training and Support program; NIMHANS ECHO, National Institute of Mental Health and Neuro Sciences; VCoPs, Virtual Communities of Practice.

extraction were resolved through discussion by the two reviewers (MK and PB).

3 | RESULTS

3.1 | Search results

Following a comprehensive search a total of 392 potential studies were identified. Duplicate titles (n = 164) were removed, after which 228 titles/abstracts were screened. Forty titles/abstracts were potentially eligible with 192 records excluded with reasons such as not meeting the inclusion criteria, wrong population or setting, no intervention or no professional isolation. Ten full-text articles were found potentially eligible for review. Figure 1 (PRISMA Chart) provides an illustration of the screening process and outcome.

3.2 | General features of the selected studies

All 10 articles selected for review were written in English and published from 2010 to 2018. The geographical distribution of the publications was primarily from the low resource settings of the developed countries 70% (n = 7) with Australia 40% (n = 4) being the main contributor, Canada 10% (n = 1), Norway 10% (n = 1) and United States 10% (n = 1). Only 30% (n = 3) of the studies was from the developing countries such as India, Pakistan and Zambia with each country contributing 10% (n = 1), as Figure 2 illustrates. All reviewed articles were published as scientific journal articles which focused on Allied Health Professionals 40% (n = 4) and physicians or doctors 30% (n = 3), respectively, only 20% (n = 2) focused on nurses.

3.3 | Characteristics of the interventions

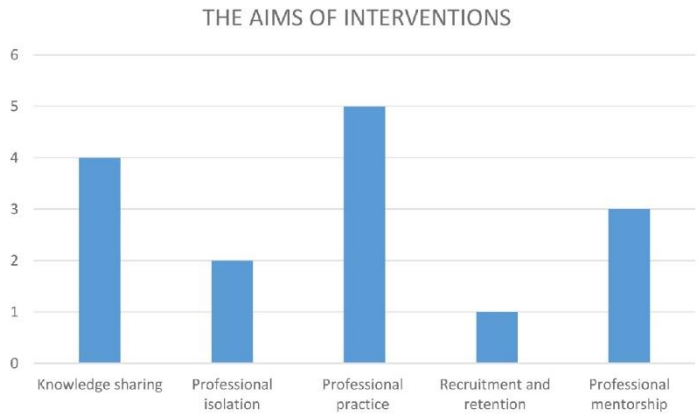
Interventions were analysed using a checklist with five (5) criteria according to the Tidier grid. Table 2 illustrates how the interventions were described in each selected article.

3.3.1 | Aims and name/type of intervention

None of the studies included in the review focused on intervention(s) specifically aimed to manage professional isolation. The findings reveal that the interventions employed were primarily; Supervision and mentorship 40% (n = 4), Virtual Community of Practice 30% (n = 3) as well as Training and Education 10% (n = 1). The mechanisms of delivery were predominantly through use of technology such as information and communication technology 60% (n = 6), telephone 30% (n = 3), social media, supervision, face to face 30% each contributing 10% (n = 1). In another publication (10%, n = 1), the instrument or mechanism of delivery was not indicated. According to Figure 3, 50% (n = 5) of the interventions were aimed at improving professional practice, improving knowledge sharing 40% (n = 4), improving

FIGURE 2 Publications by location. Australia 4, Canada 1, India 1, Norway 1, Pakistan 1, United States 1 and Zambia 1

FIGURE 3 Aims of the interventions



professional mentorship 30% (n = 3), addressing professional isolation 20% (n = 2) and improving recruitment and retention 10% (n = 1).

3.4 | Key gaps in the literature around professional isolation

3.4.1 | Limitations of the studies

Although all the interventions from the reviewed articles showed positive impact for the intended challenge, most of them 80% have not been evaluated, and were not focused on professional isolation. Of all the studies, 70% of the interventions were developed to address different issues at the same time, for example, "A framework for enhancing continuing medical education, addressing professional isolation as well as improving recruitment and retention for rural physicians," this leaves much confusion as to the impact of each intervention on a specific challenge, particularly professional isolation.

3.4.2 | Limitations of the interventions

None of the selected studies aimed to explore professional isolation, neither developing nor identifying interventions for managing professional isolation. Most (70%) of the studies were conducted in the rural and remote settings of the developed countries where the context may be different if applied to other settings such as in Africa. Only 20% of the studies focused specifically on nurses or the nursing profession and only 10% were conducted in the African continent.

3.4.3 | Recommendations

None of the studies included in the review recommended any mechanism or strategy for managing professional isolation or further studies which will focus on this area. However, the majority (80%) reported that the interventions employed to address other issues do address professional isolation.

4 | DISCUSSION

This review summarizes the available literature on interventions for managing professional isolation among health professionals in low resource environments. The literature about professional isolation remains limited, mainly reports, journal articles and thesis dissertations. The majority of the literature is focused on the interventions for other challenges such as improving knowledge sharing, continuous medical education/continuous professional development, improving quality of health care, improving professional networks as well as improving recruitment and retention in low resource environments. In the process, professional isolation is also reduced. This is consistent with the findings of a study by Mbemba et al[17] which demonstrated that telehealth had a positive, but largely indirect influence on health care professional recruitment and retention while also diminishing the feeling of isolation. Despite extensive searches, only 10 papers addressing the topic could be identified and such papers were mainly from rural areas of Australia, Canada, and the United States. The literature specifically focusing on exploring professional isolation as a concept or the mechanisms in which it can be addressed is lacking.

4.1 | Interventions for managing professional isolation

All the included studies highlighted interventions and/or mechanisms which are specific to rural and remote contexts that relate to successful outcomes to the health professionals, patients and services. The majority (70%) of these interventions were discovered and applied in

the context of developed countries where rurality and remoteness may be incomparable to the African context.

The findings of all reviewed articles demonstrate that rural, remote and/or isolated settings significantly predispose health professionals to professional isolation. However, none of these studies explored rurality as a concept. Lack of a clear definition of the concept "rural" leaves a significant gap in the existing literature.

The reviewed literature identified that professional isolation can be addressed by these interventions and recommends the use of information and communication technology to best implement these interventions in order to overcome the barriers of time and geography (McLoughlin et al).[18] However, the use of this technology may be affected by connectivity challenges, power supply and may also require support from the governments and professional organizations. This piece of information is lacking in the literature regarding how these challenges may have impacted on the implementation of these interventions in low resource environments.

4.2 | The key gaps in the literature around professional isolation

The literature that focused mainly on professional isolation; for example Barnett et al[19] indicated various factors that may lead to professional isolation such as barriers to knowledge sharing, the structure of general practice and geographic barriers. Ducat et al[20] demonstrated that professional isolation is a deterrent of health care delivery in the rural and remote areas. Mwape et al[11] the only study conducted in Africa in this review, determined the use of WhatsApp messaging to share best practice and prevention of professional isolation. However, no studies included in the review either defined or explored professional isolation and therefore the interventions or strategies to address the same. This is a major gap identified from this body of literature.

The earliest time professional isolation was mentioned in the literature particularly in relation to the health professionals was by Long and Weinert[21] who sought to validate key concepts to better understand, rural health needs and nursing practice. From the qualitative data, professional isolation was ranked third among the emerging themes, though no definition of professional isolation was declared. However, Orhan et al[3] defined professional isolation as; "... lack of satisfying friendship relationships or a lack of access to social networks in workplace". In the current literature, professional isolation is termed as either workplace isolation (Bartel et al),[22] workplace loneliness (Ozcelik & Barsade)[23] or professional loneliness.[4] The reviewed literature also expressed professional isolation in social and geographic contexts; social (feeling unsupported, lacking opportunity for learning, access to continuous education/development, and sense of loneliness) and geographic, (rural areas, remote settings/areas, isolated settings, and sparsely populated areas) (McLoughlin et al).[18] Despite dearth of the current literature suggesting that professional isolation is a multidimensional concept, there is no evidence of attention given to the subdimensions of this concept for a better understanding in different settings such as the experience of isolation amongst nurses, or specifically the emergency nurses who are socially marginalized due to their specialisation. Furthermore, the literature on the concept, factors that influence it, how it influences performance as well as the mechanisms that can employed to manage it, is lacking.

The literature also demonstrates a correlation between professional isolation and social interaction through group dynamics, whether in virtual or traditional settings. However, there is limited evidence about the impacts of virtual experiences of health professionals working in marginalized settings and at an individual level.

5 | LIMITATIONS

This scoping review used a rigorous, methodologically sound and transparent process to identify and map the literature guided by a recognized scoping review methodology. To ensure a broad search of the expected literature on professional isolation, the search strategy included three electronic databases, hand-searching of relevant journals and grey literature sources. Two independent reviewers examined each title, abstract, and full-text.

Although every effort was made to ensure that a comprehensive search was conducted, it is possible that some articles may have been missed. Further, literature included was only in the English language so it is possible that items may have been published in other languages yet not represented in the findings.

6 | CONCLUSION

There is a substantial evidence that depth of professional isolation mostly in low resource environments is limited and where it exists, it is not clearly defined. Furthermore, the quality of evidence supporting the overall effect of the suggested mechanisms is not specific to professional isolation. Given the background of the complexities surrounding professional isolation such as the existing differences in rurality and remoteness as well as imprecise definitions, further research associated with the relevant context is needed on interventions to address professional isolation.

CONFLICT OF INTEREST

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

AUTHOR CONTRIBUTIONS

Conceptualization: Mahlomola Kutoane, Petra Brysiewicz, Tricia Scott
Data Curation: Mahlomola Kutoane, Petra Brysiewicz
Formal Analysis: Mahlomola Kutoane, Petra Brysiewicz, Tricia Scott
Writing – Original Draft: Mahlomola Kutoane
Writing – Review & Editing: Mahlomola Kutoane, Petra Brysiewicz, Tricia Scott

All authors have read and approved the final version of this manuscript.

Mahlomola Kutoane, Petra Brysiewicz and Tricia Scott had full access to all of the data in this study and take complete responsibility for integrity of the data and accuracy of the data analysis.

The authors confirm that the data supporting the findings of this study are available within the article and/or its supplementary materials.

ORCID

Mahlomola Kutoane https://orcid.org/0000-0001-7724-3543
Petra Brysiewicz https://orcid.org/0000-0001-6258-1603

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2.2 SYNOPSIS OF MANUSCRIPT ONE

This article was part of Cycle One and it addressed Objective One: "to establish the need for developing an intervention for managing professional isolation among emergency nurses working in low-resource environments." Because he was conducting action research, the researcher ensured collaboration and effective change by hearing from practitioners, hoping to establish the need for the research. This was achieved by conducting a scoping review and focus group discussions. This article provided an overview of the scoping review on published and grey literature, examining the extent, range and nature of existing research studies relevant to professional isolation interventions in all health professionals. As a result of the limited literature initially found on professional isolation among nurses, and nursing in general, the research team decided that the scoping review should be extended to incorporate all health professionals.

By examining the available literature on professional isolation, the manuscript served to inform and refine the research objectives. This pragmatic approach (Kelly & Cordeiro, 2020) helped the researcher to identify gaps in the literature about the research problem under investigation. The results yielded extremely limited literature on nursing: only 20% of included studies involved nurses; 70% were carried out in high-income countries; while only 10% were conducted in Africa, indicating that professional isolation is an under-researched subject. There is thus a need for such studies in Africa.

This manuscript provided baseline data about professional isolation and assisted in establishing the need for additional research on professional isolation, especially amongst nurses. Most interventions were conducted in the low-resource environments of developed countries, thereby indicating the need for interventional studies in both resource-constrained environments and in settings that have unique subcultures, such as the EDs. Studies also failed to consider rural contexts to allow for transferability of the interventions. Nor did they evaluate the interventions. Although there were few interventions that have been cited in the literature, they offered a better idea of what interventions had been conducted, their feasibility and effectiveness. The results of the review demonstrated the need for additional research on professional isolation, especially amongst nurses.

2.3 FOCUS GROUP DISCUSSIONS REPORT: SUB-STUDY TWO

As this study was part of a larger collaborative action research study which is grounded in active collaboration with the participants, the researcher needed to ascertain nurses' experiences and descriptions of professional isolation. After obtaining permission from the

hospital managers, the researcher conducted FGDs, to establish if there was a need, and to gain support, for the proposed study.

2.3.1 Participants and setting

The study was conducted in the EDs of the five selected hospitals (two state-funded, one run by the Christian Health Association of Lesotho, and one public-private) in Lesotho. These settings provide emergency care services to communities in the rural and urban areas of the northern and central regions of Lesotho. The sample was made up of health professionals who were working within the EDs and were registered with the Lesotho Nursing Council as registered nurses with a diploma and/or degree in nursing (none of the participants had any formal training in emergency nursing). The five hospitals were chosen as the research settings on the basis that they represent accurately the population diversity in Lesotho in terms of socioeconomic status, political status and cultural beliefs.

2.3.2 Data collection process

After the permissions were granted by the 'gatekeepers' (hospital managers), five FGDs were conducted between November 2019 and March 2020. The participants were recruited using purposive sampling methods, based on their willingness to take part in the study. The tentative plan for the study was presented to participants, who were also invited to become members of the research team. Their significant role in ensuring active collaboration was emphasised. Informed consent was obtained from all participants, including consent for audio-recording of the focus group discussions. The participants were assured of the confidentiality of all information shared, and that they were at liberty to withdraw from the discussion forum at any stage without fear of reprisal. The main questions were: "As emergency nurses, what challenges do you experience in your departments? and "Is professional isolation one of the challenges in your department?" These two questions provided the primary focus for discussion between the researcher and the participants. The duration of each FGD was between 40 minutes and one hour. All interviews were audio-recorded and transcribed by the researcher, along with field notes.

Despite the detailed information provided to participants about the study, when conducting the FGDs with the nurses, it was immediately observed that they had limited understanding of either the concept of emergency nursing or professional isolation. Understanding that action research is emancipatory in nature, the researcher spent much time educating the nurses, by

conducting an emergency nursing workshop (Appendix S), so that they could understand the concepts. In this workshop, the researcher presented aspects of emergency nursing, covering the roles of ENs and their scope of practice, as well as the challenges facing ENs in low-resourced, environments particularly in Africa. This way, a pragmatic approach helped establish that nurses needed to understand their practice to enable changes in that practice. The exploration of the opinions of the participants about their professional isolation helped them to become aware of their challenges (Holmes, 2022) and served as the initial steps towards social justice.

2.3.3 Findings from the FGDs

The results of this qualitative study are based on FGDs with 25 registered nurses working in the EDs of five selected hospitals in Lesotho. The sample comprised 10 males and 15 females, aged between 23 years and 45 years of age (mean age of 34 years). The participants' experience in EDs ranged from six months to 21 years and they had completed diplomas (n = 12), or bachelor's degrees (n = 8) and postgraduate studies (n = 5) in nursing.

An inductive qualitative content analysis method (Erlingsson & Brysiewicz, 2017; Graneheim & Lundman, 2004) revealed two main categories, namely forms of isolation and working conditions.

2.3.3.1 Form of isolation

Participants revealed that there are forms of isolation which may be contributing factors to their professional isolation, such as physical isolation (working alone in the department) or being emotionally isolated (when there is no recognition from superiors).

Participants described how their work environments were isolating in nature, due to a range of factors, including physically working alone; or being the only specialist in the department; or poor rostering practices. One participant explained:

> *Partly, professional isolation is the course of the challenges, you turn to be working alone,* [and] *that on its own, makes you feel like you do not have anybody to turn when that is a problem* [P14].

The participants commented that, because emergency nursing is new speciality in the country, they were not recognized by their superiors and colleagues, leading to emotional isolation and

low performance at work. Expressing the frustration of not being recognised, one participant said:

> *The other challenge that we experience is lack of recognition by the management and other colleagues. This, on its own, has a potential of affecting your morale – hence poor performance as a professional* [P10].

Another participant suggested that the lack of recognition might be a result of the disparity between training and clinical requirements; therefore, a collaborative market analysis by the training institutions and employers would be necessary.

> *It's like there can be an opportunity for all stakeholders to understand what the schools produce, and thereby link our qualifications and positions* [created] *by the employer* [P5].

2.3.3.2 Working conditions

Participants explained that various working conditions, such as the misallocation of human resources, the lack of inter-professional collaboration, and limited training opportunities contributed to their professional isolation.

One participant said:

> *One other* [thing] *I observed is working conditions or misallocation of the human resources where you find that this person, for instance, is interested emergency care, but this person has been moved to medical ward where they nurse chronic cases, that sometimes destroys the person's* [and] *affect his performance* [P16].

The participants went further to state that their challenges were not only limited to a lack of training, but also to little information sharing or interprofessional collaboration, where they can have common ground for professional development. One participant said:

> *It is not only training, but it is information exchange, to find common ground where we interlink, so that professional sharing could occur. I do not know what they call it - "interprofessional collaboration", but it's something like that* [5].

2.3.4 Discussion of the findings

This report summarizes the findings of the preliminary exploration of the experiences and descriptions of professional isolation of nurses working in the EDs. The report highlights two main factors related to professional isolation among nurses, which frame this discussion.

2.3.4.1 Form of isolation

This report provides preliminary evidence that professional isolation is a multifaceted concept with different forms, such as physical isolation and emotional isolation. This finding aligns with the current literature that professional isolation is a multi-dimensional concept which includes lack of social support; lack of social interaction; lack of learning opportunities; lack of developmental opportunities; and actual physical isolation (Sahai, Ciby & Kahwaji, 2020). Sucharitha, Karthik, Karthick *et al.* (2020) described professional isolation as a state in which professionals lack a sense of belonging, and a lack of companionship with peers and colleagues in the form of mutually beneficial interactions. Hall (2020) affirmed that, while isolation may often be used interchangeably with loneliness, in essence they are not the same. Furthermore, (Peng *et al.*, 2022) emphasized that, unlike personal feelings of general social isolation or loneliness, professional isolation is directly associated with the work environment and may occur because of constrained workplace social interactions. This provided some baseline understanding of the professional isolation concept among the participants.

2.3.4.2 Working conditions

The participants reported a series of interacting working conditions as factors related to their professional isolation, including the misallocation of human resources, the lack of inter-professional collaboration and limited training opportunities. There is growing body of research linking professional isolation to various working conditions. Sahai, Ciby & Kahwaji (2020) conducted a systematic review involving 27 studies of workplace isolation. They showed that role overload and role conflict; a lack of social support; and a lack of participation in formal training impacts on workplace isolation. In contrast, perceived positive work environments such as working in groups; equal opportunity training; a good ethical climate; as well as transformational leadership and interpersonal trust, reduce professional isolation (Peng *et al.*, 2022; Adams, Lazarsfeld-Jensen & Francis, 2019).

Although this report was just an initial exploration of professional isolation among nurses, the data confirmed this to be an important and worthwhile study. Therefore, there is a need to

explore the perceptions of professional isolation among emergency nurses and to identify possible interventions that could be used to address it.

Significant observations from the FGDs

- Holding FGDs with nurses working in each of the EDs provided a good opportunity to draw on their experiences and descriptions regarding their practice challenges.
- Nurses did not understand either the concept of emergency nursing, or professional isolation. However, the preliminary results showed that there are different forms of isolation.
- Working conditions were directly associated with the occurrence of professional isolation.
- There is a need to explore further the perceptions of professional isolation, particularly among nurses working in low-resource environments.

2.4 CONCLUSION

Action research aiming to develop an intervention for managing professional isolation was initiated, thus bringing change in practice through active collaboration between the researcher and the participants. The preliminary results from the scoping review and the FGDs confirmed the need to explore the perceptions of professional isolation, and to determine and develop interventions for managing this challenge among emergency nurses working in low-resource environments. The research team was also formed from the willing participants who volunteered to be members of the team.

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CHAPTER THREE: EXPLORING PROFESSIONAL ISOLATION (CYCLE TWO)

Kutoane, M., Brysiewicz, P. and Scott, T. "Feeling like an Island": Perceptions of Professional Isolation among Emergency Nurses (*Accepted for publication by the Journal of Emergency Nursing*)

3.1 MANUSCRIPT TWO: SUB-STUDY THREE

This chapter consists of Manuscript Two (3.1) and a synopsis of the manuscript (3.2). This cycle of the research was concerned with exploring the perceptions of professional isolation among emergency nurses by conducting an explorative-descriptive qualitative study using individual interviews.

“Feeling like an Island”: Perceptions of Professional Isolation among Emergency Nurses

Contribution to Emergency Nursing Practice

Professional isolation is a multidimensional concept expressed as a deficiency in one’s network of social relations at work. It is claimed to have a potential for negative implications on nurses in their specialised departments, especially those that are working in the emergency departments of the low-resource environments.

This paper provides qualitative data describing the perceptions of professional isolation among emergency nurses working in a low-resource environment, it offers an explanation of the mechanisms that could be used as an intervention for managing professional isolation.

This paper further sustains the impression that communities of practice may have a significant role in addressing professional isolation among emergency nurses working in low-resource environments.

Abstract

Introduction

Professional isolation, feelings of being isolated from one's professional peers, lacking mentoring and opportunities for professional interaction, collaboration and development is a challenge for workers across the labour market. The notion of professional isolation is particularly prevalent in the low-resource healthcare settings and is common among emergency nurses.

Methods

This study explored the perceptions of professional isolation among emergency nurses working in a low-resource environment using individual interview from 13 participants in five settings in Lesotho.

Results

The data were analysed using qualitative content analysis and revealed an overarching theme of "feeling like an island", containing three categories namely; lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness.

Conclusion

This study suggests that lack of interprofessional collaboration and consultation, skills mismatch and enforced loneliness have influence feelings of professional isolation among emergency nurses working in low-resource environments. The findings of this research lend support to the idea that communities of practice may have a potential impact in addressing professional isolation.

Keywords: *Low-resource Environments, Low-resource settings, Professional Isolation, emergency nurses, lack of interprofessional collaboration and consultation, skills-mismatch, enforced loneliness.*

1. Introduction

The emergency department (ED) is characterised by unpredictable arrivals of patients, uncontrolled and unpredictable workload, is time sensitive, with highly stressful decisions often being made under intense pressure and interventions being required with sometimes incomplete information about the patient [1]. These circumstances render the ED a complex, challenging and dynamic environment as it involves interacting and interdependent

simultaneous multiple processes, thereby demanding highly skilled personnel and collaborative decision making [2]. This unique environment can potentially expose the employees to feelings of professional isolation due to limited interaction [3,4].

Professional isolation is defined by Services for Australian Rural and Remote Allied Health (2018) as a sense of isolation from professional peers, lacking mentoring and opportunities for professional interaction, collaboration and development. It is a multidimensional concept that may be either geographic (a distance between), social (a lack of contact) or ideological (social outcast) and has the potential to cause a series of adverse effects in the workplace [5,6]. A cross-sectional survey conducted in Turkey with a sample of 138 nurses revealed that the impact of professional isolation is not only confined to job performance and job satisfaction but has potential to impact on individual's health Amarat, et al. [7]. According to Murthy [8] and Williams, et al. [9], professional isolation is an emergent dynamic health epidemic with significant consequences including severe physical health problems comparable to smoking 15 cigarettes a day.

Professional isolation has primarily been studied in developed countries such as Australia, the United Kingdom, and the United States of America [5,10], however [11] suggests that professional isolation is more common among health professionals deployed in low-resource settings. This is linked to marginalised access to clinical information and decision support, varied availability of specialty consultation, and hindered interaction with colleagues which occurs in such settings[12]. Nurses, being the largest and possibly the most valuable resource of the health care industry[13], are reported to be the most common group of health professionals to experience professional isolation[7] [14]. Nurses, particularly those working in low-resource environments, might also be more likely to work alone with fewer opportunities for inter-professional contact and collaboration [15]. Moreover, Sekhon and Srivastava [16] affirm that working in the EDs of a low resource environment can potentially expose nurses to feelings of professional isolation. However, Kutoane, et al. [17] suggest that mentorship through communities of practice, and continuous professional development programs could provide a mechanism to reduce or manage professional isolation.

Emergency nursing is a unique and evolving specialty in sub-Saharan Africa [18], supporting the care of individuals of all ages with perceived or actual physical or emotional alterations of health that are undiagnosed or require further interventions, unstable, often presenting unexpectedly [19]. These interventions are common to many nursing specialties, the key

difference being that emergency nurses (ENs) integrate knowledge, skills, abilities, and judgement to appropriately manage patients when a diagnosis has not yet been made, nor the cause of the problem known [20]. Additionally, the complexity of the specialty requires ENs to exercise a broader range of complex clinical skill sets to engage in constant interaction with other colleagues and intensive mentorship from supervisors to function effectively [2]. As Sahai, et al. [21] indicated, to do otherwise risks professional isolation and the mere nature of specific professions e.g., teachers, auditors, nurses etc. means that working in marginalised groups predispose employees to professional isolation.

In Sub-Saharan Africa, many healthcare challenges exist, including immense disease burdens and fragile health care systems exacerbated by extreme poverty, underdevelopment, conflict, and political instabilities[22]. Furthermore, the region is characterized by inadequate distribution of resources, communication deficiencies including transportation and general infrastructure deficits including lack of a comprehensive approach to emergency care[1]. According to Dreher-Hummel, et al. [4] and Holst, et al. [22] these challenges further limit collaborative efforts to share expertise, build professional relationships, and reflect on their professional practice.

The healthcare system in Lesotho is predominately influenced by the nation's healthcare challenges including HIV/AIDS, TB, poverty and its ragged mountainous geographical layout [23]. There is no formal training towards the specialty of emergency nursing, but similar to assertions made by Brysiewicz, et al. [15] nurses are usually the first, and maybe the only, point of care for patients in the EDs. According to National Emergency Nurses Association [20] ENs face challenges while also being required to possess a broader range of clinical skill sets to function effectively in the atmosphere of unpredictability and uncertainty, in carrying out the process of decision-making, frequently find themselves without sufficient staff and adequate training to meet the patients' needs. The practice environment in this country may predispose health care workers particularly the rare ENs to high levels of professional isolation which has the potential to lower their standard of practice. This study aimed to explore and describe the perceptions of professional isolation among ENs working in a low-resource environment and initially asked the participants to explain what professional isolation meant to them and if they felt they experienced professional isolation. Further probing questions asked them to describe what factors (if any) they felt contributed to their own professional isolation, how it had affected their clinical practice and what strategies they believed could be used to manage their professional isolation.

2. Methods

2.1 Study Design and Approach

This qualitative descriptive study was part of a larger action research, developing an intervention to manage professional isolation among emergency nurses working in low-resource environments. A qualitative descriptive approach underpinned by the Emancipatory Nursing Praxis Model [24] which informed the questions on the interview guide, thereby guiding the data collection and analysis of the study. Qualitative method provided an opportunity for authentic descriptions of the perceptions of professional isolation among ENs working low resource environments [25].

2.2 Study Setting and Participants

The settings for data collection were five hospitals from the northern and central regions of Lesotho that had emergency departments. These hospitals were:

- One government tertiary level hospital (initially a public-private partnership). The facility is the only national referral hospital with a total of 425 beds and an ED staff complement of 17 ENs across different shifts.
- Two state funded (one regional hospital with a total of 200 beds and an ED staff complement of three nurses, and one district hospital with a total of 128 beds and an ED staff complement of two nurses.
- One Christian Health Association of Lesotho (primary level) hospital with total of 150 beds and ED manned by two nurses.
- One privately funded hospital – private hospital with total of 40 and ED staffed by one nurse.

These settings provide emergency care services to communities in the rural and urban areas of the northern and central regions of Lesotho. The health professionals working in these EDs included of nurses registered with the Lesotho Nursing Council as a registered nurses with a diploma and/or degree in nursing (none had completed specialisation in emergency nursing) made the sample. The five hospitals were chosen as the research contexts on the basis that they provide a representative reflection of population diversity of the target population. The participants were selected through purposeful sampling [26]. Inclusion criteria comprised nurses registered with the Lesotho Nursing Council either a diploma or degree in nursing, currently working in the EDs of the research settings. Nurses, with or

without additional emergency nursing training, were included if they had at least three months' work experience in these EDs.

2.3 Data Collection

This qualitative study was based on individual interviews conducted with 13 ENs from five different settings in Lesotho over a period of six months (August 2020 to February 2021). Initially, four face-to-face interviews were conducted in the EDs at the convenience of the participants. Due to the COVID-19 pandemic restrictions, the researcher then switched to telephonic data collection for five participants, and as COVID-19 restrictions eased, three more participants were interviewed face to face. A semi-structured interview guide was used to explore the ENs' perceptions on professional isolation. Each face-to-face interview was approximately 30 to 70 minutes while each telephonic interview was 20 to 45 minutes long, which were conducted at a time and venue deemed suitable by the participants. For data assurance purposes, all interviews were conducted in English, audio-recorded, transcribed verbatim each day and complemented with the field notes by the researcher (MK). To ensure the data emerging from the semi-structured interviews was appropriate to the research questions, of dependable and reliable, a semi-structured interview schedule was developed, to provide a route that encourages the interviewer to ask pre-established questions as well as an opportunity for follow-up questions, allowing supplementary interrogation of data emerging from responses and reactions of the participants the interviewee[27]. After 13 participants had been interviewed and the data analysis completed, the research team jointly determined that no new categories and themes were emerging, and that data redundancy had been reached[28].

2.4 Data Analysis

Data were analysed using an inductive qualitative content analysis method[29,30]. All interviews were recorded, transcribed verbatim, and were read and re-read by the researcher (MK) to make sense of the data as a whole. Attention was given to both manifest and latent content[30]. Subsequently the text was manually divided into meaning units manually and then condensed to reveal the central meaning and code for each meaning unit. Similar codes were combined into categories. Codes and categories were discussed and critiqued by all three authors until consensus was reached, categories were then grouped into a theme [29], See Table 1.

Table1: Example of Content Analysis Coding and Categorization

Meaning unit	Condensation	Coding	Categories

"When someone is specialising in a particular field, then is working in a different environment that does not do anything to do with what he/she is specialising in".	Different environment - nothing to do with what he/she is specialising in.	Misallocated	Skills mismatch
"So, if I interact with that person, I would have a clearer understanding of what I should expect after giving a patient a particular drug rather than relying on my knowledge".	Interacting with person…should give a clearer understanding	Interprofessional collaboration	Lack of interprofessional collaboration and consultation
"I might have knowledge and other colleagues might not have the same knowledge and in return you find I am on my own, I have no one to share with, and I am actually lonely".	I am on my own…...I am actually lonely	Lonely	Enforced loneliness

3 Rigor

Establishing rigour in qualitative research is significant to enable research findings to have integrity and impact [31]. In this study, rigor was achieved through credibility, transferability, dependability and confirmability criteria. The credibility was enhanced through the audio-tape recordings of the interviews to depict the exact words of the respondents were captured [32]. The researcher had a professional relationship with the participants in varying degrees and had to build trust and rapport with some of them. Spending six months in different intervals with participants allowed them to be more familiar with the researcher[32]. Moreover, three authors independently analysed the data and then compared the results to safeguard against the risk of bias in the interpretation of data. Transferability was achieved through detailed description of the participants, study context, research procedures, and the provision of quotes from the interviews to enrich findings and allow the reader to determine if the findings were transferable to their own setting[33,34]. Dependability was achieved through peer debriefing with the two experienced qualitative researchers (PB and TS) to confirm categories and the theme[32,33]. Confirmability was achieved by validating audio-recorded and transcribed transcripts against

categories and themes through constant comparison[35]. Reflexivity, which included researchers' critical reflections examining biases, preconceptions, and research relationships was employed to promote confirmability [36].

4 Ethical Considerations

Ethical approval was obtained from the university ethics committee (Reference: HSS/0051/019D), the Ministry of Health of the Government of Lesotho (Reference: ID 189-2019), and permission from the respective hospitals included in the study. The researcher provided the Participant Information Sheet to explain the nature of the study and what was requested of them. Participants gave written informed consent and telephonic consent (for telephonic interviews) to participate in the research and for their interviews to be recorded. Participants were informed of their right to refuse to participate or to withdraw from the study at any time. All data was securely stored in the researcher's computer protected by fingerprint password and treated as confidential, only accessible to the research team.

5 Findings

2.2 Demographic Characteristics

The results of this qualitative study are based on individual interviews of 13 registered nurses working in the EDs of five different hospitals in Lesotho. The sample comprised four males and nine females, aged between 23 years and 45 years of age (mean age of 34 years). The participants' experience in EDs ranged from six months to 21 years and they had completed diplomas (n = 5) or bachelor's degrees (n = 3) or postgraduate studies (n = 5) in nursing and five had just enrolled in an Adult Nursing Postgraduate Programme which entails an emergency nursing component.

The data analysis revealed the overarching theme; "*feeling like an island*" with three categories namely; lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness.

5.2 "Feeling like an Island"

Comparable to an island, a piece of detached land surrounded by water and therefore unreachable, the participants described themselves as being alone, emotionally and professionally distant, having a sense of solitude, whilst at the same time being surrounded by other healthcare professionals outside of emergency care. This theme entailed three categories whilst [P] refers to the participant number.

5.2.1 Lack of interprofessional collaboration and consultation

Participants explained how they experienced a lack of collaboration and interaction with the other health professionals. One participant described this situation as being "*when a person with special skills …but* [is] *working alone and has no one to share work challenges with or there is no one providing professional support if needed* (P9).

This was a challenge and created difficulties for the participants as explained by as explained in the following quotation:

> *Sometimes you want to confirm with someone who understands better or has higher knowledge, or sometimes you wish to refer because you are stuck* (P5).

One other participant continued;

> *I think mainly* [the] *lack of interaction contributes to our professional isolation you know…. I do not know how it comes about, but you find that there is* [a] *demarcation line between ENs and other nurses* (P7).

5.2.2 Skills mismatch

This misplacement in terms of their skill set served to then make the EN feel different, apart from the other staff, like they were not part of the team. A participant explained;

> *One might have the knowledge, and other colleagues might not have the same expertise and in return, you find "I am on my own"* (P4).

The participants described how they were often misallocated in their clinical placements with the result that their expert skills and knowledge of emergency nursing were not being used and thus ultimately losing their skills;

> *When someone is specialising in a certain field, then is working in a different environment that does not do* [have] *anything to do with what they are specialising in…. they end* [up] *losing their skills* (P1).

Another participant agreed;

> *You are going to work in a rural area where there are not many emergencies or surgeries done, you end up having less exposure, and your skills may disappear* (P9).

5.2.3 Enforced loneliness

Participants expressed an invisible but pervasive barrier that segregated them from other nurses because of their advanced knowledge and skills, consequently rendering them emotionally distant and thus resulting in feelings of solitude;

> *We have developed certain skills which are lacking* [in] *other cadres of nursing. Our knowledge level is not equal, so, because of these skills and knowledge which is more advanced compared to other nurses, we feel isolated because others may not fully understand how we do certain things* (P4*).*

Another participant explained that the emotional distance that leads to loneliness may also be linked to the remoteness of the EDs where the ENs are deployed;

> *Remoteness in a sense that there are few people who are actually experts in trauma and emergency care, moreover, the facilities themselves are usually remote from the rest of the hospital they are isolated* (P9).

Some participants related their loneliness to lack of contact because of geographical location where they find themselves being far away from their colleagues;

> *Being far away from the people that I can discuss, my concerns regarding whatever we are doing. The people that I can discuss issues about our daily practice are far away and I am not able to contact them, or they are not able to contact me* (P12).

6 Discussion

This study contributes to the extremely limited literature on professional isolation among health professionals, and emergency nursing. The current literature on professional isolation focuses on other professions[17], multiple disciplines of healthcare professionals for example, doctors and nurses[37] or pharmacists and other healthcare teams[38]. By exploring the perceptions of professional isolation among ENs working in a peculiar context of low-resource environments, the results of this study strengthen the understanding of professional isolation among ENs, its origins and the possible coping strategies. The results revealed one overarching theme, "*feeling like an island*," describing the perceptions of the ENs participants working low-resource environments about professional isolation. The participants related their experience of professional isolation to lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness.

The results of this study highlight that ENs linked their professional isolation to lack of interprofessional collaboration and consultation. They expressed that they felt like being disconnected from the rest of other health professionals, however, McLoughlin, et al. [40] suggest that improving the level of interaction among the nurses themselves or nurses with other health professionals may decrease the sense of professional isolation.

From the results of this study, ENs described how they were often misallocated in their clinical placements with the result that their expert skills and knowledge of emergency nursing were not being used and thus ultimately losing their skills. This skills mismatch created feelings of dissociation, lack of professionalism, and lack of a sense of belonging amidst colleagues. In addition, lack of professional support or mentorship contributed to their professional isolation. This finding is consistent with the declaration of Comyn and Strietska-Ilina [41] that the consequences of skills mismatch reach all levels of the labour market, including individuals, organisations, and nationals. Healthcare is reported to have the highest level of skills mismatch in the overall economy especially nursing which is an extremely fast-paced job with new challenges arising daily [42,43]. However, this concept has not been thoroughly explored in the health care sector particularly among ENs working in EDs of low-resource environments. This is a gap in the literature that requires systematic examination.

Similar to other findings[5,6,10,44], this study has generated understandings on the sources of professional isolation including, geographical location (being in a remote or rural location), lack of opportunities for knowledge sharing, and lack of support or supervision. In this study ENs highlighted enforced loneliness as another barrier that isolated them from other nurses as a result of their advanced knowledge and skills which made them emotionally distant and lonely. The participants expressed that advanced knowledge and skills have a potential to create a communication barrier between the ENs and other nurses, thus making them "*feel like an island*". While in contrast, Aizenberg and Oplatka [5] acknowledged educational projects and professional development to be among various professional strategies that could be used to cope with feelings of professional isolation at work. Furthermore, Mwape, et al. [45] and Pimmer, et al. [44], suggested that participants with advanced knowledge and skills exhibited fewer feelings of professional isolation compared to their counter parts. Most importantly, the trajectory of professional isolation may be improved or changed less dramatically by encouraging employees to share knowledge, skills, experiences, and their professional challenges[46].

These findings, therefore, imply that professional support and mentorship, interaction and inter-professional collaboration through a safe professional platform may potentially assist ENs working in low-resource to address professional isolation. These findings were reinforced in the early work of Bonnici [47] who acknowledged that collaboration and networking are also essential in developing strategies that can help reduce professional isolation.

7 Limitations

This study had a number of limitations reflecting the limitations inherent to descriptive qualitative methodology including sampling, data collection methods and transferability of the findings. This study focused only on ENs working in EDs which may limit the contexts for implications and application of the results. The restrictions of COVID-19 pandemic had a significant limitation as the interview method was changed to telephonic as opposed to face-to-face interviews. This increased data collection time and many of the participants were still overwhelmed, distracted and stressed by the pandemic. Moreover, data collection was also affected by the nurses' strikes in one of the settings which had the majority of the participants, therefore access to participants was extremely limited hence the delay in data collection.

8 Implications for Emergency Nursing

This research suggests that the nature of EDs particularly in low-resource environments, often predispose ENs to feelings of professional isolation attributed to lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness. It is vital that an intervention for managing professional isolation among ENs is developed and implemented. In a health care system, ENs are often at forefront of patient care and mainly are the gatekeepers in the EDs therefore, are in key position to use current research. ENs may use their education to develop hospital-wide policies on managing professional isolation, raise awareness among their colleagues on the subject.

9 Conclusion

The findings from this study suggest that lack of interprofessional collaboration and consultation, skills mismatch and enforced loneliness have influence feelings of professional isolation among ENs working in low-resource environments. The findings of this research lend support to the idea that communities of practice may have a potential impact in addressing professional isolation.

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3.2 SYNOPSIS OF MANUSCRIPT TWO

This article addressed Objective Two: "To explore the perceptions of professional isolation among emergency nurses working in low-resource environments." This article formed Cycle Two of a larger mutual collaborative action research which employed an exploratory-descriptive qualitative approach. This article described the in-depth exploration of the perceptions of professional isolation among ENs working in low-resource environments. To develop an intervention which was acceptable and sustainable by the ENs it was important to

therefore obtain insights from the people that the intervention was intended for, to ascertain their experiences and descriptions of professional isolation.

Becoming and awakening phases of Emancipatory Nursing Praxis Model (Walter, 2017) served as the initial stages that guided towards undertaking the study and helped to inform the research team. It reminded the research team that the awakening of marginalized individuals usually arises from an extensive experience and reflection that results in a person becoming conscious of the disparities, inequities, and inequalities in their midst and identifying their role in society (Holmes, 2022). Awakening helped the research team to identify their role in the nursing practice, as they started helping in the research process by identifying possible participants, setting times and rooms for interviews to take place.

Pragmatism was the lens which guided sampling strategies by ensuring the sampling processes uncovered a range of viewpoints. It helped research team members to identify information rich participants most likely to provide useful practice-based knowledge about professional isolation. Qualitative content analysis revealed an overarching theme of "feeling like an island", containing three categories namely; lack of interprofessional collaboration and consultation, skills mismatch, and enforced loneliness.

This article suggests that professional isolation among ENs is multifactorial in origin, and it is associated mainly with lack of interprofessional collaboration and consultation. The article further suggests that ENs could benefit from the development of a Digital Community of Practice as an intervention for managing professional isolation. The results, therefore, presented the need for a safe environment for ENs to express their practice challenges and experiences. These results were employed to contribute to developing the intervention for managing professional isolation. The researcher has just received the reviewer's report of this article and is currently working on the corrections.

CHAPTER FOUR: DEVELOPING AND IMPLEMENTING AN INTERVENTION FOR MANAGING PROFESSIONAL ISOLATION (CYCLES THREE AND FOUR)

Kutoane, M., Scott, T., and Brysiewicz, P.: Developing a Digital Community of Practice to Address Professional Isolation among Emergency Nurses in Lesotho *(submitted to International Journal of Africa Nursing Sciences).*

4.1 MANUSCRIPT THREE: SUB-STUDY FOUR

This chapter consists of Manuscript Three (4.1) and a synopsis of the manuscript (4.2). This cycle of the research was concerned with developing and implementing an intervention for managing professional isolation among emergency nurses working in low-resource environments. OBJ

Developing a Digital Community of Practice to Address Professional Isolation among Emergency Nurses in Lesotho

ABSTRACT

Introduction: Professional isolation is described as 'deficiencies in one's network of social relations at work' and is associated with compromised health service delivery and quality of life among health professionals, particularly those working in low-resource environments.

Aim: to develop a Digital Community of Practice to assist with the professional isolation of emergency nurses in Lesotho.

Method: A mutual collaborative action research study, with an exploratory descriptive qualitative design, was conducted in the emergency departments of five selected hospitals in Lesotho, with 25 purposively sampled registered nurses. A needs assessment was conducted using a scoping review and focus group discussions, followed by the establishment of a three-member research team (Cycle One). Thirteen individual interviews were conducted to explore the perceptions of professional isolation among emergency nurses (Cycle Two) and the intervention, a Digital Community of Practice, was then developed (Cycle Three) guided by the five-phase Life Cycle of Communities of Practice Model. This was then implemented in Cycle Four.

Results: The preliminary results from the evaluation of the implementation of a DCoP show that the DCoP developed on the WhatsApp platform was functional, highlighting mutual

engagement, joint enterprise, and a shared repertoire. These results show how a DCoP enabled ENs to gradually implement a change in practice; as well as to recognize and minimize professional isolation among themselves.

Conclusion

Combining results from Cycles One and Two, the research team developed and implemented a Digital Community of Practice. The results show that a Digital Community of Practice using WhatsApp may be a useful intervention strategy for managing professional isolation with emergency nurses in marginalised areas.

Keywords: *low-resource environments, professional isolation, emergency nurses, interprofessional collaboration, communities of practice, Digital Community of Practice*

1. Introduction

The concept of professional isolation was coined by Dussault (1997), as deficiencies in one's network of social relations at work. The concept of professional isolation is multidimensional; it may be either geographic, social or ideological in origin, and it has the potential to adversely affect the workplace and its employees (Aizenberg & Oplatka, 2019; Jung, Song, & Yoon, 2021). A cross-sectional survey conducted in Turkey with a sample of 138 nurses revealed that professional isolation negatively impacted on job performance and job satisfaction (Amarat, Akbolat, Unal, & Güneş Karakaya, 2019). Isolation from professional peers was claimed to have, potentially, negative implications for nurses in their specialised departments, such as the emergency department (ED) (Aizenberg & Oplatka, 2019; Arslan, Yener, & Schermer, 2020; Seppala & King, 2017). Murthy (2017) described professional isolation as an emerging dynamic health epidemic with the potential to reduce lifespan – equivalent to smoking 15 cigarettes a day. To emphasize his argument, Murthy (2017) indicated that professionals experiencing professional isolation feel sadness; anxiety; boredom; pessimism; depression; low self-esteem, and low life-satisfaction. Frey (2018) submitted that professional isolation is more common among health professionals deployed in low-resource settings, with limited access to clinical information and support in making decisions; unreliable availability of specialty consultation; and compromised interaction with colleagues.

EDs serve as the primary point of contact for acutely or critically ill patients requiring emergency medical care and they play significant role in reducing mortality and morbidity rates (Rathore, Jain & Parida, 2022). Emergency care is still an evolving specialty in low-resource environments, such as sub-Saharan Africa, which has more than 90% of trauma-related deaths, and a magnitude of acute illnesses, which presents a major public health threat (Afaya et al., 2021; Marsh & Rouhani, 2018). The increasing demand for emergency care services render the ED a complex, challenging and dynamic environment requiring highly skilled healthcare personnel (Reimer, 2019). Nurses remain the largest group of frontline health workers and are possibly the most valuable resource within the healthcare industry. This is particularly evident in the emergency care context of low-resource environments where a nurse is usually the first, and maybe the only, point of care for a patient (Brysiewicz, Scott, Acheampong & Muya, 2021; Kennedy, 2019). Nurses working in the EDs care for patients in the critical phase of their illness or injury when diagnosis has not yet been established and are required to provide lifesaving and time-sensitive critical interventions, and usually provide care beyond their scope of practice (Brysiewicz et al., 2021). Working in this complex environment might potentially

expose ENs to marginalisation and isolation from their professional peers (Atakro, Ninnoni, Adatara, Gross & Agbavor, 2016; Hickman, 2019).

There is extremely limited literature available on interventions that alleviate professional isolation, (Arslan et al., 2020; Zhou, 2018). However, Aizenberg and Oplatka (2019) suggested four strategies, namely: providing professional support; co-operation; initiatives, and leading educational projects; as well as professional development. Overcast (2019) highlighted seven approaches to reduce loneliness in the workplace that are worth considering in low-resource environments. However, these strategies depend on professional values governed by interactions between the professionals. While organisations focus on addressing workplace isolation among their employees, their efforts are limited by isolation silos, with a lack of collaboration and knowledge sharing, as well as the widely dispersed deployment of their employees (Lim, 2020). Overcast (2019) suggested that interprofessional interaction should be developed over a period of time and, significantly, has the capacity to break down these silos of professional isolation through shared goals, interests and commitments. Lave and Wenger (1991) affirmed that such interactions can easily be achieved through 'Communities of Practice' (CoP), defined as groups of people who share an interest and a profession that allow a common background for shared learning. Through this, the individuals develop a social identity where mutual values; knowledge; power; language, and other social tools, become communal property and products of the members of the community (Overcast, 2019; Thoma et al., 2018). Wenger (2014) further argued that CoPs are a basic way in which people engage in a common practice, whose values they create and exchange with each other through mutual engagement, joint enterprise and shared repertoire. However, geographic isolation and communication infrastructure may challenge this natural communal interaction in a CoP, which can be overcome through a Digital Community of Practice (DCoP) (Ghamrawi, 2022; Thoma et al., 2018). In a DCoP, participants interact in a virtual environment using digital communication technologies, such as smartphones, to share knowledge, expertise, and resources (Thoma et al., 2018). Bissessar (2022) showed that these digital platforms are convenient, and CoP members can access their content and engage in discussions, regardless of their geographical location. Through fostering mutual engagement, joint enterprise and a shared repertoire, a DCoP for emergency nurses working in low-resource environments may be contextualised to engage them in mutual collaboration and interaction.

WhatsApp is a social media platform which provides the opportunity for increased collaboration and sharing among its users (Mars, Morris & Scott, 2019). It was found to be the

most-cited digital application in healthcare and is used to share patient information between clinicians (Barayev et al., 2021; Mars et al., 2019). Since its introduction, WhatsApp has been investigated for its importance in building successful communities and sharing knowledge among healthcare workers in various settings, including EDs (Barayev et al., 2021; Ganasegeran, Renganathan, Rashid & Al-dubai, 2017; Gulacti & Lok, 2017). According to Ganasegeran et al. (2017), WhatsApp is more beneficial for use in clinical practice, compared to other communication tools (like Line, WeChat, Tango, and Viber). It allows healthcare professionals to interact quickly and efficiently for effective patient management. Mars et al. (2019) also confirmed that WhatsApp is the popular social media platform used by clinicians because of its simplicity, timeliness and cost effectiveness.

2. Research Methods

This study forms part of a larger, four-cycle mutual collaborative action research study (Holter & Schwartz-Barcott, 1993). In this cycle, the study used an explorative descriptive qualitative research approach. This study was guided by the ENP theory, which provided a framework through which nurses could reflect on their practice and recognize mechanisms for addressing their social and contextual challenges; and thus, serve as agents of change (Walter, 2017).

3. Research Setting

The study was conducted in the EDs of the five selected hospitals in Lesotho. These settings provide emergency care services to communities in the rural and urban areas of the northern and central regions of Lesotho. The health professionals working within the EDs, consisting of nurses registered with the Lesotho Nursing Council, with a diploma and/or degree in nursing (with or without a specialisation in emergency nursing), were sampled. The five hospitals were chosen as the research contexts on the basis that they reflect the population diversity in Lesotho in terms of socioeconomic and political status, and cultural beliefs.

- Site A: This is a government tertiary-level hospital (initially a public-private partnership) with a capacity of 425 beds, where patients are referred from other hospitals according to the national referral system for specialist services.
- Site B: This is a state-funded regional hospital serving as a regional referral hospital for all health services in the northern part of the country, located in the district of Leribe, and with a capacity of 200 beds.

- Site C: This is a state-funded district hospital situated in the district of Berea, with a capacity of 128 beds.
- Site D: This is a Christian Health Association of Lesotho (primary level) hospital which provides general health services, with a capacity of 150 beds.
- Site E: This is a 40-bed privately funded, private hospital situated in the district of Maseru, providing general and specialist services to individuals who have private health insurance, or who are paying privately for health services. This setting is easily accessible to the population of Maseru and other districts and has a 24-hour emergency department.

4. Research Participants

Purposive sampling was used for the FGDs and the individual interviews, with 25 and 13 participants for FGDs and individual interviews, respectively. All the participants were registered nurses endorsed by the Lesotho Nursing Council (registered nurses having completed either a five-year degree course, a four-year diploma or a three-year diploma) working in the EDs at the five settings. In the FGD sample, there were 10 males and 15 females; while in the individual interviews, there were 4 males and 9 females. In all groups, the participants were aged between 23 years and 45 years (with a mean age of 34 years).

5. Research Ethics

Ethical approval was obtained from the university in South Africa where the first author is a student (Reference: HSS/0051/019D) and the Ministry of Health of the Government of Lesotho (Reference: ID 189-2019). Permission was granted from the hospitals included in the study. Participants gave written informed consent and telephonic consent (for telephonic interviews) to participate in the research and for their interviews to be recorded. Participants were informed of their right to refuse to participate or to withdraw from the study at any time. All data was securely stored in the researcher's computer, protected by fingerprint password, and treated as confidential. Only anonymised data was accessible to the research team.

6. Developing the DCoP

The development of the DCoP followed four cycles, as outlined in Figure 4.1. A needs assessment was conducted through a scoping review and five FGDs in Cycle One, followed by 13 individual interviews which were conducted to explore the perceptions of professional isolation among emergency nurses, in Cycle Two. The intervention was developed in Cycle

Three, where the research team concluded that a DCoP was the strategy that could be used as an intervention for managing professional isolation among emergency nurses in Lesotho.

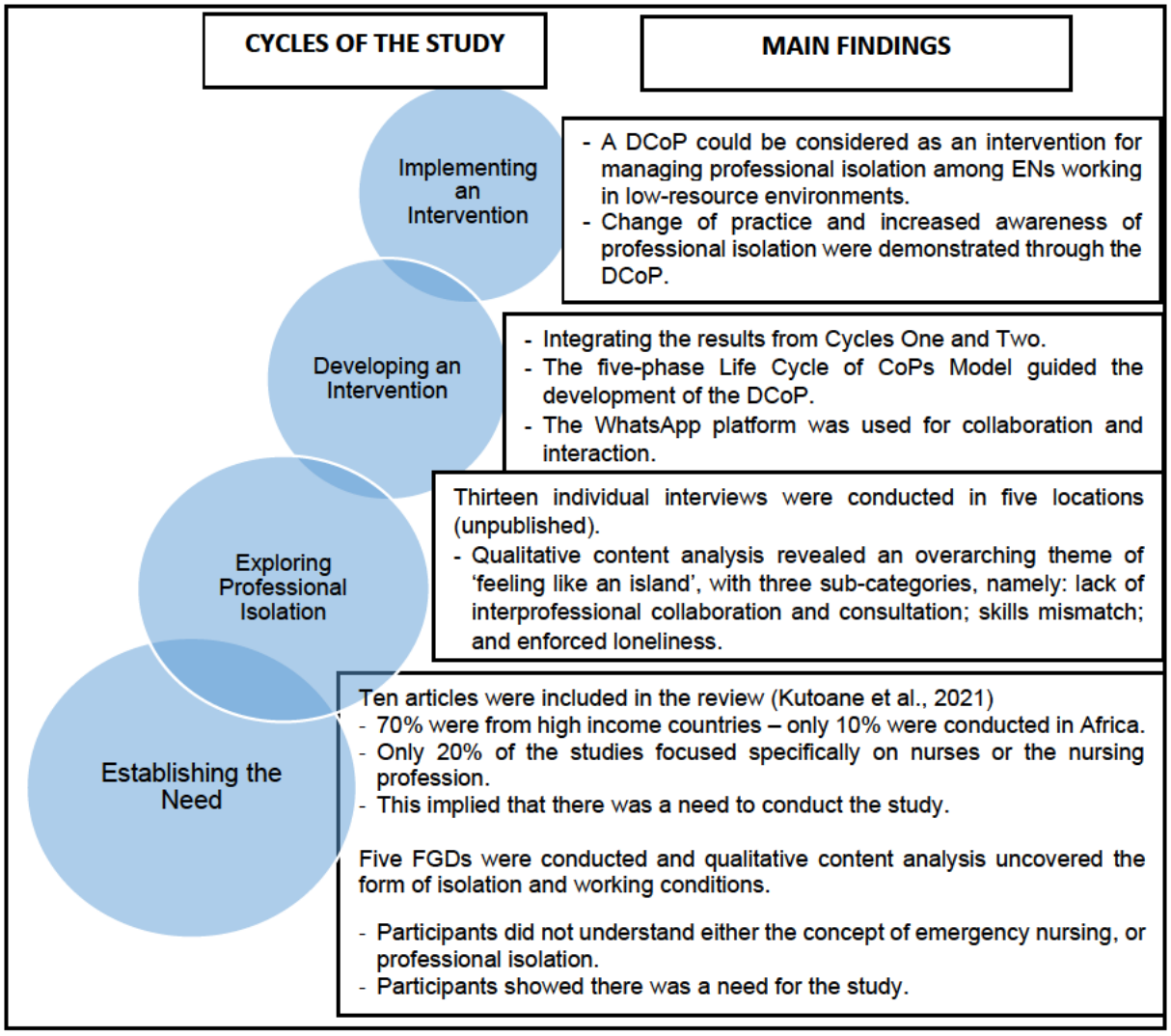

Fig 4.1: Development of the DCoP

7. Developing the DCoP

In a series of three workshops and two meetings, the research team discussed the findings of the scoping review, the FGDs, and the individual interviews, and then discussed how these findings could best inform the development of an intervention. Workshop One was the initial workshop conducted by the researcher to improve the understanding of the participants about their clinical practice.

In Workshop Two, with the three research team members, one male and two females, the researcher invited them to discuss the results of the pre-intervention studies and determine how they could best inform the development of the intervention. The research team became aware

that a CoP had the potential to address professional isolation; and social media platforms, such as WhatsApp, could be used when participants might not be able to meet physically. In one of the FGDs, one participant, who also happened to be a member of the research team, had indicated she was a member of a particular WhatsApp group where they discussed challenges facing single mothers. She then proposed that such a group could be developed for ENs working the EDs. The research team accepted the idea and decided that a WhatsApp group should be developed and implemented as an interaction platform (DCoP) among ENs who were widely dispersed. The research team discussed this further and concluded that, to recruit participants to join the WhatsApp group, the most convenient approach would be to send a WhatsApp link to all 25 emergency nurses who had participated in the FGDs (Cycle One) and the individual interviews (Cycle Two).

The research team believed that WhatsApp was a good option, because it is a social messaging application with connecting properties and qualities that enable sharing of experience and knowledge among smartphone users, making it a remarkably interesting platform for the intervention (Ajani, 2021; Della Líbera & Jurberg, 2019). WhatsApp is an application predominately used in smartphones, which have an advantage over desktops and laptops in terms of power supply, cost, portability, and internet connectivity (Brunette et al., 2019; Suraj Singh, 2021). WhatsApp was used because, in the two workshops conducted prior to the implementation of the intervention, it was revealed that WhatsApp was amongst the most-used social media platforms and the participants preferred using it.

A total of 19 ENs from the five selected settings volunteered to join the WhatsApp group, 'Emergency Nurses Lesotho'. The DCoP was established in November 2021 and is still active. Participants used their own smartphones and internet connections as and when convenient. The research team, with the support of one of the research supervisors (PB), acted as group mentors by guiding comments and discussions from group members. The WhatsApp group was designed to share and exchange information related to learning and development, and the research team ensured that they aligned with the terms and purpose of the group. Participants were not allowed to share any sensitive information, such as that which might reveal patients' or persons' identity.

To provide a framework and encourage lively discussions, the research team used the African Federation of Emergency Medicine Nursing Induction Booklet (AFEM NIB) to develop weekly topics for discussion in the WhatsApp group. The AFEM NIB was used with the

understanding that emergency nursing was a new speciality in the country, and it was believed that the induction booklet would be a useful tool to guide the group discussion. Different views, experiences, and practice challenges were shared and solved by the group members themselves (Wenger, 2014). Where necessary, the research team provided guidance by posting relevant literature from the AFEM NIB. When the group showed low levels of motivation, such as not participating in the group discussions or being unable to decide what to do, the overall mentorship was facilitated by the researcher's prompts.

8. Pilot Evaluation of the Implementation of the DCoP

An inductive qualitative content analysis (Erlingsson & Brysiewicz, 2017; Graneheim & Lundman, 2004) was used to reveal the characteristics of a DCoP, based on Wenger's (1998) three dimensions of a COP, which highlight mutual engagement, joint enterprise, and a shared repertoire. All correspondence, which consisted of qualitative text and multimedia files, such as audio and visual materials (Creswell, 2014), was downloaded from the researcher's smartphone to a computer using WhatsApp's 'export chat' function. Screenshots of all the correspondence were also taken and transferred to the computer using the Bluetooth application. To determine the effectiveness of DCoP, a five-point Likert scale checklist questionnaire, ranging from 1 (strongly disagree) to 5 (strongly agree), was hand-delivered to five participants who were randomly selected (one from each setting) from the five selected settings.

8.1 Mutual engagement

In this study, ENs demonstrated mutual engagement in the development of a DCoP. They engaged in the WhatsApp discussions – articulating their views, assisting each other, and learning together. They thus formed a community, exhibiting mutual engagement. According to Wenger-Trayner and Wenger-Trayner (2015), a community is a home for interaction and learning for its members, which build a strong social bond among its participants. It motivates sharing of knowledge through joint activities and discussions, creating mutual respect and trust. The group based itself around sharing information about emergency nursing, knowledge about clinical skills, and challenges in their respective EDs, regardless of their geographical location (see Figure 4.2).

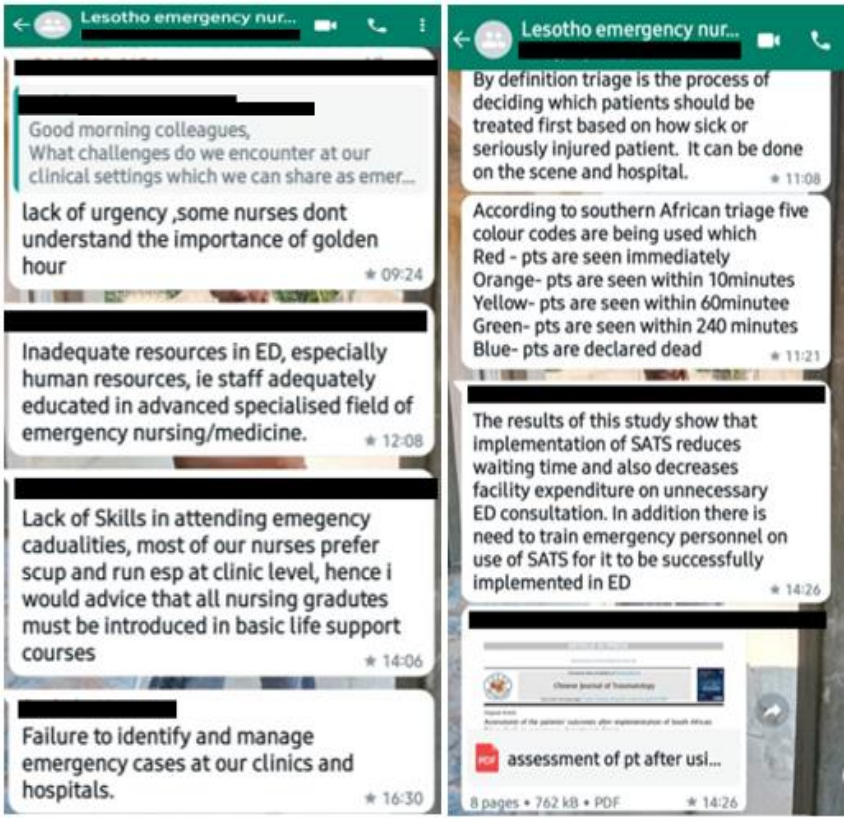

Fig. 4.2: Highlights in the messages the WhatsApp group members shared (names have been removed).

8.2 Joint enterprise

A remarkable part of this DCoP was that it was a homogenous group of registered nurses working in the EDs of the same country who characterised mutual engagement through diversity and partiality (Wenger, 1998). As a joint enterprise, the members of the group had different experiences and perspectives to share with one another. The group comprised 19 ENs (seven males and twelve females), with various qualifications, ranging from four-year diplomas to five-year nursing degrees, who were distributed across the EDs of the five selected hospitals. This diversity allowed DCoP members to contribute different forms of information and to negotiate knowledge through interaction within the group, which added to the group's overall knowledge base (Figure 4.2). This further implied that participants possessed common interests and collective goals, showing commitment to learning together and addressing their practice challenges while also enhancing their knowledge.

Moreover, all five participants indicated that they strongly agreed that the WhatsApp group facilitated their communication with the other emergency nurses and their interactions were useful. Sixty percent the participants agreed that the WhatsApp group provided useful content

and they would therefore recommend that other emergency nurses participate on similar platforms. By participating in this group, the participants embarked on a joint enterprise working towards a shared goal; they spoke with one voice that WhatsApp facilitated their interaction.

8.3 Shared repertoire

According to Wenger (1998), this aspect focuses on creating sets of communal resources through negotiated norms that include specific activities; symbols; artefacts; words; stories; and gestures that work to create and maintain relationships in the community. In this DCoP, members shared pictures; emojis; GIFs; audio and video clips, and websites, as educational resources that could assist ENs in having more meaningful interactions. In one instance, one participant initiated the discussion by sharing a GIF of a cat performing cardio-pulmonary resuscitation (CPR) on another cat. This stimulated more discussion from the participants about the protocols for conducting CPR. These efforts helped participants to further develop their understanding of their profession and advance their skills. Each member of the DCoP participated in a way which felt comfortable to them (either actively reading and posting or passively, just by reading), and in the language they preferred (Sesotho or English), thus creating a sense of belonging to, and identifying with, the group. By sharing information related to their own clinical practice, and discussing subjects and challenges linked to the field knowledge that they had difficulty in addressing, they developed a shared repertoire related to their domain (Wenger-Trayner & Wenger-Trayner, 2015).

9. Discussion

The results from this pilot evaluation of the implementation of the DCoP showed that the characteristics of a DCoP were exhibited. The members of the group shared a passion and common goals and contributed towards a shared repertoire – thus leading to a change in practice. In line with the findings from an integrated review by McLoughlin et al. (2018), engagement with, and sharing multiple messages on, this DCoP demonstrate the value of WhatsApp as an interaction platform that might minimize feelings of isolation among ENs in low-resource environments. DCoPs encourage professionals to participate in interprofessional learning activities and collaboration, thus breaking professional silos and barriers allied to isolation, and establishing a safe environment for participants, while increasing their participation and engagement (Alqahtani et al 2018; Moodley, 2019). Bermejo-Caja et al. (2019) further confirmed that interaction between the DCoP participants is crucial, as it offers

empowerment to participants through opportunities to exchange experiences; to learn of alternative approaches to the solution of a problem; to reflect on, and analyse, other perspectives related to routine practice; and to observe the skills and even practical demonstrations of other participants.

The results of this study show how a DCoP, designed via a WhatsApp platform, enabled ENs to gradually implement a change in practice and, possibly, increase their awareness of professional isolation. The DCoP helped overcome barriers to communication between geographically dispersed ENs, enabling information dissemination, and allowing them to learn from one another. Over time, this collaborative learning within the DCoP allowed ENs to begin to appreciate and understand challenges in their clinical practice. This finding is in line with the work of Salmond and Echevarria (2017) who acknowledged that transformation or change of practice ensues at an individual level, then to the group or organisation, and it requires comprehensive self-reflection and an enhanced set of knowledge, skills, and attitudes. A CoP is primarily structured around a specific practice and does not exist in the abstract, but exists because people are engaged, in a collaborative attitude, in negotiating towards a shared practice (Akinyemi, Rembe & Nkonki, 2020; Excell, Dixon, Linington & Mathews, 2016). However, Haas, Abonneau, Borzillo & Guillaume (2021) submitted that the level of vigour, commitment, and enthusiasm of individuals in a CoP is influenced by their engagement with their jobs and the perceived value of the CoP to their work. Similarly, professional vigour and enthusiasm are shaped by a combination of professional assertiveness, knowledge, attitude, skills and courage (Dung & Manh, 2020).

10. Limitations

The study was limited by using a small and fairly homogeneous sample, in the sense that the sampling frame focused on a group of emergency nurses working in the EDs. Variations in organizational culture between professions and hospital departments could produce differing perceptions on current opportunities and perceived barriers to participation in the DCoP. Therefore, the impact of the use of the WhatsApp platform in the wider ED workforce warrants future research. Moreover, the researcher acknowledges knowing the participants in a professional capacity across all settings. However, frequent debriefing sessions, meetings and discussions with the research team were conducted and the results were independently reviewed by the three researchers to minimise the degree of researcher bias.

11. Conclusion

This paper reported on how a group of ENs from EDs of five selected hospitals in Lesotho engaged in a DCoP and utilised a WhatsApp platform to serve as an intervention for managing professional isolation. The results showed how ENs effectively used the WhatsApp platform to discuss and maintain interprofessional collaboration and, potentially, solve their practice challenges, including professional isolation. In this study, the WhatsApp platform kept participants connected in a DCoP, and therefore mutually engaged in shaping their relationships and sharing resources in a joint enterprise that focused on supporting one another by way of a shared repertoire. The DCoP, particularly, enabled participants to gradually achieve a change in practice and possibly increased their awareness of professional isolation. This study adds to the understanding that a DCoP, through a WhatsApp platform, has the potential to benefit local and international communities in a similar context, and might serve as a guide to developing DCoPs in such locations.

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4.2 SYNOPSIS OF MANUSCRIPT THREE

This article addressed Objective Three: 'to develop a digital community of practice to assist in managing professional isolation among emergency nurses in Lesotho', and described the numerous steps of a mutual, collaborative action research study (Lyngsnes, 2016) that was undertaken to achieve this objective. The preliminary results show how ENs engaged in a DCoP and utilised a WhatsApp platform to initiate a change in practice.

Pragmatism helped both the researcher and the research team, who used a mutual collaborative action research approach, thereby enabling the various data (from the scoping review, FGDs and individual interviews) to be utilised in developing the intervention. 'Becoming, awakening, engaging and transforming' were the core concepts of the ENP conceptual framework that helped the ENs to understand their practice, identify as ENs, and eventually engage in the transformative process. A noticeable change, or transformation, was noted among the ENs as three of the participants volunteered to become members of the research team.

The five-phase Life Cycle of CoP model guided the development and description of the intervention by illustrating the crucial phases in developing a DCoP. This article suggested that a DCoP developed via social media, such as the WhatsApp platform, enabled participants to gradually effect a change in practice and, possibly, helped to recognize and minimize professional isolation. The article further recommended that a larger-scale study, involving key stakeholders in the emergency settings, should be undertaken to encourage the development of contextual interventions to address professional isolation in emergency care settings. Appendix R (report on developing a DCoP), provides additional information about the design, development, and implementation of the DCoP.

CHAPTER FIVE, SYNTHESIS, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

5.1 OVERVIEW OF THE STUDY

This chapter presents a synthesis and the conclusion, recommendations, and limitations of this mutual collaborative action research study.

Professional isolation is a multidimensional concept that may be either geographic, social or ideological, resulting from deficiencies in one's social network in the workplace. Many scholars argue that professional isolation is not just about being alone; but professionals may be isolated in their workplace environment because they lack a sense of belonging, and true engagement with friends and peers in the fulfilling of their professional responsibilities (van Zoonen & Sivunen, 2021; Sucharitha *et al.*, 2020; Sahai *et al.*, 2020). According to Peng *et al.* (2022), professionals can sense they are lonely or isolated, even in their busy workplace environment, if they feel no one else understands their professional practice, and if they do not feel comfortable about addressing this at work. Professional isolation has the potential to develop into an occupational hazard, adversely affecting the workplace environment and individual employees (Aizenberg & Oplatka, 2019; Jung *et al.*, 2021). Murthy (2017) submitted that the negative impact of professional isolation on an individual's life and health is equivalent to smoking 15 cigarettes a day. Professional isolation is more common among health professionals in marginalized settings, such as those deployed in low-resource environments, or those who specialise, such as emergency nurses. This may be attributed to limited access to clinical information and support in making decisions; unpredictable availability of speciality consultation; and interrupted interaction with colleagues (Frey, 2018). There is currently limited literature exploring the available interventions for managing professional isolation among emergency nurses working in low-resource environments, which has generated this study on the perceptions of professional isolation among emergency nurses, and the mechanisms to mitigate it.

5.2 SYNTHESIS OF THE FINDINGS

In this study, four sub-studies were conducted to investigate professional isolation among ENs working in the EDs of low-resource environments, to develop evidence-based strategies to manage it.

5.2.1 Objective One: To establish the need for developing an intervention (Cycle One)

This objective was achieved through a scoping review and FGDs in all the research settings (see Chapter Two). After introducing the nurses to the study and establishing that they thought it was a critical area to research, the researcher developed the team.

The scoping review aimed to map the available literature on interventions for managing professional isolation, and early on it became apparent that this is an under-researched area in nursing, as well as in LMIC. Furthermore, extending the review to include all health professionals still resulted in minimal studies, with only 10% (N=1) conducted in Africa.

While conducting the FGDs with the ENs, it soon became apparent that the nurses did not understand either the concept of emergency nursing, or professional isolation. Much time was taken educating them in understanding this phenomenon through running an emergency nursing workshop. The workshop focused on emergency nursing as a new speciality, addressing the roles of ENs and their scope of practice, as well as the challenges facing ENs working in Africa. By developing awareness that an injustice existed, the ENP theory provided a framework for nurses to engage in a collaborative action to identify their challenges in clinical practice and address them according to their needs and desires. Once there was an understanding of these terms, the nurses agreed that these were important concepts and, indeed, an important topic for research with one nurse saying;

> "*Yes, I think it's a good idea, I support it."* [P2]

When invited to form the research team, three participants, one from each setting, joined the team. However, due to a continuing nurses' strike in one setting, one participant withdrew from the study. She was later replaced by another participant from the same setting, with assistance from another research team member who helped identify the participant.

In this cycle, a collaborative action research process was initiated, and the results showed that there was a need for the study.

5.2.2 Objective Two: To explore the perceptions of professional isolation (Cycle Two)

Individual interviews were conducted, in which the perceptions of professional isolation among emergency nurses working in five selected hospitals in Lesotho were explored. Using pragmatism, the research team was able to identify the need to engage deeply with the

participants to reflect, refine, and possibly supplement, the information obtained from the FGDs and scoping review in Cycle One. Asking the participants to discuss what they understood by professional isolation enabled the research team to witness and better scope the challenges experienced by the EDs in their clinical practice. The theme, 'feeling like an island,' that emerged from the qualitative content analysis provided supplementary insight into how the ENs may experience professional isolation and reinforced their understanding of the factors that could be contributing to professional isolation.

5.2.3 Objective Three: To develop an intervention for managing professional isolation (Cycle Three)

In Cycle Three of this study, the researcher and the research team collaborated to review and reflect on the results from Cycles One and Two, which enabled them to draw interpretations and conclusions that informed the design and establishment of the intervention. A critique of the literature was also done to identify commonalities with the study findings.

This cycle embraced the third concept of ENP – engaging, which encompasses the process of undertaking actions of social justice and praxis; co-occurring reflection and action; analysing the balance of power; collective strategizing (planning of actions); and persisting with, or sustaining, praxis (Walter, 2017). The research team members engaged in critical reflection to identify and refine the strategy to be used as an intervention that could assist in addressing professional isolation. The team reviewed the components of the ENP model and the five-phase Life Cycle of CoPs Model to describe the relationships between them (see Table 5.1). The research team members believed that the five-phase Life Cycle of CoPs Model was clear enough for nurses to understand and use; that its concepts were clearly defined; and that the model would be relevant in bringing about the desired change in practice. The team members saw fit to design, develop and implement a WhatsApp group as a platform to promote participants' interaction, which would, hopefully, address professional isolation in the process.

Table 5.1: Summary of the development process of the intervention

CYCLES	CONCEPTUAL FRAMEWORK	PHASE OF THE DCoP	MAIN FINDINGS
Cycle One: **Scoping review:** Examine and map the range of literature available on interventions for managing professional isolation among health professionals in low-resource environments.	**BECOMING**	**Phase 1:** Define - Building a common identity	Only ten studies were included in the review. - Extremely little research on professional isolation among health professionals, with only 10% of studies conducted in Africa and none that focused on emergency nurses. - This implied that there was a need to conduct the study.
Focus group discussion: Establish if there was a need, and gaining support, for the proposed study.			- Nurses did not understand either the concept of emergency nursing, or professional isolation. - All participants agreed that there was need to conduct the study. - DCoP may help in the management of professional isolation.
Cycle Two: **Qualitative study:** Explore and describe the perceptions of professional isolation among ENs working in a low-resource environment.	**AWAKENING**		Thirteen individual interviews conducted (under review). - Qualitative content analysis revealed an overarching theme of 'feeling like an island'. This was broken down into three categories: lack of interprofessional collaboration and consultation; skills mismatch; and enforced loneliness.
Cycle Three: Develop an intervention for managing professional isolation among emergency nurses working in low-resource environments.	**ENGAGING**	**Phases 2 – 4**: Design, grow and perform	A DCoP was developed using the WhatsApp platform (unpublished). - The DCoP revealed characteristics of a CoP: mutual engagement; joint enterprise; a shared repertoire. - These implied that participants gradually changed their practice and possibly increased their awareness of professional isolation. - Build professional zeal among emergency nurses to assist in managing professional isolation.
Cycle Four: Implement and evaluate the intervention among the emergency nurses working in low-resource environments.	**TRANSFORMING**	**Phase 5:** Transform	

5.2.4 Objective Four: To implement the intervention among the emergency nurses (Cycle Four)

The intervention, a DCoP using a WhatsApp group named 'Emergency Nurses Lesotho', was implement and evaluated in Cycle Four (see Figure 4.1). Despite the complex nature of the ED, participants were engaged in the DCoP developed on a WhatsApp platform. This suggested that a DCoP has the potential to create and maintain interprofessional collaboration among ENs working in low-resource environments, by facilitating a change in practice and increasing awareness of professional isolation.

5.3 DISCUSSION OF METHODOLOGY

The nature of action research meant that the design of the intervention was not predetermined, but gradually evolved through collaboration with participants in each cycle of the study, and the assistance of emergency nurses to develop an intervention. According to Macleod and Zimmer (2005), this type of action research opens up a wide range of choices for researchers embarking on research. In this study, a mutual collaborative action research approach guided all the processes in creative spirals of planning, acting, observing, and reflecting on the findings; and collaboratively determining the best possible routes to the next cycle of the study (Lyngsnes, 2016). This approach allowed emergency nurses to reflect on their own challenges, leading to the development of the DCoP as an intervention for managing professional isolation. The philosophy underpinning the study was pragmatism, through which the researcher focused on the research problem and how to solve it in practice (Kelly & Cordeiro, 2020; Creswell & Creswell, 2018). Pragmatism was employed because it examines the dynamic context and systems into which evidence-based interventions are integrated; it has an association with qualitative research methods; and it is an action-oriented inquiry process based on commitment to democratic values and progresses (Huffman, 2013; Cameron, 2011; Greene & Hall, 2010).

An exploratory-descriptive qualitative study was used to synthesize the data which was eventually used to inform the development and implementation of the intervention, as well as the evaluation of the implementation of the intervention. The intervention was developed from findings obtained from Cycles One and Two. The results from the scoping review were reported in the article which forms part of Chapter Two. This article examined relevant literature, which provided baseline data regarding the extent of professional isolation among health professionals, thus assisting in the formulation of questions and probing in the subsequent qualitative component (Cycle Two of the study, as reported in Sub-study Three). In collaboration with the research team, the obtained data sets were evaluated, and the

intervention (DCoP) was then developed and implemented using WhatsApp as the platform for interaction.

5.4 RESEARCHER'S REFLECTIONS

In reflecting on my journey, I acknowledge with much consideration the thoughts, memories, hopes and dreams that led me to begin this doctoral journey. I accept the modifications in my thinking, my perceptions and my identity that have occurred in this process and increasingly comprehend how I have come to be. At the beginning of this emancipatory journey, I had to search the literature to acquire my own understating of professional isolation and, hopefully, aid and inspire other emergency nurses. There are many consequences to professional isolation documented in the literature, including job dissatisfaction, burn-out, distrust, fear and frustration (Spilker & Breaugh, 2021; Peng *et al.*, 2022). It has the potential to create defensive, disrespectful and even hostile feelings. As a result, I aspired to act as a pioneer to raise awareness about professional isolation and, by working together with other emergency nurses who may be in the same situation, to find a common solution. Therefore, a mutually collaborative action research study, underpinned by the ENP conceptual framework, was conducted. In collaboration with the research team, a DCoP named 'Emergency Nurses Lesotho' was formed. Emergency nurses continue to interact, sharing knowledge and skills on this WhatsApp platform.

In Cycle Two of this study, it was originally proposed that ENs would be engaged in face-to-face individual interviews to examine their perceptions of professional isolation. However, due to the spreading Covid-19 pandemic, the researcher had to learn to adjust by employing digital and telephonic interviews. Apart from overcoming the anxiety from using telephonic interviews as the novel approach, the researcher encountered some logistical challenges during this period (Appendix O and Q). However, the experience gained from this could be utilised in future endeavours by the researcher and, possibly, other researchers. On deciding to switch to telephone interviews I learned that I was still able to take field notes, write down follow-up questions and reflect on the answers while the participants were talking, as I did not have to engage in social cues. Moreover, when engaging in collaborative action research, which is aimed to emancipate and empower the participants, patience and resilience are especially important. This is because the researcher, who acts as an emancipatory leader, should consider all aspects of the participants and work jointly towards one common goal with the participants. As Charlton (1998) said, "*Nothing for us, without us*."

5.5 UNIQUENESS OF THE STUDY

This study has made a number of contributions: The study has added to the body of knowledge on professional isolation, which is a concept that is under-researched in health professionals globally, and particularly among nurses working in low-resource environments. Most importantly, no studies have been conducted in Africa about professional isolation, particularly among ENs.

This study revealed the perceptions of ENs about their professional isolation and created awareness of the concept, which might inform clinical guidelines and strategies that improve management of professional isolation among ENs and probably other healthcare professionals in the EDs.

An intervention was developed through a series of sub-studies which informed the design, development, implementation, and evaluation of the implementation of the intervention for managing professional among ENs working in low-resource environments. This intervention was developed for a unique and marginalized group in an environment that is generally understudied.

5.6 RECOMMENDATIONS OF THE STUDY

The results from this thesis may inform decision-makers in education, clinical practice and research through the following recommendations:

5.6.1 Recommendations for nursing research

Through this study, it has been revealed that there is limited literature focusing on professional isolation among health professionals in the context of African culture, which presents various challenges. This means that limited attention has been paid to the concept, which is poorly understood, but common in marginalized settings, such as the complex emergency care environment. It is therefore recommended that large scale studies of a similar nature be conducted in Lesotho for a generalized awareness among emergency nurses who are at higher risk of being affected by professional isolation. The study involved a unique research focus and explored the perceptions of professional isolation among emergency nurses, its impact on clinical practice, and ways to alleviate it. It further revealed the internal factors influencing professional isolation. Previous studies on professional isolation have focused on other settings, such as teaching and business. However, interventions for managing professional isolation have not been discussed in depth. By developing an intervention, this study extends the research on the mechanisms for managing professional isolation in low-resource

environments. It is recommended that the intervention be evaluated to establish its strengths and weaknesses. Moreover, there was low engagement of emergency nurses in the WhatsApp group that was designed as a discussion platform. It is recommended that future studies be conducted focusing on strategies for improving professional zeal among emergency nurses in low-resource settings.

5.6.2 Recommendations for clinical practice

Although professional isolation may be experienced by an individual, it is recommended that ENs at professional and organisational level pay attention to the impact it has on practitioners and, subsequently, to the way it harms their practice standards, and patient care provided. They should strengthen their awareness of professional isolation and actively engage in interpersonal communication platforms. It is further recommended that healthcare organizations and government health departments provide support to, and strengthen communication and interaction among, ENs.

5.6.3 Recommendations for nursing education

Findings from this study affirmed the need to prepare emergency nurses with the necessary knowledge and skills to recognize and manage professional isolation, as there are wider implications. It is also recommended that the concept of professional isolation be highlighted in the pre- and post-registration curricula for all nurses, including ENs, and among allied health trainees.

5.7 STRENGTHS OF THE STUDY

The action research approach, the pragmatic paradigm and the Emancipatory Nursing Praxis Model (Walter, 2017) underpinned this study and incentivised the researcher to seek solutions to an actual practical problem. Similarly, the research team was guided to work collaboratively to develop and implement the intervention, to bring about a change in their practice, and to improve ownership of the intervention. The strength of the action research was its ability to involve the participants in comprehensively examining their professional practice, considering their social contexts, thus bringing change in practice through addressing the challenges (Riel, 2019).

An exploratory descriptive qualitative design allowed emergency nurses to share their opinions regarding their professional isolation, particularly as far as their own understanding; to describe the factors that contribute to their professional isolation, including its effects on their clinical practice; and the strategies that can be used to manage it. Additionally, the researcher adopted

measures to avoid researcher bias when analysing the qualitative data by involving two researchers (PB and TS) in the coding of data to ensure consistency between the researcher's interpretation and that of others.

5.8 LIMITATIONS OF THE STUDY

In Cycle One, although every effort was taken to ensure that a comprehensive search was conducted, it is possible that some articles may have been missed. Furthermore, only literature written in English was included, so it is possible that items may have been published in other languages, yet not represented in the findings.

In Cycle Two, this study only focused on ENs working in emergency departments, which may limit the contexts for the implication and application of the results. The restrictions of the Covid-19 pandemic were significantly limiting, as the interview method was changed to telephonic, as opposed to face-to-face interviews; and many of the participants were overwhelmed, distracted and stressed by the pandemic. Moreover, data collection was also affected by the nurses' strikes at one of the settings. Therefore, access to the participants was limited, hence the delay in data collection. Finally, the researcher was known to some of the participants, so this may have introduced an element of sampling bias.

In Cycles Three and Four, the limitations included a small and fairly homogeneous sample, with 19 participants in a similar speciality. Limitations may also be linked to the duration (three months) of the intervention using the DCoP. This was probably not long enough to build rapport between the participants or allow a sense of proprietorship to develop in the community. Although the potential of the DCoP has been demonstrated through the data, the impact of the use of the WhatsApp platform among emergency nurses working in low-resource environments warrants future research.

5.9 CONCLUSION

The four cycles of the study have revealed that professional isolation is an individual experience. However, it is the collective responsibility of the individuals, teams, organizations and professional groups to help alleviate these feelings of professional isolation.

This unique study is a first in a low-resource environment and contributes valuable information on professional isolation among emergency nurses working in these settings. Conducting this study in a resource-limited setting highlighted the possible benefits from its implementation in other settings of a similar nature and showed that a DCoP could be used as an intervention for managing professional isolation. The development and implementation of the intervention was

informed by the literature, and in collaboration with the research team, who were also the emergency nurses.

5.10 REFERENCES

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APPENDICES

Appendix A: Tentative guide for focus groups in Cycle 1a: Establishing the need

The researcher introduced himself to the participants and presented all the relevant information about the study to the participants.

Questions to the participants:

- As nurses working in the emergency departments, what challenges do you experience in your clinical practice?
- Is professional isolation one of the challenges?
- How would you like to go about addressing professional isolation?
- Do you think the proposed research would impact in addressing these challenges in the clinical practice?
- Would you be interested in becoming involved in this research?

Appendix B: Tentative individual interview guide in Cycle 2: Analysing professional isolation

4 As an emergency nurse, what do you understand by professional isolation?

5 What factors do you think contribute to professional isolation?

6 How has it affected you in your clinical practice?

7 What strategies have you used, or do you think can be used, to manage your professional isolation?

Appendix C: Tentative checklist questionnaire in Cycle 4: Assessing the DCoP

Please evaluate the following statements	Strongly Disagree						Strongly Agree
The WhatsApp group provided instant access, regardless of my location.	O	O	O	O	O	O	O
The WhatsApp group was easy to use.	O	O	O	O	O	O	O
In the WhatsApp group, the content provided was useful.	O	O	O	O	O	O	O
In the WhatsApp group, the interactions with supervisors were improved.	O	O	O	O	O	O	O
In the WhatsApp group, the interactions with other emergency nurses were useful.	O	O	O	O	O	O	O
The WhatsApp group connected me better with other emergency nurses.	O	O	O	O	O	O	O
The WhatsApp space helped to bring together our community of emergency nurses.	O	O	O	O	O	O	O
The WhatsApp group facilitated communication with the other emergency nurses.	O	O	O	O	O	O	O
I would recommend other emergency nurses to participate in similar mobile social media groups.	O	O	O	O	O	O	O

Appendix D: Information document

Study Title: Developing a Strategy to Manage Professional Isolation among Emergency Nurses Working in Lesotho: An Action Research Approach

My name is Mahlomola Kutoane, a PhD student at the University of KwaZulu-Natal's School of Nursing and Public Health, Durban, South Africa. I wish to invite you to participate in this study which aims to develop a digital community of practice for managing professional isolation amongst emergency nurses working in low-resource environments. A total of 25 participants are expected to enrol for this study, over four cycles, using five hospitals in the country. The study data collection methods will include the formation of a research team composed of three willing participants; focus group discussions; a scoping review; individual interviews, and checklist questionnaires. In collaboration with all the participants, it is anticipated that a WhatsApp group will be formed, where discussions relating to the practice challenges of the participants will be conducted.

If you decide to participate in this study, you will be asked to sign a consent form. All data will be collected and stored anonymously without an attached contact. Your responses will remain anonymous. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. Your participation in this study is completely voluntary and you can withdraw at any time. There are no anticipated risks involved in this study. However, it has been ethically reviewed and approved by the UKZN Biomedical Research Ethics Committee (approval number) and the Lesotho National Ethics Committee at the Ministry of Health Headquarters.

There will be no direct individual benefit, other than the anticipated knowledge gain in conducting research. Your name will not appear on either the questionnaire or in the transcribed notes from the WhatsApp group discussions, thus always assuring confidentiality. The data obtained from the study will be kept confidential. The electronic data obtained from the research conducted will be kept by the researcher safely, through a password only known to the researcher. All raw data will be kept by the university under lock-and-key for a period of five years; thereafter it will be destroyed.

The results of the study will be fed back to the study participants and relevant stakeholders.

If you have any further questions, you can contact me or my supervisors:

1. Contact details for my supervisors

Prof P Brysiewicz: tel. 031 260 1281

email brysiewiczp@ukzn.ac.za

2. Dr Tricia Scott

+44 (0) 1707 281029

p.scott3@herts.ac.uk

Contact details of researcher:

Mr. M. Kutoane tel. +266 63055057/56554554 email kutoanes@gmail.com

Kind Regards

Mahlomola Kutoane

Appendix E: Consent form

Consent to participate in research

Study Title: DEVELOPING A STRATEGY TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH

I……..have been informed about the study and understood the information sheet on developing a digital community of practice for emergency nurses working in low resource environments.

I acknowledge that I was provided with the opportunity to ask questions and have answers to my satisfaction and I fully understand the purpose and procedures of the study.

I understand my involvement in this research study and that:

- Participation is voluntary.
- I have not been pressurized into participating in any way.
- I may withdraw participation at any time, without giving any reason and without any fear of any penalty.
- I have been informed that I will not receive any compensation for participating in the study.
- I have been informed about the risks involved in the study.
- My name will not appear on either the questionnaire or in the transcribed notes of the individual interviews, thus assuring confidentiality at all times.
- *The interviews will be audio-recorded in order to accurately capture what is said. I may request that the recording be paused at any time and I may choose how much or how little I want to speak during the interview.*
- The data obtained from me is only for the purpose of this study, not for any other use and will be kept confidential.
- However, I am fully aware that the results of the study will be used for scientific and educational purposes and that the results will be published.
- If I have any questions/concerns about my rights as a study participant, or if I am concerned about an aspect of the study or the researchers then I may contact:

HUMANITIES AND SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE
Research Office, Westville Campus

Private Bag X 54001

Durban

4001

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604769 – Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

I therefore willingly and voluntarily agree to participate in this study.

…… Date…… ……date……

Signature of participant Date Researcher's signature

Contact details: (+266) 63055057

kutoanes@gmail.com

Supervisor: Prof P Brysiewicz +27 (0) 31 260 1281 or brysiewiczp@ukzn.ac.za

Core Supervisor: Dr Tricia Scott +44 (0) 1707 281029 or p.scott3@herts.ac.uk

Appendix F: Research Team Agreement

This serves as an agreement between **Mahlomola Kutoane**, the researcher, and [……..] the research team member.

The research team members agree to the following responsibilities of both the researcher and the research team members.

1. The researcher will have the primary responsibility for ensuring the ethical conduct of the research study regarding the protecting human subjects' rights and safety.
2. The researcher will ensure protocol compliance, and adherence to institutional regulations.
3. All research team members are responsible for ensuring that the conduct of the study is compliant with institutional regulations
4. Intellectual property means any data, activities and inventions generated from the team activities remain the property of the researcher.
5. Full confidentiality and protection of participants and information generated during the research process is the responsibility of all research team members.

_____ _____

Signature of researcher and date Research team member and date

For any other queries you can contact

Supervisor: Prof P Brysiewicz +27 (0) 31 260 1281 or brysiewiczp@ukzn.ac.za

Core Supervisor: Dr Tricia Scott +44 (0) 1707 281029 or p.scott3@herts.ac.uk

Appendix G: Letter to obtain permission to conduct research (Ministry of Health of the government of Lesotho)

UNIVERSITY OF
KWAZULU-NATAL

HOWARD COLLEGE

Faculty of Health Sciences

SCHOOL OF NURSING

5th Floor, Desmond Clarence Building.

The Director General

Ministry of Health

P. O. Box 514

Maseru 100

Lesotho

Dear sir/madam

PERMISSION TO CONDUCT RESEARCH

I am honoured to place my request before your respective office with the intentions of conducting research in the areas of your responsibility which are five hospitals in Lesotho namely; Motebang Government Hospital, Maluti Seventh Day Adventist Hospital, Berea Government Hospital, Queen Mmamohato Memorial Hospital and Maseru Private Hospital. The details of my research project are explained on the attached research proposal.

I am a Mosotho PhD student at the University of KwaZulu - Natal in the Republic of South Africa. I am conducting a study titled: DEVELOPING AN INTERVENTION TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH.

I hope my request will reach your utmost consideration

Yours faithfully

……..

Mr. M. Kutoane tel. +266 63055057 email kutoanes@gmail.com

Supervisor: Prof P Brysiewicz +27 (0) 31 260 1281 or brysiewiczp@ukzn.ac.za

Core Supervisor: Dr Tricia Scott +44 (0) 1707 281029 or p.scott3@herts.ac.uk

Appendix H: Letter to obtain permission to conduct research (Private and CHAL Hospitals)

UNIVERSITY OF
KWAZULU-NATAL

HOWARD COLLEGE

Faculty of Health Sciences

SCHOOL OF NURSING

5th Floor, Desmond Clarence Building.

The Hospital Manager

Dear Sir/ Madam

PERMISSION TO CONDUCT RESEARCH

I, **Mahlomola Kutoane**, am currently a PhD student at the University of KwaZulu-Natal in the School of Nursing and Public Health. I would like to conduct research for my doctorate study titled; DEVELOPING A STRATEGY TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH. The details and the purpose of this study are explained in the attached proposal.

The study, participants (emergency nurses) will be required to participate in focus group discussions and in individual interviews.

It is upon this premise I request permission from your respective office to collect necessary data from the participants at your institution.

Yours sincerely

……..

Mr. M. Kutoane tel. +266 63055057 email kutoanes@gmail.com

Supervisor: Prof P Brysiewicz +27 (0) 31 260 1281 or brysiewiczp@ukzn.ac.za

Core Supervisor: Dr Tricia Scott +44 (0) 1707 281029 or p.scott3@herts.ac.uk

Appendix I: Research clearance from UKZN

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

05 June 2019

Mr Mahlomola Kutoane (210509025)
School of Nursing & Public Health
Howard College Campus

Dear Mr Kutoane,

Protocol reference number: HSS/0051/019D
Project title: Developing an intervention for managing professional isolation among emergency nurses working in Lesotho: An action research approach

Approval Notification – Expedited Application

With regards to your response received on 03 July 2019 to our letter of 05 June 2019, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 1 year from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

[redacted]

.....
Dr Rosemary Sibanda (Chair)

/ms

cc Supervisor: Professor Petra Brysiewicz and Dr Tricia Scott
cc Academic Leader Research: Dr Tivani Mashamba-Thompson
cc School Administrator: Ms Carol Dhanraj

Humanities & Social Sciences Research Ethics Committee
Dr Rosemary Sibanda (Chair)
Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Telephone: +27 (0) 31 260 3587/8350/4557 **Facsimile:** +27 (0) 31 260 4609 **Email:** ximbap@ukzn.ac.za / snymanm@ukzn.ac.za / mohunp@ukzn.ac.za
Website: www.ukzn.ac.za

Appendix J: UKZN Research Approval Amendment

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

04 August 2020

Mr Mahlomola Kutoane (210509025)
School of Nursing & Public Health
Howard College Campus

Dear Mr Kutoane,

Protocol reference number: HSS/0051/019D
Project title: Developing an intervention for managing professional isolation among emergency nurses working in Lesotho: An action research approach

Approval Notification – Amendment Application

This letter serves to notify you that your application and request for an amendment received on 30 July 2020 has now been approved as follows:

- Change in data collection method

Any alterations to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form; Title of the Project, Location of the Study must be reviewed and approved through an amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

Best wishes for the successful completion of your research protocol.

Yours faithfully

[redacted]

.....
Professor Dipane Hlalele (Chair)

/dd

cc Supervisor: Professor Petra Brysiewicz and Dr Tricia Scott
cc Academic Leader Research: Dr Tivani Mashamba-Thompson
cc School Administrator: Ms Carol Dhanraj

Appendix K: UKZN Research Approval Renewal Certificate

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

30 September 2021

Mahlomola Kutoane (210509025)
School of Nursing & Public Health
Howard College Campus

Dear M Kutoane,

Protocol reference number: HSS/0051/019D
Project title: Developing an intervention for managing professional isolation among emergency nurses working in Lesotho: An action research approach

Approval Notification – Recertification Application

Your request for Recertification dated 23 September 2021 was received.

This letter confirms that you have been granted Recertification Approval for a period of one year from the date of this letter. This approval is based strictly on the research protocol submitted and approved in 2019.

Any alteration s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study must be reviewed and approved through the amendment /modification prior to its implementation. Please quote the above reference number for all queries relating to this study.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,

[redacted]

Professor Dipane Hlalele (Chair)

/dd

cc Supervisor: Professor Petra Brysiewicz and Dr Tricia Scott
cc Academic Leader Research: Dr Tivani Mashamba-Thompson
cc School Administrator: Ms Carol Dhanraj

Appendix L: Research Approval Ministry of Health of Lesotho

LESOTHO

Ministry of Health
P.O. Box 514
Maseru 100

Category of Review:
[X] Initial Review
[ ] Continuing Annual Review
[ ] Amendment/Modification
[ ] Reactivation
[ ] Serious Adverse Event
[ ] Other _____

REF: ID189-2019

Date: 02 July 2019
To
Mahlomola Kutoane
University of KwaZulu-Natal

Dear Mr. Kutoane

Re: Developing an Intervention for Managing Professional Isolation among Emergency Nurses Working in Lesotho: An Action Research Approach

This is to inform you that the Ministry of Health Research and Ethics Committee, after reviewing your proposal **APPROVED** the proposal and hereby authorizes you to continue the study according to the activities and population specified in the protocol. Departure from the approved protocol will constitute a breach of this permission.

This approval includes review of the following attachments:
[x] Protocol
[x] English Informed Consent document
[x] Data collection form in English
[ ] Participant materials
[x] Other materials: The CV of the PI, Letter of application for clearance and letter from the university

This approval is **VALID** until 03 July, 2020.

Please note that an annual report and request for renewal, if applicable, must be submitted at least 6 weeks before the expiry date.

All serious adverse events associated with this study must be reported promptly to the MOH Research and Ethics Committee. Any modifications to the approved protocol or consent forms must be submitted to the committee prior to implementation of any changes.

We look forward to receiving your progress reports and a final report at the end of the study. If you have any questions, please contact the Research and Ethics Committee at rcumoh@gmail.com (or) 22226317.

Sincerely,

[redacted]

Dr. Nyane Letsie
Director General Health Services

[redacted]

Dr. Limpho Maile
Member of NH-REC

Appendix M: Research Approval Renewal – Ministry of Health

LESOTHO

Ministry of Health
P.O. Box 514
Maseru 100

Category of Review:
[ ] Initial Review
[x] Continuing Annual Review
[ ] Amendment/Modification
[ ] Reactivation
[ ] Serious Adverse Event
[ ] Other _____

REF: ID189-2019 Renew 01

Date: 17th September 2021
To
Mahlomola Kutoane
University of KwaZulu-Natal

Dear Mr. Kutoane

Re: Developing an Intervention for Managing Professional Isolation among Emergency Nurses Working in Lesotho: An Action Research Approach

This is to inform you that the Ministry of Health Research and Ethics Committee reviewed and **APPROVED** the above named protocol for renewal and hereby authorizes you to continue the study according to the activities and population specified in the protocol. Departure from the approved protocol will constitute a breach of this permission

This approval includes review of the following attachments:
[ ] Protocol
[ ] English Informed Consent document
[ ] Data collection form in English
[ ] Participant materials
[x] Other materials: Letter of renewal request and Continuing Review Progress Report dated 16th September 2021

This approval is **VALID** until 17th September, 2022.

Please note that an annual report and request for renewal, if applicable. must be submitted at least 6 weeks before the expiry date. All serious adverse events associated with this study must be reported promptly to the MOH Research and Ethics Committee. Any modifications to the approved protocol or consent forms must be submitted to the committee prior to implementation of any changes.

We look forward to receiving your progress reports and a final report at the end of the study. If you have any questions, please contact the Research and Ethics Committee at rcumoh@gmail.com (or) 59037919/58800246.

Sincerely,

DR. 'NYANE LETSIE
Director General Health Services

DR. LIMPHO MAILE
Member of National Health Research
Ethics Committee (NH-REC)

Appendix N: Gatekeepers Approval 1

Gmail mahlomola kutoane <kutoanes@gmail.com>

Request to conduct research

Mokutu Makara <makaram@mphospital.co.ls> Thu, Sep 12, 2019 at 10:26 AM
To: mahlomola kutoane <kutoanes@gmail.com>
Cc: Maletuka Maraisane <pmaraisane@mphospital.co.ls>

Dear Mahlomola,

Your request is noted.

By copy of this mail the Hospital Matron is mandated to communicate with you regarding this matter, and to ensure that the necessary preparations are made to accommodate your request.

Warm regards,

Mokutu Makara

Hospital Manager

-

MASERU PRIVATE HOSPITAL

Thetsane Hospital Road

Thetsane West

Private Bag A58

Maseru 100

Tel.: (+266) 22310260/1

Fax: (+266) 22310142

Appendix O: Gatekeepers' Approval 2

Maluti Adventist Hospital
A SEVENTH-DAY ADVENTIST INSTITUTION
LESOTHO
Registration No. 2005/229

Private Bag X019
Ficksburg OFS
9730

Tel: (00266) 22540203
Fax: (00266) 22540230

P O Box 11
Mapoteng 250
Lesotho

12th August, 2019

Mr. Mahlomola Kutoane

University of Kwa-Zulu Natal

South Africa

Dear Mr. Kutoane,

RE: "DEVELOPING AN INTERVENTION TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH"

This serves to inform you that Maluti Adventist Hospital Administration Committee (ADCOM) set on the 8th August, 2021 and approved your request to conduct a research study on **"DEVELOPING AN INTERVENTION TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH"** under the following conditions:

- You will take necessary precautions and ensure confidentiality with regard to information shared in confidence by the employees;
- You will inform the hospital of the findings from your studies in order to improve service delivery.

Thanking you in advance for understanding in this regard,

Yours Sincerely,

[redacted]

Mrs Matumelo Tlelima
Manager Nursing Services
Maluti Adventist
Hospital

Sr. Tlelima – Nursing Services Manger – on behalf of ADCOM

"NOT TO BE MINISTERED UNTO, BUT TO MINISTER"

Appendix P: Permission to use ENP Model

Gmail mahlomola kutoane <kutoanes@gmail.com>

using your model

Walter, Robin <WalterR@lssc.edu> Fri, Nov 30, 2018 at 2:39 PM
To: mahlomola kutoane <kutoanes@gmail.com>

Dear Mahlomola,
Thank you for contacting me about using the ENP model. I give you permission, and consider it an honor. Please send me a copy of your study. I would love to read it! Best wishes,

[redacted]

Robin R. Walter PhD, RN, CNE
RN-BSN Program Manager
Lake Sumter State College
9501 U.S. Highway 441
Leesburg, FL 34788
(O) 352 435-6319
(C) 407-257-2646
WalterR@LSSC.EDU

"Education is the kindling of a flame, not the filling of a vessel." Socrates

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From: mahlomola kutoane <kutoanes@gmail.com>
Sent: Friday, November 30, 2018 4:39:54 AM
To: Walter, Robin
Subject: using your model

[Quoted text hidden]
NOTE: Florida has a very broad public records law (F.S. 119). Your e-mail communications with Lake-Sumter State College employees are considered public records and available to the public and media upon request, unless exempted by law.

Appendix Q: Challenges during data collection

MANUSCRIPT FOUR

Kutoane, M., Scott, T., and Brysiewicz, P.: Data Collection Challenges in Emergency Care Settings during the Covid-19 Pandemic: Lessons Learnt (*Accepted for publication in Professional Nursing Today – a professional journal*).

ABSTRACT

Emerging infectious diseases have affected every aspect of medical practice and the advent of COVID-19 in 2019 created a great many challenges for basic scientific research methods. Face-to-face data collection was extremely problematic in any healthcare environment. The emergency departments in low-resource environments, specifically, were severely impacted by the research restrictions, the psychological state of the emergency department staff, and the perceived lack of importance of research in the emergency departments. This paper reflects on the challenges in collecting research data in the emergency departments during the Covid-19 pandemic and provides some suggestions and lessons learnt for other researchers embarking on such a path. Notwithstanding the challenges inherent to virtual platforms, video-calling may be an option for in-person interviewing and can allow for data collection over large geographical areas, even when social distancing measures are not in place. New opportunities were presented, which strengthened the self-reflective nature of action research.

Keywords: *low-resource environments, face-to-face data collection, emergency department, COVID-19, research restrictions*

1. INTRODUCTION

Globally, emerging infectious diseases (EIDs) such as the corona virus 2019 (COVID-19) continue to pose a major threat to public health and create challenges for healthcare systems, despite measures taken to promote disease surveillance and infection control (Lam, Kwong, Hung *et al.*, 2019). Although COVID-19 is not the first EID, its biological and epidemiological properties, coupled with the spread of misinformation, amplified on social media and other digital platforms, have challenged medical and public health to contain it (Volkmer, 2021). The global public health authorities instituted measures to contain its spread which understandably had, and might continue to have, a significant impact on various aspects of human activities and social interactions, including conducting health research (Villarosa, Ramjan, Maneze *et al.*, 2021). It is significant to highlight and reflect on the challenges of conducting in-person research in the emergency departments (EDs) of the low-resource environments during this period. This might serve to provide some suggestions and lessons learnt for other researchers who might well experience such challenges in the future.

EDs remain the primary patient access point for healthcare systems, and they cannot drop or suspend services for any length of time as they play an essential role in delivering universal health coverage (Hollander & Sharma, 2021). The value of EDs is more evident during an outbreak, when the EDs concurrently fulfil surveillance, triage and clinical care functions, such as continuing to manage acute illnesses and injuries (Markwell, Mitchell, Wright *et al.*, 2020; Lam *et al.*, 2019). This distinguishing feature of the EDs, particularly in low-source environments, renders them a challenging area to conduct clinical research, as they present unique methodological and operational challenges (Probst, Caputo & Chang, 2020; Razzak *et al.*, 2019). Clinical research focusing on the EDs in low-resource environments is limited, although these environments carry over 40% of the total burden of diseases resulting from conditions that could be treated with prehospital and emergency care (Hirner, Saunders & Stassen, 2022; Razzak *et al.*, 2019; Millum, Beecroft, Hardcastle *et al.*, 2019). The EDs in low-resource environments are characterised by various research challenges, including limited access to basic research infrastructure, or the availability of a standardized protocols; and few dedicated personnel to collect data, including the recruitment of participants to engage in research (Price, Edwards, Carson-Stevens *et al.*, 2020; Katyal, Kumar, Rajesh *et al.*, 2021).

With the advent of the COVID-19 pandemic and the efforts to contain it through public health measures, social distancing, lockdown, and quarantine measures, the EDs and normal research

processes were severely impacted in many ways (Gallego, De La Rubia, Hincz *et al.*, 2020; Welsch, 2020). Mourad, Bousleiman, Wapner *et al.* (2020) reported that many academic medical institutions in the United States had to suspend all clinical research activities to divert focus to COVID-19-related research and adjust to essential hospital operations. In the low-resource environments where research activities are already limited, with multiple challenges, COVID-19 triggered mammoth setbacks in the research agenda (European Medicines Agency, 2020; Tadesse & Muluye, 2020). The pandemic severely disrupted learning and the research environment as a result of the abrupt termination of access to educational facilities. In-person data collection methods (laboratory experiments, face-to-face interviews, focus groups) became impossible and researchers switched approaches from face-to-face to virtual or telephonic data collection (Katyal *et al.*, 2021; Razzak *et al.*, 2019; Hester, 2020). This paper suggests how in-person data collection can be conducted with these considerations in mind.

1.1 Contextual challenges

COVID-19 has presented unique challenges affecting the reliability of qualitative research which relies completely on the collaboration between researcher and participant (Hall et al., 2021). Qualitative research is aimed at exploring and describing the nature of a phenomenon (Lather & Moss, 2005; Busetto, Wick & Gumbinger, 2020) and face-to-face interaction during data collection is deemed to be vitally important. This is because such a data collection approach enables rapport building, creating open and authentic discussion with research participants, as it has the ability to notice verbal, as well as non-verbal, cues from the participants (Reñosa, Mwamba, Meghani *et al.*, 2021). These social cues might complement the interviewee's verbal response, and encourage further probing questions from the interviewer, and elaboration from the interviewee (Opdenakker, 2006; Dejonckheere & Vaughn, 2019). Furthermore, face-to-face interviews lead to an in-depth interaction with the participants which, in turn, builds rapport and open communication, thus providing reliable and credible data (Busetto *et al.*, 2020). With the disruption in face-to-face data collection processes due to the COVID-19 pandemic, the literature advocated for the use of virtual qualitative research (Hall, Gaved & Sargent, 2021; Lathen & Laestadius, 2021). However, Keen, Lomeli-Rodriguez and Joffe (2022) argued that there is limited comprehensive research focusing on the range of practical, rigorous and ethical considerations arising when adopting, and engaging in, virtual qualitative research.

1.1.1 Access to participants

There are numerous virtual resources for collecting qualitative data, reported in the literature, that may be appropriate in the context of the pandemic, and in developed countries (Lobe, Morgan & Hoffman, 2020; Lathen & Laestadius, 2021). However, there are still important accessibility challenges to overcome in the EDs of low-resource environments. In certain instances, participants might not be accessible due to inadequate network coverage, and in other areas it may be affected by weather conditions. Kimumwe (2021) acknowledged the unique geographical conditions in developing countries, the poor telecommunication infrastructure, and intentional internet disruptions by governments, as far as they have a particular impact on network coverage, free communication and collaboration. Other factors include participants' homelife disruptions, such as childcare, home visits, and domestic animals; or workplace restrictions where mobile phones are not used in the ED of a particular hospital.

According to Price et al. (2020), conducting interviews using online technology raises issues of privacy and confidentiality, as participants may not have private spaces in their homes, and this might prevent participants from answering questions fully and openly. It is also ethically sound to request permission from the participants before conducting WhatsApp video calls, even if informed consent has already been obtained from the participants (Greeff, 2020). In principle, virtual data collection may create a sample selection biased to those with access to telecommunications, particularly during the COVID-19 pandemic, which was beset by various uncertainties. Novick (2008) argued that bias against telephone interviews in qualitative research resulted from the perceived absence of visual cues in telephone interviews; yet they could still provide reliable, quality data.

Acknowledging these challenges, Unnithan (2021) advocated that telephonic interviews remain a better option in times of crises, such as when challenges in conducting face-to-face interviews due to logistical factors, including health and safety measures, are encountered. He argued that COVID-19 has provided an opportunity for researchers to broaden their thinking and embrace methods that were previously underutilised due to their perceived inferiority to face-to-face interviews, such telephonic interviews. The literature (Hall *et al.*, 2021; Lathen & Laestadius, 2021; Lobe *et al.*, 2020) supports his arguments, that adaptive and responsive data collection strategies, pre-planned for times of research crisis, could be adopted, because they are cost-effective, facilitate higher participation rates, and reduce travelling costs for the researcher.

1.1.2 Overwhelmed ED staff

With the increased numbers of patients in the EDs, lack of preparedness, coupled with safety considerations and fear of infection, due to limited personal protective equipment, meant the staff in the EDs were overwhelmed. In the aftermath of the pandemic, this resulted in participants being more reluctant to continue with their participation in the study. Some participants were no longer willing to participate, and some were not accessible on their mobile phones. In other instances, the participants were not available for interviews as they were either quarantined or not available due to unpredictable shift changes. Most importantly, in Lesotho, where the study was conducted, healthcare workers embarked on a nationwide strike, demanding COVID-19 personal protective clothing and risk allowances. This added a further challenge to accessing the participants, as they had no time for research calls.

This finding is consistent with the current literature: Al Hariri, Hamade, Bizri *et al.* (2022) showed that the uncertainties surrounding the COVID-19 pandemic led to the ED staff experiencing feelings of anxiety and fear. Although social media played a vital role in disseminating information about the pandemic, there was also an opportunity to disseminate erroneous, alarmist, and exaggerated information, leading to fear, stress, depression, and anxiety among the healthcare personnel (González-Padilla & Tortolero-Blanco, 2020; Sun, Wang, Song *et al.*, 2021; Al Hariri *et al.*, 2022). During COVID-19, health professionals experienced an unexpected increase in workload in a context of uncertainty and powerlessness, leading to reduced personal accomplishment, absenteeism, and a lack of participation in research (Liu et al., 2020; Giusti et al. 2020).

1.1.3 Lack of perceived importance of research in the EDs of low-resource environments

The majority of the participants believed that their participation in the study, or sharing their thoughts, would not lead to any changes, and they were more concerned about their health and the drastic increase in their workload with the emergence of the disease. They perceived their participation in any study as insignificant, in contrast with their clinical work, due to the increasing mortality of the health workers in the developed countries. One participant commented, during a telephone call;

> "*Mr. K*," calling the researcher by the name, "*are you still busy with your study? We are busy planning for COVID-19 here…It is killing so many health professionals*."

Rahman, Tuckerman, Vorley *et al.* (2021) acknowledged that qualitative research may be faced with environments that are outside the researchers' control; and the context often interacts with the field of research, thus posing a challenge in accessing participants and collecting face-to-face data. This requires that the researcher becomes resilient and adapts to respond to the crises. Incorporating resilience into the research design, and encouraging reflection on research practices, can prompt qualitative researchers to adopt critical reflection in their research process (Rahman *et al.,* 2021). Furthermore, in a situation where there are difficulties in implementing the traditional means of building rapport, the researcher could use networking strategies with the gatekeepers (hospital/nursing service manager), who would facilitate recruitment of participants, or even arrange for telephonic interviews (Marland & Esselment, 2019).

2. LESSONS LEARNT

The following lessons were learned from this experience:

- Be adaptive and responsive. As a researcher, one needs to be aware of what is happening in the research context; and always be willing and flexible to adapt to changes were needed.
- Be open to new ways of doing things. Notwithstanding the problems associated with virtual platforms, video calling maybe an option for in-person interviewing and can allow for data to be collected over large geographical areas, even when social distancing measures are not in place (Lobe *et al.*, 2020); thus, reducing travelling costs for the researcher.
- Networking is fundamental during restrictions to enable negotiation to access and recruit participants through gatekeepers (Marland & Esselment, 2019). This could facilitate the effective establishment of a rapport with the participants.
- Resilience in research methods: Research in the EDs, in the context of a pandemic, requires that the researcher be aware of the challenging nature of the environment and the things that can change, which could lead to delays, and so build a little extra leeway into timelines, where possible (Keen *et al.*, 2022).

3. CONCLUSION

This commentary paper highlighted the challenges of conducting research in the EDs of low-resource environments during the COVID-19 pandemic. In considering the challenges, this paper also suggested some strategies that could be used in overcoming those specifically identified challenges. These observations might provide lessons that can, potentially, be of value to other researchers working in similar contexts to tackle data collection challenges that may emerge in the future.

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Appendix R: Report on Developing a Digital Community of Practice

Cycles Three and Four: Development, Implementation and Evaluation of the Implementation of the Intervention

1. Background

This is a report on developing a digital community of practice for emergency nurses working in Lesotho, which is a low-resource environment. It reports on Cycles Three and Four of a larger mutual collaborative action research study which was underpinned by the Emancipatory Nursing Praxis (ENP) Model (Walter, 2017) as the conceptual framework. Cycle Three aimed to develop an intervention (digital community of practice) for managing professional isolation among emergency nurses working in low-resource environments. Cycle Four implemented and evaluated the intervention among the emergency nurses working in low-resource environments.

The ENP is a theory of social justice in nursing, developed from critical social theory; critical feminism theory; and unitary-transformative and caring nursing theories (Voss, 2018). ENP provides emergency nurses with the aptitude to reflect and act in a fashion that advocates for social justice and human rights, while realizing the complex elements of the context and the critical factors influencing their perceptions of their role in social justice (Chinn & Kramer, 2013; Snyder, 2014). According to Rafii *et al.* (2022), ENP is based on the human environment, as an essential, where the application of knowledge (reflection-in-action and action in-reflection) is the designer for emancipatory human-environment (systemic) change. Moreover, this model is grounded on four empirical philosophical perspectives of the social emancipatory process: becoming, awakening, engaging, and transforming (Valentine *et al.*, 2020). These concepts repeatedly inform and shape each other, occurring and recurring in a variable approach, influenced by the relational context (individual, group, organizational, community, national, and international) and the reflexivity context (descriptive, self-aware, critical, and emancipatory) (Walter, 2017). This spiral provides ongoing, evolutionary, unpredictable and transformative process which allowed the emergency nurses to ascertain, resolve and transform their practice environment.

A CoP is an environment where professionals share a common concern, a set of challenges, or their interests, and develop their knowledge, skills, and capabilities concerning a particular issue in this area by continually interacting as a group (Thoma, Brazil, Spurr *et al.*, 2018). It involves collaborative and collective processes, within the cultural context of the group,

thereby galvanizing and helping individuals and the entire group to grow (Overcast, 2019). In the process, they develop a social identity where mutual values, knowledge, power, language, and other social tools become collective property and the products of the members of the community (Thoma *et al.*, 2018). Furthermore, the desire to share expertise, interests and passion, and getting help from other professionals in the same field, become the primary motivations for participating in a CoP (Mclaughlan, 2021). However, geographic realities and poor communication infrastructure may pose challenges to this natural, communal interaction in a CoP, which can be overcome through a digital community of practice (DCoP) (Thoma *et al.*, 2018; Ghamrawi, 2022).

Internet and mobile devices have become the global communication portal and have allowed DCoPs to become more popular in various sectors, including healthcare (Shaw, Jazayeri, Kiegaldie *et al.*, 2021). According to Thoma *et al.* (2018), a DCoP has similar characteristics to a 'natural' CoP, but its participants interact in a virtual environment, using digital gargets or online communication technologies, such as smartphones, to share knowledge, expertise, and resources. Bissessar (2022) showed that DCoPs offer convenience, where CoP members are able to access their content, and participate in a discussion, regardless of their geographical location. DCoPs utilise a range of digital formats to create a common virtual collaborative space, such as Microsoft teams, teleconferences, videoconferences, and social media like WhatsApp (Fragou, 2020). The Extension for Community Healthcare Outcomes (ECHO) project uses videoconferencing technology to afford rural healthcare providers with a level of interaction and support, commensurate with multidisciplinary teams, to enhance their professional development and decrease their feelings of professional isolation (Arora, Kalishman, Thornton *et al.*, 2016; Struminger *et al.*, 2017). Furthermore, DCoPs have exciting potential as an intervention for managing professional isolation among emergency nurses working in low-resource environments (Kutoane *et al.*, 2021).

Accepting that a lack of contact between a professional and members of profession may lead to professional isolation, advocates for social media to become the primary platform for professional interaction. WhatsApp is a social media platform providing increased collaboration and sharing among its users and was found to be the most-cited digital application in healthcare, used to share sensitive patient information between clinicians (Mars *et al.*, 2019; Barayev *et al.*, 2021). Since its introduction, WhatsApp has been investigated for its importance in building successful communities and sharing knowledge among healthcare workers in various settings, including emergency departments (Barayev *et al.*, 2021;

Ganasegeran, Renganathan, Rashid *et al.*, 2017; Gulacti & Lok, 2017). It was, therefore, highlighted that WhatsApp had perceived benefits in clinical practice (Ganasegeran *et al.*, 2017); while Mars *et al.* (2019) showed that WhatsApp was the most-popularly used social media platform by clinicians because of its simplicity, timeliness and cost-effectiveness.

2. DEVELOPING AN INTERVENTION

Understanding the concepts of ENP and its theoretical basis were essential, as the researchers and participants would benefit from democratic investigation through joint participation in an action-oriented inquiry process, learning about partnerships, collaborations and communities of practice organised around social concerns (Wenger, Mcdermott & Snyder, 2002). Based on the principles of communities of practice, with Etienne and Wenger-Trayner (2015) in mind, the researcher and the research team established a DCoP guided by the five-phase Life Cycle of CoPs model suggested by Lupton *et al.* (2019). The introduction and use of the five-phase Life Cycle of CoPs Model by the participants was not part of the study design but occurred as a result of the support supervision component of the study. The research team also sought a guiding tool to develop DCoP as an intervention. In embracing the principles of the ENP model and collaborative action research, the phases of CoPs involve a collaborative, continuing series of activities to be undertaken in a cyclical fashion, facilitating organizational change and the solution of the problem (Lupton *et al.*, 2019; Walter, 2017).

2.1 Phase 1: Define

Referring to Lupton *et al.* (2019), the researcher approached emergency nurses in the selected settings and introduced the research topic and its purpose, and then invited them in to focus group discussions. In line with the ENP (Walter, 2017), this became Phase One, the define phase, and it formed the needs assessment – which is an essential step in a mutual collaborative, action research study – to gauge emergency nurses' professional interests and needs as they were unaware of professional isolation as an existing problem among themselves. The FGDs enlightened them and challenged the emergency nurses to become conscious of their marginalized social conditions, which are often subtle and hard to recognize, and to change them for the better (Wesp *et al.*, 2018). The needs assessment process assisted in revealing the emergency nurses' professional challenges; current gaps in their knowledge; their areas of expertise; their preferred intervention strategies; their attitudes to collaborating with their colleagues; and their ability to commit to the CoP. The research team was established with

those emergency nurses who demonstrated more interest in spearheading the development of an intervention (Clancy, 2020; Brinton, Chilmonik, Echelberger *et al.*, 2021).

The define phase is the most challenging stage, as the individuals are unaware of their marginalization and are unlikely to intervene or recognize this is happening, because they may not reflect critically on their ostracised social being (Hein & Ansari, 2022). Initially, some of the emergency nurses were reluctant to participate in the focus group discussions because they could not understand, or were not aware of, professional isolation; hence they could not consider it as a challenge. With the background that emancipatory praxis is the core of social justice and guides nursing practice into actions that encourage health and more equitable social conditions (Peart & Mackinnon, 2018), the researcher conducted a workshop on emergency nursing, its evolution and role in the healthcare system. This facilitated awareness and knowledge that would reveal the processes and structures that generate health and social inequities, allowing emergency nurses to reflect on a process of informed actions towards alleviating professional isolation (Peart & Mackinnon, 2018; Brinton *et al.*, 2021; Wesp *et al.*, 2018).

2.1.1 Scoping review

A scoping review of the published and grey literature was conducted to examine the extent, range and nature of existing research studies on professional isolation among health professionals, including the interventions to mitigate it. The scoping review was guided by the methodological framework proposed by Peters, Godfrey, Mcinerney *et al.* (2017), with amendments made to this framework by Aromataris and Munn (2020). The findings showed that there was insufficient research on the definition and origins of professional isolation among health professionals, including the interventions that can be employed. Rural, remote and/or isolated settings significantly predispose health professionals to professional isolation but remain poorly defined. This confirmed the need for further, more systematically, designed research on the concept. Moreover, the scoping review offered a good overview of the interventions that had been conducted, their applicability, and the experiences of the participants. This provided baseline insight for the researcher about the possible mechanisms to consider for developing an intervention to assist in addressing professional isolation among emergency nurses working in low-resource environments.

2.1.2 Focus group discussion

The focus group discussion was conducted to gain a more thorough understanding and knowledge of professional isolation among emergency nurses working in low-resource

environments, thus establishing the need for developing an intervention for managing professional isolation. The inductive, qualitative, content analysis method (Erlingsson & Brysiewicz, 2017; Graneheim & Lundman, 2004), highlighted professional isolation as the emerging theme, and participants expressed their challenges using five categories: namely, feeling isolated; lack of recognition; limited training opportunities; inter-professional collaboration; and lack of resources. It is worth noting that, even though emergency nurses expressed feelings of professional isolation, they were not aware that they might have been experiencing professional isolation. This raised the need to conduct a further study to explore their perceptions of professional isolation. The focus group discussions also facilitated the formation of a three-member research team which helped to guide and support the stages of the study that followed.

2.1.3 Individual interviews

In Cycle Two, a qualitative study aimed to explore the perceptions of professional isolation among emergency nurses working in a low-resource environment using individual interviews which were conducted with 13 participants from five different EDs in the selected hospitals in Lesotho. The data were analysed using qualitative content analysis and revealed an overarching theme of 'feeling like an island', comprised three categories, namely lack of interprofessional collaboration and consultation; skills mismatch; and enforced loneliness. This study, therefore, highlighted that developing and implementing an intervention that explicitly sought to address professional isolation among ENs working in low-resource environments was essential.

2.2 Phase 2: Design

The second phase of the model was designing the CoP, its activities, communication methods and shared resources. The members started, and continued, to engage with one another in some meaningful way to exchange information, resources, and expertise (Lupton *et al.*, 2019). The research team collaborated to review and reflect on the results from the scoping review, the focus group discussions and the qualitative data. These reflections on the findings enabled the research team to draw interpretations and conclusions that informed the design and establishment of the intervention. The research team used the results of the collected data to design, develop and implement a WhatsApp group as a platform (DCoP) aiming to promote emergency nurses' interaction, and thus addressing professional isolation. WhatsApp was used because in two workshops, conducted prior to the implementation of the intervention, it was revealed that WhatsApp was amongst the most standardised digital platforms, and the

participants preferred it to be used as an intervention. Moreover, WhatsApp is a social messaging application with connecting properties and qualities to enable sharing of experience and knowledge among enabled phone users, which made it an interesting platform for the intervention (Ajani, 2021; Della Líbera & Jurberg, 2019). WhatsApp, compared to other instant messaging applications, such as Facebook Messenger, Skype, and twitter, is easy to use and compatible with most digital devices and operating systems (Zarouali, Brosius, Helberger *et al.*, 2021; Moodley, 2019; Alqahtani, Bhaskar, Vadakalur Elumalai *et al.*, 2018).

2.3 Phase 3: Grow

By this phase, the membership and purpose would have been established, and the main focus is on expansion of the CoP (Lupton *et al.*, 2019). In a collaborative meeting with the research team, the intervention was implemented in all five settings and members agreed that all emergency nurses who participated in the focus group discussions and individual interviews (Cycles One and Two) could participate in the intervention. To enrol the participants, a WhatsApp link was sent to all 25 emergency nurses who had participated in the focus group discussions and interviews. Participants who were interested in participating in the study used the link and a total of 19 emergency nurses from the five selected settings volunteered to join the WhatsApp group, 'Lesotho Emergency Nurses'.

It was further agreed in this meeting that the African Federation of Emergency Medicine Nursing Induction Booklet (AFEM NIB) would be used as a framework for weekly topics of discussion in the WhatsApp group. The AFEM NIB was used with the understanding that emergency nursing is a new speciality in the country. We therefore believed that the induction booklet would be a useful tool to guide the discussion in the group. The booklet was developed using various fields of knowledge and has collated the most essential information needed by a novice in the ED, thus providing a meaningful approach to exchange information, resources, and expertise, particularly in low-resource environments.

2.4 Phase 4: Perform

The perform phase of the CoP, focused on how to create activities that would sustain a cycle of participation and contribution among the members. As suggested by Khoza and Marnewick (2021), the research team members maintained the health of the CoP by encouraging simple and informal discussions, thus nurturing confidence and ensuring the rapid flow of communication among the CoP members. The research team, through the support from the research supervisor, acted as moderators of the group. The topics discussed included the nature

and purpose of the WhatsApp group and ground rules for participation. Each week one member of the research team was assigned to facilitate the discussions following the topics from the AFEM Nursing Induction Booklet. The facilitator would encourage participants to share their views about a topic. Different views, experiences, and practice challenges were shared and solved by the group members themselves (Wenger, 2014). Where necessary, the research team provided guidance when the group showed low levels of motivation or could not decide on what to do next; and the overall mentorship was provided by the researcher.

2.5 Phase 5: Transform

This phase included evaluating, recording and communicating the achieved results through assessing the functionality of the DCoP (Bratianu, 2018; Wenger *et al.*, 2002). The DCoP was active from November 2021, is still operating, and all activities in the group are continually monitored. The evaluation of the intervention was done through the analysis of data from the WhatsApp correspondences among the members of the group to determine the nature of the WhatsApp exchanges; and obtain insights into the functionality and transformation of the DCoP. To represent the participants who had participated in the WhatsApp group, out of the 19 participants, five were randomly selected (one from each of the five pre-selected settings). Participants completed a five-point Likert scale checklist, with options ranging from one (strongly disagree) to five (strongly agree) that was hand-delivered. Both WhatsApp group correspondences and the checklists evaluated the three key components that characterize a DCoP (mutual engagement, joint enterprise, and a shared repertoire) among the participants, as suggested by (Wenger, 1998).

3. Results

3.1 Nature of WhatsApp Engagement

In this DCoP, eight participants actively interacted in the WhatsApp group by sharing a total of 710 (421 text; 213 audio; 31 photographic/emoji; and 11 video) messages, as well as 34 files/documents, of which 391 messages were shared by the researcher, 185 by the research team, and only 134 were shared by the participants responding to prompting questions from either the researcher or the research team. No messages were initiated by the participants of the study. Figure 1 shows the type of messages shared by the members of the group, while Figure 2 shows the participants who shared the messages. Figure 2 shows that 55% of the messages were shared by the researcher, 26% by the research team members and 19% by the participants. Moreover, where no messages were initiated, or questions posted, by the participants from

November 2021 when the group was started. It was only in August 2022 that one participant voluntarily shared information on cardiac arrest and basic vital signs. Other participants also responded and provided their views (Figure 3). The beauty of this is that the participant started the discussion like it was a 'play' when she posted an animated sticker of two cats conducting CPR. This motivated participants to freely share their views and engage in the discussion. This implies that change of practice occurs over a period of time and requires understanding and patience.

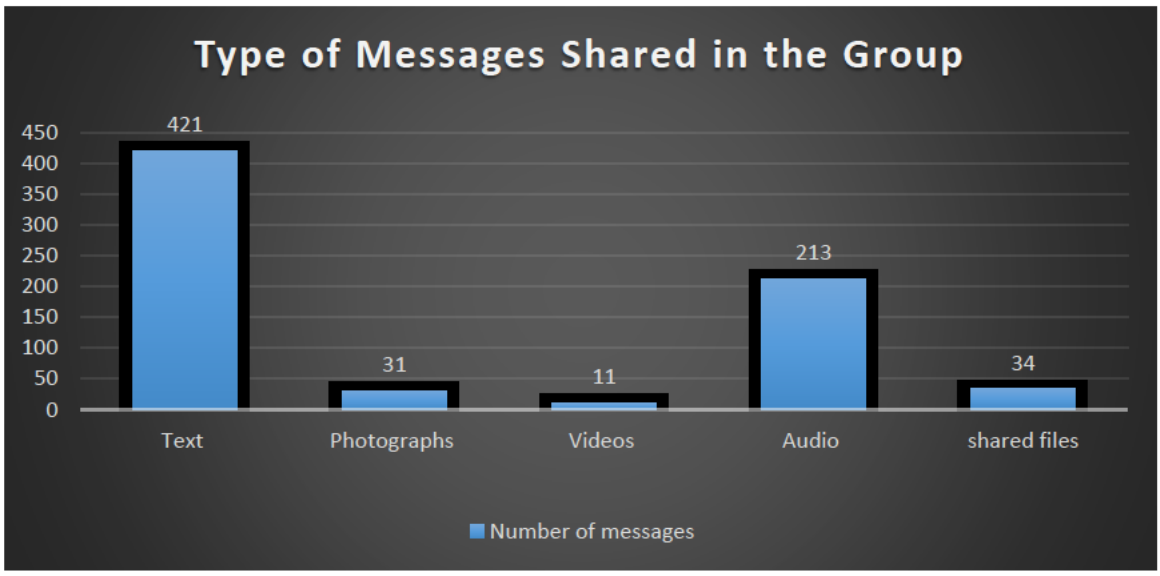

Fig. 1: *Types of messages shared in the WhatsApp group from Nov 2021 to Jan 2022*

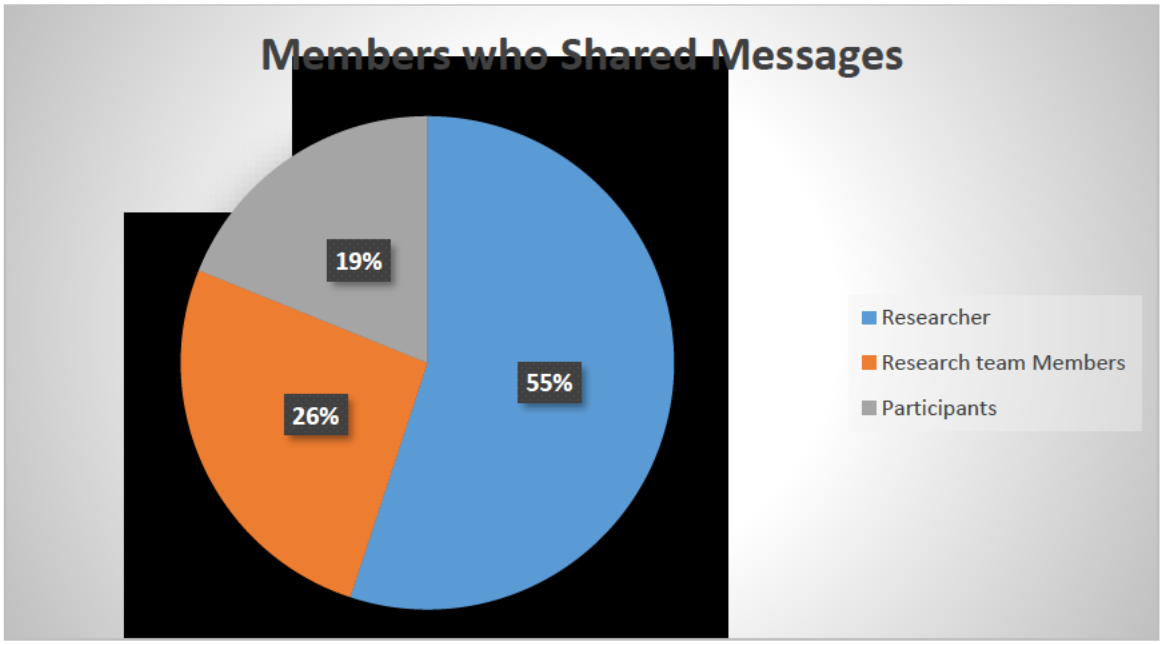

Fig. 2: *Members of DCoP who participated and shared messages in the WhatsApp group*

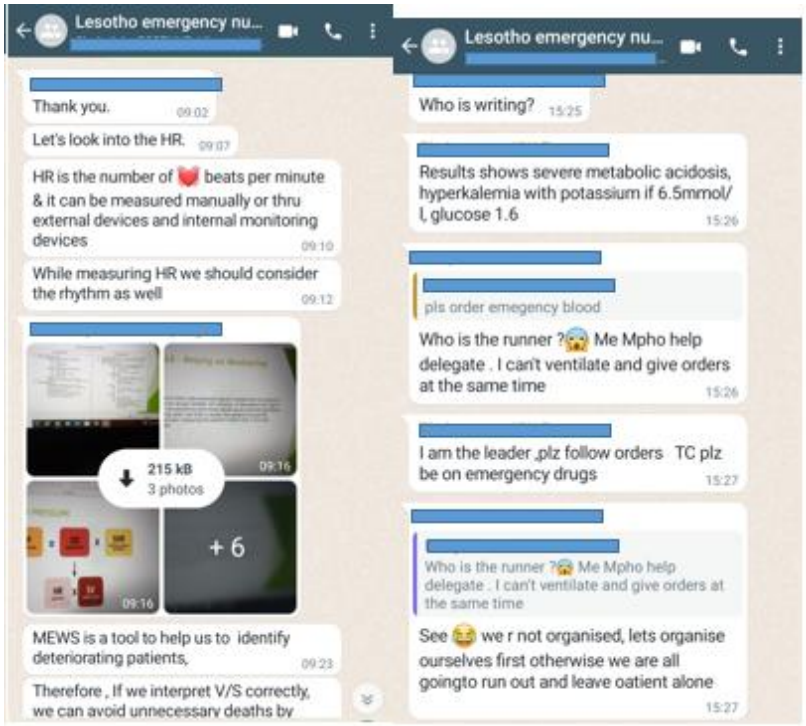

Fig. 3: *An example of messages shared by the WhatsApp group members*

3.2 Mutual engagement

This study indicated that the DCoP evolved into a collaborative platform for the ENs, as shown by the ability of members to interact, set norms, have expectations, and develop relationships. Participants had an opportunity for mutual engagement through discussions and sharing information resources related to their own clinical practice; and they discussed subjects and challenges linked to the field knowledge that they had difficulty in addressing. Figure 3 is an example of the discussions and exchange of knowledge and resources between the participants.

3.3 Joint enterprise

By considering the scores of all nine assessment questions, all five participants answered that they strongly agreed that the WhatsApp group facilitated their communication with the other ENs and their interactions with other emergency nurses were useful. Some participants (three) agreed that in the WhatsApp group the content provided was useful, and therefore they would recommend other emergency nurses to participate in similar mobile social media groups. By participating in this intervention, the participants embarked on a joint enterprise towards a shared goal and spoke with the same voice that WhatsApp facilitated in their interaction.

Table 1: Participants' Assessment of the DCoP

Please evaluate the following statements	SD	DA	NS	A	SA
The WhatsApp group provided instant access, regardless of my location.				1	4
The WhatsApp group was easy to use.			1	2	2
In the WhatsApp group the content provided was useful.			1	3	1
In the WhatsApp group, the interactions with supervisors were improved.			3	1	1
In the WhatsApp group, the interactions with other emergency nurses were useful.					5
The WhatsApp group connected me better with other emergency nurses.					5
The WhatsApp space helped to bring together our community of emergency nurses.			2	1	2
The WhatsApp group facilitated communication with the other emergency nurses.					5
I would recommend other emergency nurses to participate in similar mobile social media groups.			2	3	

3.4 Shared repertoire

The presence of a shared repertoire in this DCoP was evidenced by the participants as they jointly agreed that the DCoP provided access to authentic and relevant information that is not controlled by time or place and can be accessed according to the member's needs. They might, therefore, recommend it to other ENs. At the beginning, some ENs did not understand the concept of professional isolation and the need to engage in the study, as they were not even aware of the concept. However, with the passage of time, they shared knowledge and learning experiences as well as resources and activities that have been moulded for their professional development.

4. DISCUSSION

This study suggests that a digital platform, such as a WhatsApp group for emergency nurses working in low-resource environments, may facilitate a critical understanding of their clinical practice. It demonstrates that emergency nurses may encounter common challenges in their clinical practice, including professional isolation. However, they need to work collectively to address issues and support each other's growth (Alqahtani *et al.*, 2018). Therefore, the WhatsApp group produced a safe platform for this to occur, by sharing their practical experiences and concerns about their practice. In this process of knowledge development and sharing, professional isolation would be reduced. This study, therefore, confirms that a DCoP

is an efficient platform for peer learning among emergency nurses who can constantly engage and receive real-time professional support (Della Líbera & Jurberg, 2019).

Our findings reveal that change of practice or transformation is an ongoing process that occurs over a period of time. When introducing technology to a community of practice, Ratcheva, Stefanova and Nikolova (2006) warned that, although a DCoP could support the actual practices and daily tasks of the participants, establishing a DCoP to host emergency nurses for the exclusive purpose of engaging with each other may not guarantee its success. In this digital atmosphere, various forms of discussion enable engagement to breed collective knowledge and resources that would profile and enhance their practice competencies. Moreover, voluntary membership in a DCoP does not always guarantee a high level of engagement, without also considering other factors that can impede or encourage participation. Young (2013) argued that transformation is a highly personal and individual work that arises over time, involving the development of skills and attitudes. Bagdonaite-Stelmokiene and Zydziunaite (2015) affirmed that "*change occurs over time and often is impartial".* It occurs when individuals open their minds to new perspectives and worldviews which allow change to occur within. It was not in the aim of this study to determine the factors that improve or decrease engagement and participation in a DCoP, which may be linked to the reluctance to participate in the group. However, Haas, Abonneau, Borzillo *et al.* (2021) suggested that the level of vigour and enthusiasm of individuals in communities of practice is, to a degree, influenced by their engagement in their jobs and by their perceived value of the community of practice to their work. Similarly, Dung and Manh (2020) affirmed that professional vigour and enthusiasm (political zeal) are shaped by a combination of professional assertiveness, knowledge, attitude, skills and courage.

5. CONCLUSION

The evidence from this study suggests that emergency nurses working in low-resource environments can benefit from DCoP as an intervention for managing professional isolation among themselves. The findings reveal the relevance and role of WhatsApp as a platform and communication tool for emergency nurses that improves communication. Most importantly, it significantly enhances the ease of communication between a geographically dispersed community of emergency nurses. However, attention needs to be paid to factors that contribute to DCoP members' engagement, particularly in low-resource environments. It is of paramount importance to involve key stakeholders in the emergency settings to explore and describe

mechanisms for building professional zeal among emergency nurses as an aid to managing professional isolation.

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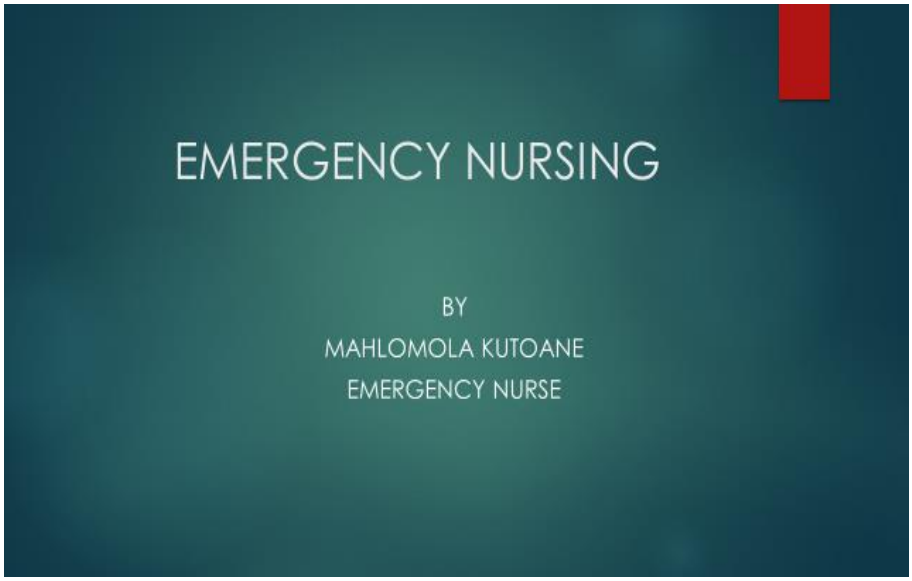
Appendix S: Presentation on Emergency Nursing

Introduction to emergency nursing – Sept 2020

Slide 1



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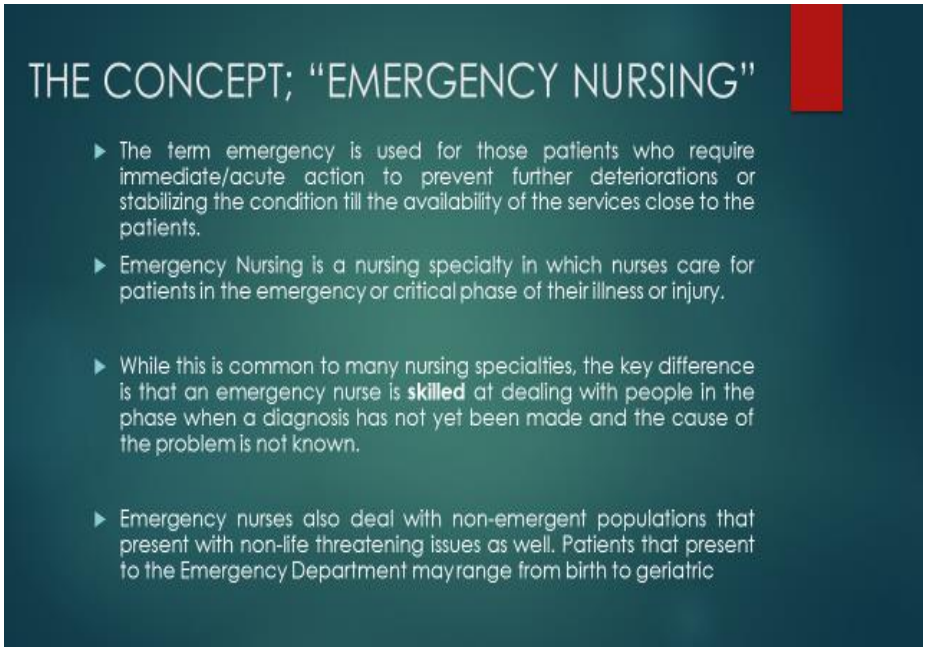

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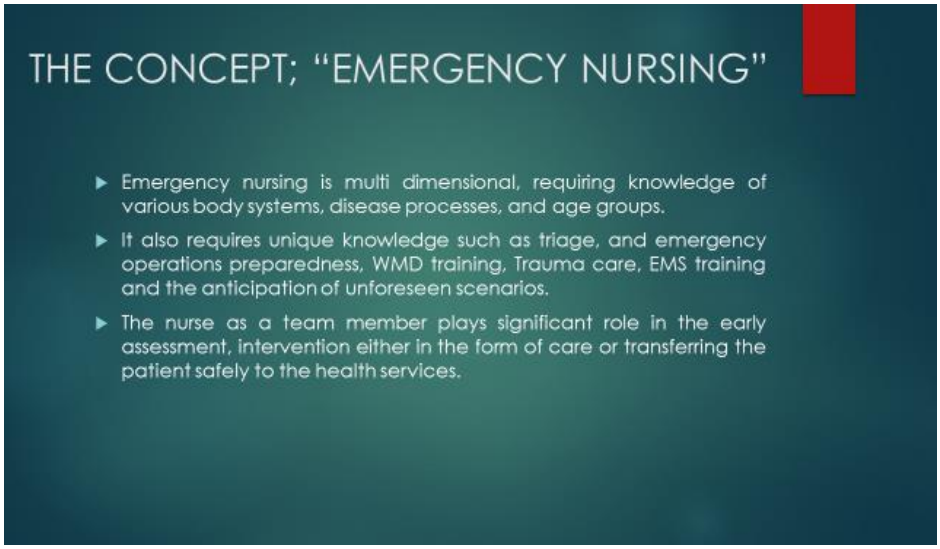

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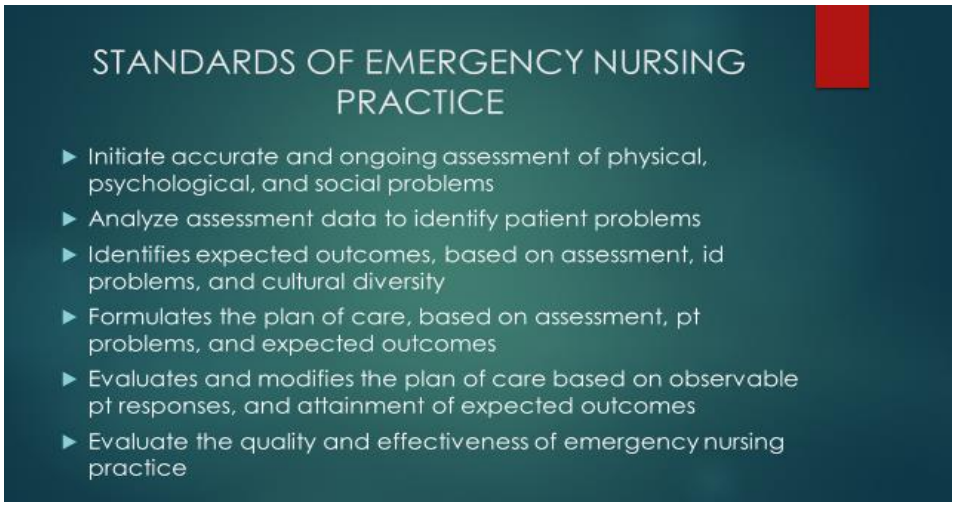

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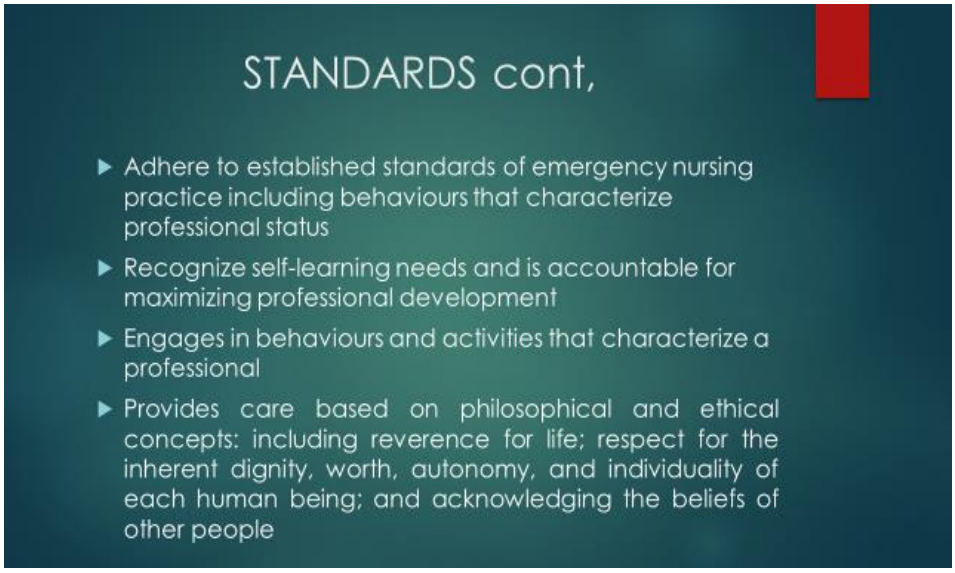

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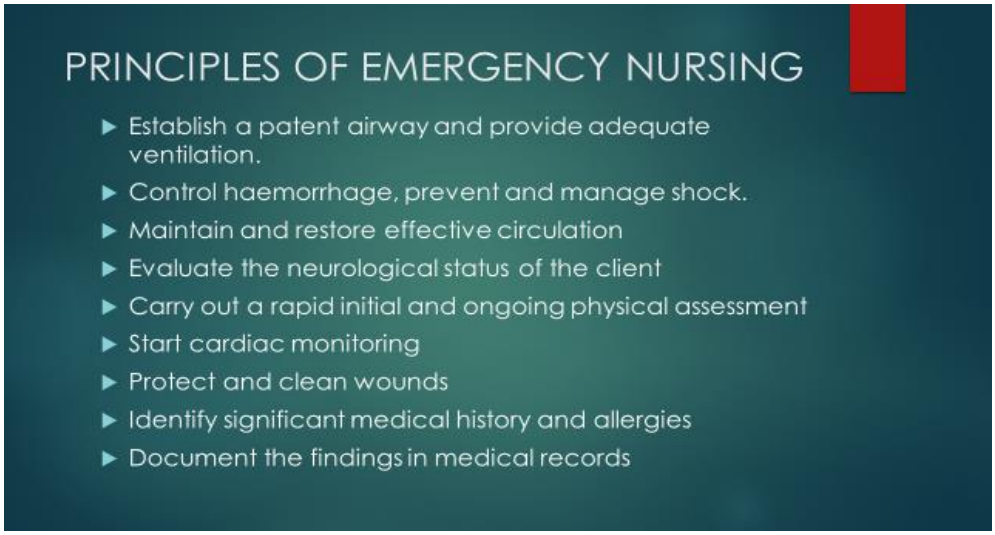

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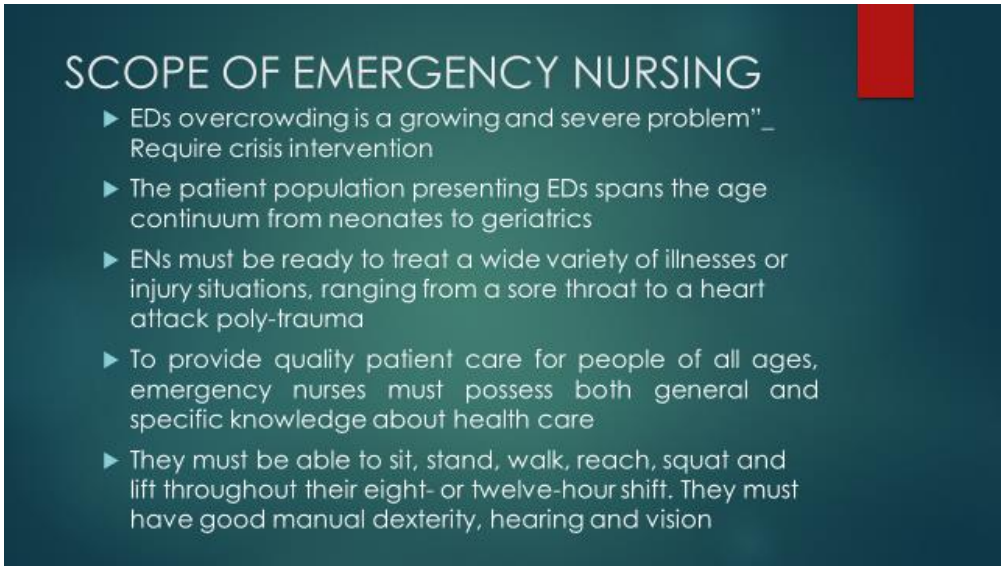

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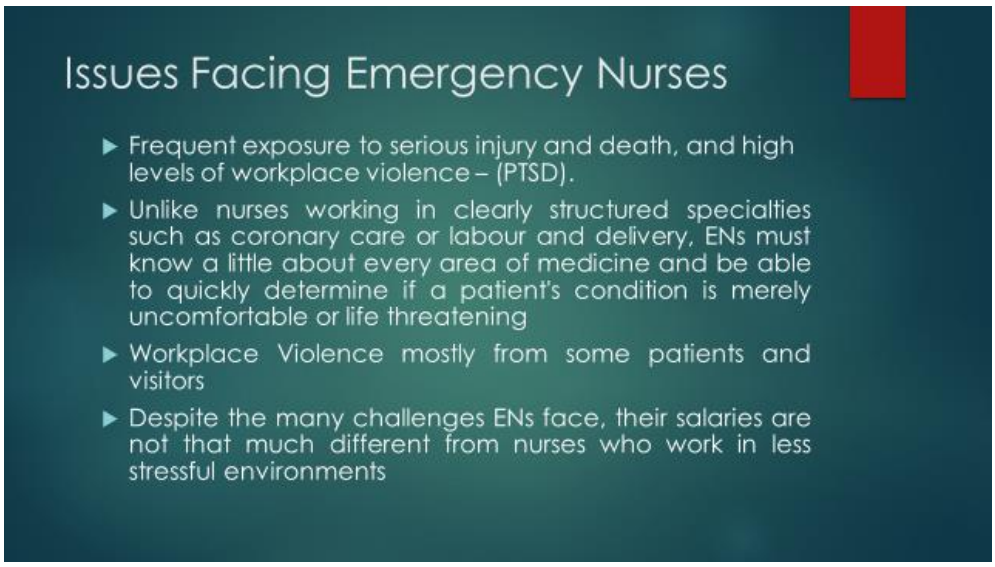

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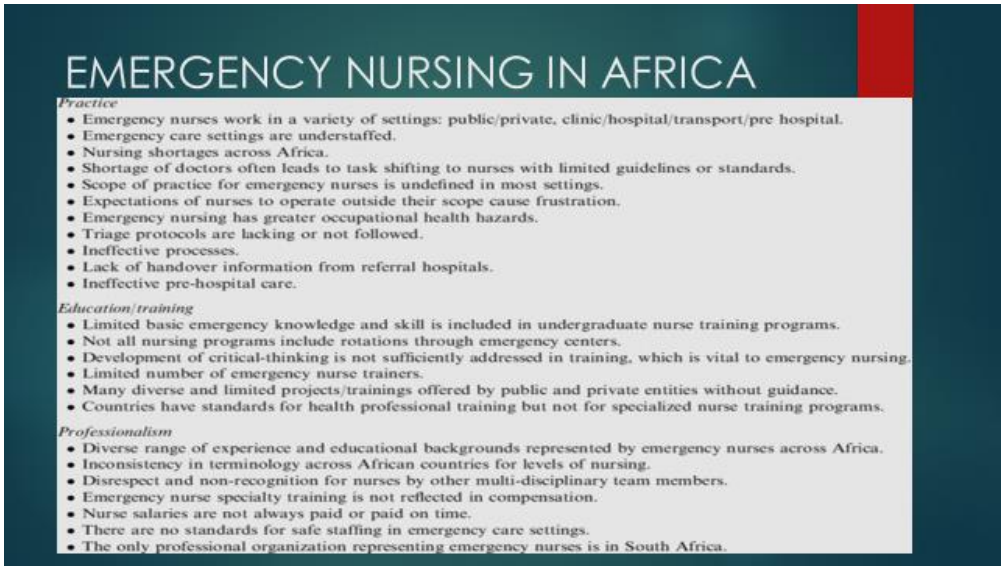

Slide 10

Appendix T: Editor's Letter

ETHEL ROSS

English language editing and proofreading

2 May 2023

To whomever it may concern:

This letter serves to confirm that I worked as the proofreader and language editor on Mahlomola Kutoane's Ph.D. thesis:

DEVELOPING AN INTERVENTION TO MANAGE PROFESSIONAL ISOLATION AMONG EMERGENCY NURSES WORKING IN LESOTHO: AN ACTION RESEARCH APPROACH

In no way did I change the content.

Yours faithfully

Ethel Ross (BA Hons; H Dip Ed)

Email: clanross1@icon.co.za Tel: 083 954 5412