REVIEW

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

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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"
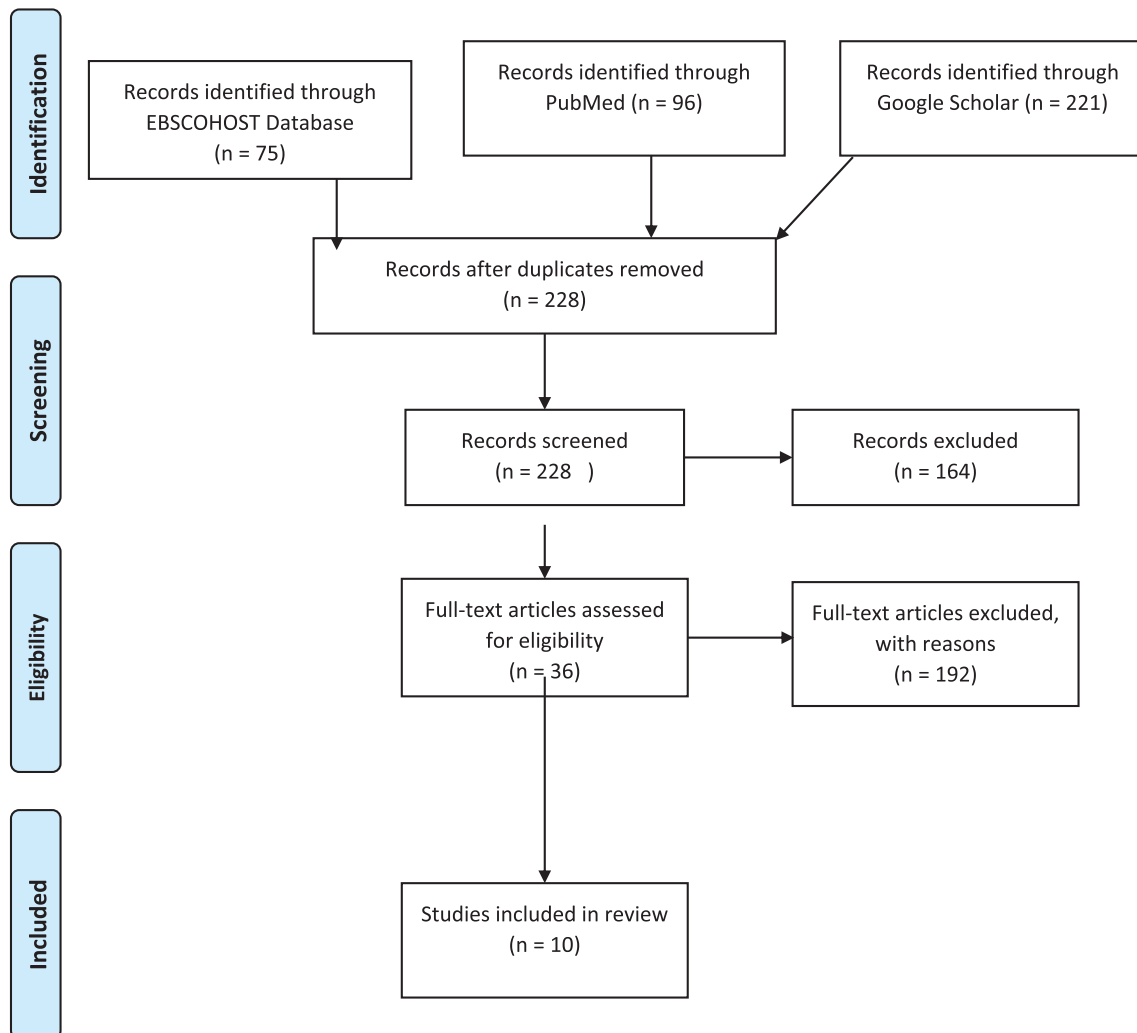
FIGURE 1 PRISMA Diagram of screening process and outcome

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		
Author(s)	Year	Country (context)	Name/type aim of intervention	Instruments used/mechanism of delivery	Population (sample size)	Intervention	Study	Recommendations
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
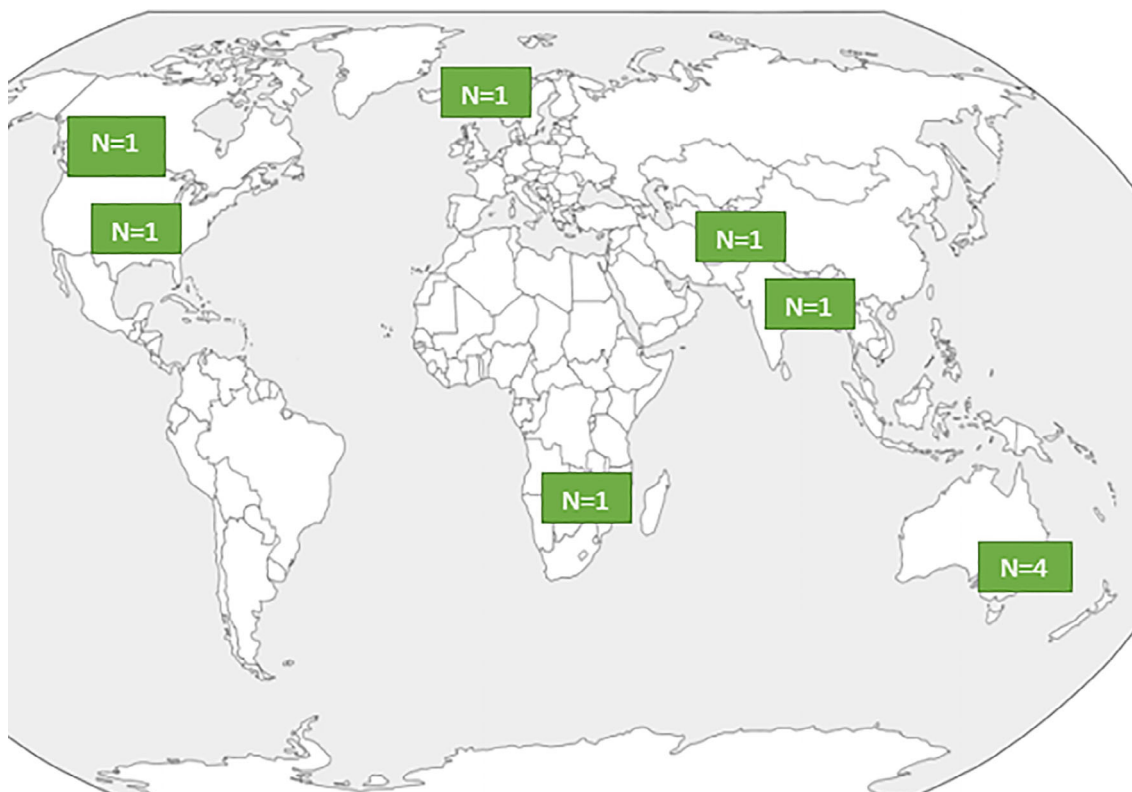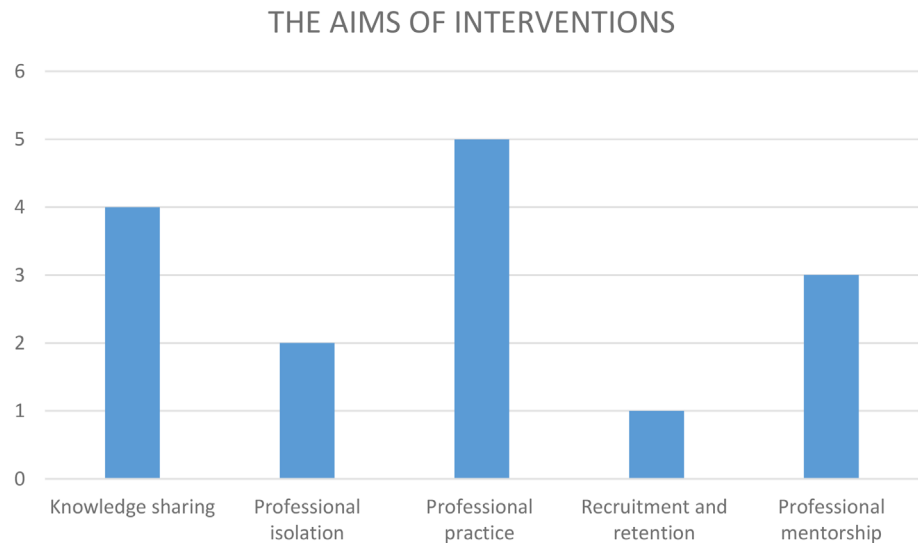

FIGURE 2 Publications by location. Australia 4, Canada 1, India 1, Norway 1, Pakistan 1, United States 1 and Zambia 1

FIGURE 3   Aims of the interventions

THE AIMS OF 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
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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.

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