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Wound management provided by advanced practice nurses: a scoping review protocol

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ABSTRACT

Objective: The objective of this review is to examine the current state of the literature regarding wound care provided by advanced practice nurses globally. Specifically, this review will examine the similarities and differences in the wound care practice of nurse practitioners, clinical nurse specialists, advanced practice nurses, and advanced practice registered nurses.

Introduction: Advanced practice nurses have graduate education and advanced scope of practice. The addition of advanced wound care training provides unique opportunities for advanced practice nurses to provide wound care.

Inclusion criteria: This review will consider advanced practice nurses who are nurse practitioners or registered nurses with graduate education and advanced training (certification/education) in wound care. The wound care can be provided independently or as a part of a team, in any setting.

Methods: The proposed review will be conducted in accordance with the JBI methodology for scoping reviews. The databases searched will include MEDLINE, CINAHL, ProQuest Nursing and Allied Health, Cochrane Database of Systematic Reviews, and Scopus. To reflect changes in advanced practice nursing scope of practice, searches will be limited to articles published from 2011. Articles in languages other than English will be translated. Titles and abstracts will be independently reviewed by two reviewers, relevant sources will be retrieved in full and reviewed. Any disagreements will be resolved through discussion or with an additional reviewer. The similarities and differences in wound care practice (type of wound, practice setting, treatments) will be extracted using a data extraction tool. Any modifications will be detailed in the scoping review. Extracted data will be presented in a descriptive format.

Keywords: advanced practice nurse; clinical nurse specialist; nurse practitioner; wound care; wound management

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Introduction

Improving health care systems requires the use of innovative models of care globally. Advanced practice nurses (APN) have additional graduate education¹ and advanced scope of practice.^{1,2} The addition of advanced wound care education provides APNs with the ability to provide wound care independently or as part of a interprofessional team. This review seeks to examine the current state of the literature regarding wound care provided by APNs globally.

Advanced practice nurses are defined differently based on geographical location. The term APN is

an umbrella term that includes nurse practitioners (NP) and registered nurses (RN) who have graduate education and specialized clinical expertise, and who provide comprehensive care through direct and indirect activities.¹ According to the International Council of Nurses, APNs are NPs and clinical nurse specialists (CNS) who have a minimum of a master's level of education, a protected title, and country-specific regulatory mechanisms for practice.³ In the United States, APNs are also referred to as advanced practice registered nurses (APRN).³ The APN competencies focus on comprehensive care, optimizing health system, education, research, leadership, and consultation or collaboration.¹ Although the role varies by country, APNs have practice regulations authorizing them to diagnose conditions, prescribe medications, order diagnostic

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testing and therapeutic treatments, make referrals, and admit and discharge patients.³

Nurse practitioners

The role of the NP is recognized globally. Countries with NP include Australia, Botswana, Canada, Dominica, Ghana, Grenadines, Hungary, Israel, Jamaica, Kenya, New Zealand, the Republic of Ireland, Oman, St Lucia, St Vincent, Tanzania, Uganda, the United Kingdom, and the United States.³⁻⁶ Regulatory bodies define the practice standards and controlled acts that authorize NPs to provide wound care independently or collaboratively; the authority granted by regulatory bodies varies depending on the country. In some countries, NPs have been given the authority to diagnose conditions, order and interpret diagnostic tests, prescribe medications (including controlled substances), provide treatments, and consult or refer to specialists.^{2,3}

Globally, roles vary and NPs most often perform advanced health assessments, diagnostic testing, screenings, and prescribe medications.⁶ In these countries, the role of the NP is directed towards prevention, health education, monitoring chronic disease, and coordination of care.⁶ Nurse practitioners work autonomously with client populations in various health care settings, including clinics, primary care, acute care facilities, rehabilitative, curative and palliative, private physician practices, nursing homes, schools, colleges, and public health departments.^{4,7,8}

Nurse practitioner specialization in wound care is most evident in Australia. Flinders Medical Centre in Australia was the first hospital in the state to develop and support the NP as a wound management consultant in 1997.⁹ The NP provided wound care to inpatients throughout their hospitalization and provided outpatient and community consultation at discharge. The NP used a multidisciplinary approach to meet the complex wound care needs of these patients. In March 1999, 11 NP models, including wound care, were funded by the Victorian Ministry for Health. In 2001, the Australian Capital Territory funded a trial involving an NP wound care model of care.¹⁰

The literature demonstrates that NPs provide accessible,¹¹ cost-effective,^{11,12} evidenced-based, safe, and effective care.¹³ They practice collaboratively within a health care team.¹⁴ Nurse practitioners have the skillset to evaluate and treat wounds while managing the patient's overall care and making specialist referrals as appropriate.^{15,16} Nurse practitioners can act as

coordinators of patient care in acute settings to community care.¹⁷ They function as consultants, educators, and researchers,¹² thereby making NPs a vital component in multidisciplinary wound care teams.¹⁸ Globally, NPs provide wound care in various settings, including emergency departments (EDs),¹⁹⁻²¹ long-term care facilities,²² military,²³ urology clinics,²⁴ primary care,²⁵ and community settings.⁹

Clinical nurse specialists

Clinical nurse specialists are RNs who have a master's³ or doctoral degree.²⁶ The CNS has clinical expertise to support and educate interdisciplinary staff and facilitate innovation in the health care system.³ Competencies specific to CNS include requirements for clinical care, systems leadership, advancement of nursing practice, evaluation of programs, and support research.²⁷ Additionally, CNSs provide clinical care in a specialized field of nursing, providing health promotion, risk reduction, and management of disease or illness, including diagnosis and treatment. Likewise, CNSs design, implement, and evaluate programs of care and research.³

Literature regarding CNSs often interchange the terms "CNS" and "specialist."³ Additionally, nurses without graduate education (master's/doctoral degree), but who have additional training in a specialized field, such as wound care, are often called specialized nurses, further confusing the use of the term "CNS."³ Furthermore, there are global variations in APN credentialing and not all countries have included CNS as a protected title.²⁸ Role uncertainty and an ill-defined scope of practice result when there is not a defined process for education and credentialing.^{1,3} The result is confusion for nurses and the public.

The variations in the CNS/specialist terms make it difficult to determine which countries have a defined CNS role. Examples of countries with established CNS roles include sub-Saharan African countries, Canada, Iceland, Japan, the Republic of Ireland, South Korea, Switzerland, Taiwan, Thailand, and the United States. Chile, New Zealand, Turkey, and the United Kingdom do not have an established CNS role or use the title "specialist."³

Wound care education

There are variations in education specific to wound care ranging from workshops to undergraduate or graduate education.²⁹ An example of a certification, available in the United States and Canada, is a

certified wound ostomy continence nurse (CWOCN). This additional wound care education can result in improved clinical outcomes which will ultimately reduce costs.³⁰ A CWOCN provides direct care and may be an educator, researcher, or consultant.³⁰

Improving global wound care requires innovative use of health care providers and models of care. Advanced practice nurses specializing in wound care are an ideal choice to help fill gaps in services and to provide evidence-informed wound management. The information from this review will provide insight into APNs' practice of wound care globally. Global recognition and development of the APN wound care practice may lead to certification through regulatory boards. A preliminary search of MEDLINE, the Cochrane Database of Systematic Reviews, and *JBI Evidence Synthesis* was conducted and no current or in-progress systematic reviews or scoping reviews on the topic were identified.

This scoping review will examine and map the emerging evidence and provide an overview of this important topic. The objective of this scoping review is to examine the current state of the literature regarding wound care provided by APNs globally.

Review question

What are the similarities and differences for APNs' (NP, CNS, APN, APRN) wound care practice regarding i) types of wounds, ii) practice settings, and iii) treatments provided?

Inclusion criteria

Participants

This scoping review will examine and map the emerging evidence to provide an overview of wound care provided by APNs. Participants will include APNs who are NPs or RNs with graduate education (minimum of a master's level education), a protected title, and country-specific regulatory mechanisms for practice. Additionally, they require advanced training (certification/education) in wound care. This review will not consider RNs who have an undergraduate education only as they do not have an advanced scope of practice.

Concept

The review will examine the similarities and differences of APNs' wound care practice regarding i) types of wounds (eg, ulcer, abrasion, post-operative), ii) practice settings (eg, hospital, community),

and iii) treatments provided (eg, laboratory, diagnostic tests, medication, dressing).

Context

The context is APNs who provide wound care in any setting.

Types of sources

This scoping review will consider both experimental and quasi-experimental study designs, including randomized controlled trials, non-randomized controlled trials, before and after studies, and interrupted time-series studies. In addition, analytical observational studies including prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies will be considered for inclusion. This review will also consider descriptive observational study designs including case series, individual case reports, and descriptive cross-sectional studies for inclusion.

Qualitative studies that focus on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research, and feminist research will be considered. In addition, systematic reviews that meet the inclusion criteria, and text and opinion papers will also be considered for inclusion in this scoping review.

Methods

The proposed review will be conducted in accordance with the JBI methodology for scoping reviews,³¹ and in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR).³²

Search strategy

The search strategy will aim to locate both published and unpublished studies. An initial limited search of MEDLINE (Ovid) and CINAHL (EBSCO) was undertaken to identify articles on the topic. The text words contained in the titles and abstracts of relevant articles, and the index terms used to describe the articles, were used to develop a full search strategy for MEDLINE (Ovid; see Appendix I). The search strategy, including all identified keywords and index terms, will be adapted for each included database and/or information source. The reference list of all included sources of evidence will be screened for additional studies.

Advanced practice nurses have a protected title and country-specific regulatory mechanisms for practice.³ There are global differences in the implementation of APN roles, with some countries implementing the role in the 1960s or 1970s (United States, Canada, United Kingdom), while other countries are still in the initial phases of implementation.⁶ Additionally, regulatory changes for APNs impact the provision of wound care. Specifically regulations to prescribe medications is continually evolving worldwide, with countries such as Canada making changes as recently as 2018.² Likewise, technology is continually evolving with regular advancements in products that impact treatment plans. Therefore, to reflect the more recent practice, searches will be limited to articles published from 2011. Articles that are not written in English will be translated.

The databases to be searched include MEDLINE (Ovid), CINAHL (EBSCO), ProQuest Nursing and Allied Health (ProQuest), Cochrane Database of Systematic Reviews (Ovid), and Scopus (Elsevier). Sources of unpublished studies/gray literature to be searched include ProQuest Dissertations and Theses. The trial registers to be searched include Cochrane Central Register of Controlled Trials (Ovid).

Study selection

Following the search, all identified citations will be collated and uploaded into Zotero v.5.0.96.2 (Corporation for Digital Scholarship and Roy Rosenweig Center for History and New Media, VA, USA) and duplicates will be removed. Potentially relevant sources will be retrieved in full, and their citation details imported into Covidence (Veritas Health Innovation, Melbourne, Australia). Titles, abstracts, and full texts will be screened in Covidence by two or more independent reviewers, with an additional reviewer available to resolve any disagreements. All reviewers screening every article negates the need for pilot testing of a few articles.

The full text of selected citations will be reviewed against the inclusion criteria by two or more independent reviewers. Reasons for exclusion of full texts that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion or with an additional reviewer(s). The results of the search and the study inclusion process will be reported in full in the final

scoping review and presented in a PRISMA flow diagram.³³

Data extraction

Data will be extracted from papers included in the scoping review. Pilot testing will be undertaken by two or more members of the review team on at least three studies to ensure accuracy in capturing data. Once selected, papers will be reviewed by two or more independent reviewers using a data extraction tool developed by the reviewers. The extraction tool will allow comparison of the similarities and differences of APN wound care practice globally.

Extracted data will include specific details regarding the characteristics of the APN, participants, concept, context, study methods, and specific details regarding similarities and differences for APNs' wound care practice regarding types of wounds, practice settings, and treatments provided. A draft extraction form is provided (see Appendix II). The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included evidence source. Modifications will be detailed in the scoping review. Any disagreements that arise between the reviewers will be resolved through discussion or with an additional reviewer(s). If appropriate, authors of papers will be contacted to request missing or additional data, where required.

Data analysis and presentation

The findings will be examined for relevance by members of the review team who are advanced practice nurses with wound care expertise. Extracted data will be presented in a descriptive format with tables used to summarize the findings. Presentation will align with the objective of this scoping review, which is to examine the current state of the literature regarding wound care provided by APNs globally. The table will outline characteristics of APNs, and similarities and differences of APNs' wound care practice related to "wound type," "setting," and "treatment."

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PROOF

Appendix I: Search strategy

MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions(R) <1946 to May 17, 2021> (Ovid)

Date searched: May 2021, 18

#	Query	Results retrieved
1	wound healing/ or "wounds and injuries"/ or ("wound care" or "care, wound" or "wound management" or "management, wound" or "wound treatment" or "treatment, wound" or ulcer or wound or wounds).ti,ab,kw.	401,444
2	exp nurse practitioners/ or advanced practice nursing/registerd nurse or nurse clinicians/ or ("nurse practitioner" or "nurse practitioners" or "nursing practitioner" or "nursing practitioners" or "practitioner, nurse" or "practitioners, nurse" or "practitioners, nurses" or "advanced practice nurse" or "advanced practices nurses" or "advanced practice nursing" or "nurse, advanced practice" or "nurses, advanced practice" or "nursing, advanced practice" or "nursing practice, advanced" or "clinical nurse specialist" or "clinical nurse specialists" or "clinician, nurse" or "clinicians, nurse" or "nurse clinician" or "nurse clinicians" or "nurse specialist, clinical" or "nurse specialists, clinical" or "specialist, clinical nurse" or "specialists, clinical nurse").ti,ab,kw.	33,943
3	1 and 2	637
4	Limit 3 to english language and yr="2011 – Current"	195

Appendix II: Draft data extraction instrument

Scoping review details	
Scoping review title	
Review objective/s	
Review question/s	
Inclusion/exclusion criteria	
Population	
Concept	
Context	
Type of study	
Study details and characteristics	
Study citation details (eg, author/s, date, title, journal, volume, issue, pages)	
Country	
Context	
Participants' details (eg age/sex and number and characteristics of APN)	
Details/results extracted from study (in relation to the concept of the scoping review)	
Global similarities and difference in APN global wound care regarding: 1. types of wounds 2. APN practice setting 3. treatment provided	

APN, advanced practice nurse.