

Research Article

Scope of Practice for Occupational Health Nurses: A Concept Analysis Based on Walker and Avant Methods

Colette C. Onyeador  and Reba A. Umberger 

Loewenberg College of Nursing, The University of Memphis, Memphis, TN 38152, USA

Correspondence should be addressed to Colette C. Onyeador; cnyeador@memphis.edu

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Purpose. The purpose of this paper is to analyze the concept of scope of practice for occupational health nurses. **Background.** Occupational health nurses (OHNs) practice in different industries alone or with other nurses, providing care to employees. The demand on occupational health nurses to respond to increasing organizational healthcare needs of employees and other healthcare demands raises the question, do occupational health nurses understand their scope of practice? Occupational health nurses inadvertently practicing outside their scope may jeopardize their nursing licenses, and the safety and quality of care of employees. **Method.** A literature review was conducted to identify defining attributes, antecedents, and consequences for the concept of scope of practice for OHNs. Walker and Avant's eight-step framework for concept analysis was applied. **Results.** The defining attributes of the scope of practice for OHN include but are not limited to standards and guidelines: competency, public safety; practicing certificates; using sound judgement; regulatory restrictions, limitations of practice in occupational health settings, and type of educational qualifications. The antecedents include education, training, competency, regulation, and experience. The consequences include improved quality care when education, training, and competencies are met within the practice guidelines. Possible disciplinary actions against the nurse and employer violation of workplace safety standards may occur. **Conclusion.** OHNs must understand and practice within their scope of practice even when placed in situations by their employers that could defy the limits of their practice. Defining the scope of practice for OHNs will lay the framework for research studies.

1. Introduction

1.1. Scope of Practice: A Concept Analysis for Occupational Health Nurses. Concepts are foundational for theory construction, especially in nursing where they could arise from practice experience, therefore fostering more theoretical work [1]. It is necessary to have a common understanding within a discipline, and this includes the meaning, use, and application of concepts utilized in that discipline. The concept of the scope of practice in occupational health nursing is important in nursing research and clinical practice because the formulation of theories and frameworks around the concept will contribute to the research of the phenomenon of interest. Also, utilizing the research outcomes will improve nursing education, improve practice, and address the health equity and quality care issues

identified. The measurable elements of the scope of practice (e.g., competency, education, training, certifications, and regulations) are paramount in understanding and applying the concept [2]. Ambiguities around the scope of practice limit the nursing profession's capability to fully contribute to safe and quality care for employees and optimal health system outcomes [2].

The analysis of this concept emanated from the first author's work experience. The demand on occupational health nurses to respond to increasing organizational healthcare needs of employees and other healthcare demands raises the question, do occupational health nurses actually understand their scope of practice? Occupational health nurses inadvertently practicing outside their scope may jeopardize their nursing licenses and the safety and quality of care of employees. Therefore, it is pertinent for

nurses to know that it is their responsibility to determine their scope of practice, which is available in the Nurse Practice Act of their state [3]. Nurses who practice in more than one state must be aware of specific regulations for each state.

2. Aim

This paper has two aims. The first aim is to analyze the concept of scope of practice and understand the contextual meaning and application for OHNs. The second aim is to identify the defining attributes of the scope of practice for further theory formulation and research.

3. Method

To accomplish these aims, we used Walker and Avant's eight-step concept analysis method [1]. These steps include: selecting a concept; determining the aims or purpose of analysis; identifying all uses of the concept that you can discover; determining the defining attributes; identifying a model case; identifying borderline, related, contrary, invented, and illegitimate cases; identifying antecedents and consequences; and defining empirical referents. The first author conducted a literature search using the phrases and keywords "scope of practice" AND "scope" AND "Occupational Health Nurse" in the following databases: CINAHL, OVID; PubMed, and Google Scholar. Merriam-Webster online dictionary was also utilized.

4. Definitions and Use of the Concept: Scope of Practice

A search of the phrase "scope of practice" in the Merriam-Webster (2019) online dictionary did not yield any results. However, the search for "scope" populated several definitions [4]. For the purpose of this analysis, the most relevant definition of the word is used: "Intention, object"; "extent of treatment, activity or influence"; "to look at especially for the purpose of evaluation-usually used with (out)." Additionally, a search for the word "practice" was done in the same dictionary, and several results were shown [5]. Also, for the purpose of this analysis, the most relevant definitions will be highlighted: "Carry out, apply"; "to be professionally engaged"; "to perform or work at repeatedly so as to become proficient"; "the form, manner, and order of conducting legal suits and prosecutions"; "actual performance or application"; "the usual way of doing something." Peer-reviewed and professional organization literature revealed operational definitions of scope of practice as follows: Lankshear and Martin stated that though the term scope of practice is broadly used, there is no commonly applied definition [2]. American Nurses Association (ANA) defines the scope of practice as "the who, what, where, when, why, and how of nursing practice" (p. 1) [6]. According to ANA "scope of practice describes the services that a qualified health professional is deemed competent to perform, and permitted to undertake-in keeping with the terms of their professional license" (p.1) [6].

Holtzhausene et al. provided the definition of the concept by the International Council of Nurses as "the medium by which the profession communicates its role, knowledge, skill, and professional accountabilities to the population it serves" (p.3) [7]. They proceeded to expound that scope of practice has its benefits because it regulates the "practice of the profession; guides curriculum development; assists employers in preparing job descriptions and performance contracts; and informs the public about the services its members are qualified to provide" (p.3) [7]. Abbott stated that "scope of practice refers to the limitations imposed by law on different vocational pursuits, pursuits that require specific education, experience, and demonstrated competency. Jurisdictions have their own laws, licensing bodies, and regulations that describe requirements for education, training, competency, and those activities that fall within the purview of the practitioner. In effect, what the practitioner can and cannot do defines one's scope of practice" (p.1) [8]. He also indicated that "the term scope of practice is not only used by national and state licensing boards for various professions to define the procedures, actions, and process that are permitted for a license, but also by professional associations like the American College of Sports Medicine (ACSM) to outline responsibilities and limitations for a certificate" (p.1) [8].

Furthermore, the associated concept "scope of nursing practice" by Muller et al., citing D'Amour et al., in 2012 indicates that "scope of nursing practice is broad and covers: (1) assessment and care planning. (2) teaching of patients and families. (3) communication and care coordination. (4) integration and supervision of staff, (5) quality of care and patient safety and, (6) knowledge updating and utilization" (p.1) [9]. Further, Kato et al., indicate that "scope of practice in rural areas is different from that in urban areas in family medicine" (p.1), highlighting that "since scope of practice should reflect community needs, factors affecting local health care must be taken into considerations" (p.1) [10]. This assertion and evaluation of scope of practice address the need for health equity and quality care by factoring in the needs of the community and population in which care is provided.

5. Determining the Defining Attributes

Defining attributes are the frequently occurring and associated characteristics of the concept [1]. Walker and Avant posit that concepts have unique defining attributes that distinguish them from other concepts for a given phenomenon [1]. Concept analysis allows the ability to determine the unique attributes of a given concept and the phenomena that match it [1]. It is necessary to analyze the scope of practice for OHNs to provide clarity on its meaning for OHNs in their practice. Therefore, OHNs must practice within the standards set in each state's Nurse Practice Act. Table 1 summarizes the defining attributes of the scope of practice for OHNs as evidenced in the literature review.

TABLE 1: Defining attributes for the scope of practice.

Author and year	Defining attributes
Abbott 2012 [8]	(i) Standards and guideline (ii) Boundaries (iii) Range of responsibilities within which practitioners function
Blair and Rolls 2019 [11]	(i) Competency (ii) Public safety (iii) Practicing certificates
Greenhill 2002 [12]	(i) Professional limitation (ii) Professional role
Holtzhausen et al. 2021 [7]	(i) Competent (ii) Skilled to provide safe care (iii) Using sound judgement (iv) Tasks authorized to do
Kono et al. 2017 [13]	(i) Competencies (ii) Duties (iii) Skills and knowledge (iv) Expectations
Lankshear and Martin 2019 [2]	(i) Regulatory restrictions (ii) Limitations of practice in occupational health setting (iii) Type of educational qualifications

6. Importance and Uses of Scope of Practice for Occupational Health Nurses

Occupational health nurses work in a variety of settings, such as industries, federal and state government establishments, private industries, recreational facilities, and as entrepreneurs. In the United States, there are over 12,342 occupational health nurses working and providing care to prevent and protect employees from workplace hazards, injuries, and illnesses [14]. The use of the concept “scope of practice” in advancing nursing science in education and research for this discipline is vital. An alternate concept “scope of nursing practice,” posited by Müller, details the activities of the nurse and the nursing process as it directly applies to nursing [9]. Some knowledge gaps may exist when assessing the scope of practice, such as consistency across the nursing discipline. In occupational health nursing, does the competency differ depending on the type of industry in which the nurse is employed (e.g., manufacturing facilities vs. recreational facilities)? It is important that the concept is clearly defined and communicated to OHNs as it applies to their practice. According to ANA, their major initiative is to safeguard and uphold the scope of practice for nurses, especially in this continually changing healthcare setting [6]. Also, it is imperative that nurses are able to practice to the full extent of their education and abilities in order to deliver the most efficient quality care to patients.

Kato et al. expounded on the use of scope of practice in rural and urban areas highlighting the need for health equity and quality care [10]. They asserted that “scope of practice in rural areas is different from that in urban areas” (p.1) [10]. While their work applied to family medicine, it highlights that the scope of practice must consider community needs and factors affecting the health of the target population.

7. Cases

According to Walker and Avant, the use of cases helps to illustrate the attributes of the concept [1]. We provide a model case, borderline case, related case, contrary case, and illegitimate case to help illustrate the scope of practice concept for OHN [1]. These cases can be from real-life experiences, literature reviews, or invented by the author [1]. The cases in this analysis were invented by the first author.

7.1. Model Case. According to Walker and Avant, a model case has all the defining attributes of the concept [1]. The key attributes are highlighted in Figure 1. An OHN graduated from a four-year nursing program has a Bachelor of Nursing degree and has been a licensed registered nurse for the past 7 years. According to Benner’s novice to expert model [15], this should be ample time to develop expertise in nursing. OHN is familiar with the state’s Nurse Practice Act. OHN works in a clothing factory and manages the employee health programs under appropriate medical oversight and protocols even when placed in a position to do otherwise by employers. OHN provides competent care to employees resulting in high-quality care and achieves great health outcomes.

This is a model case because it contains all of the defining attributes. The defining attributes demonstrated by the OHN include possessing the appropriate level of education, experience, and qualification which are the practicing certificate, nursing degree, and nursing license, for the role of an OHN. These satisfy the attributes of limitations imposed by law on different pursuits of vocation that require specific education, experience, and demonstrated competency. OHN’s familiarity with the Nurse Practice Act demonstrates the attribute of professional limitation, professional role, standards and

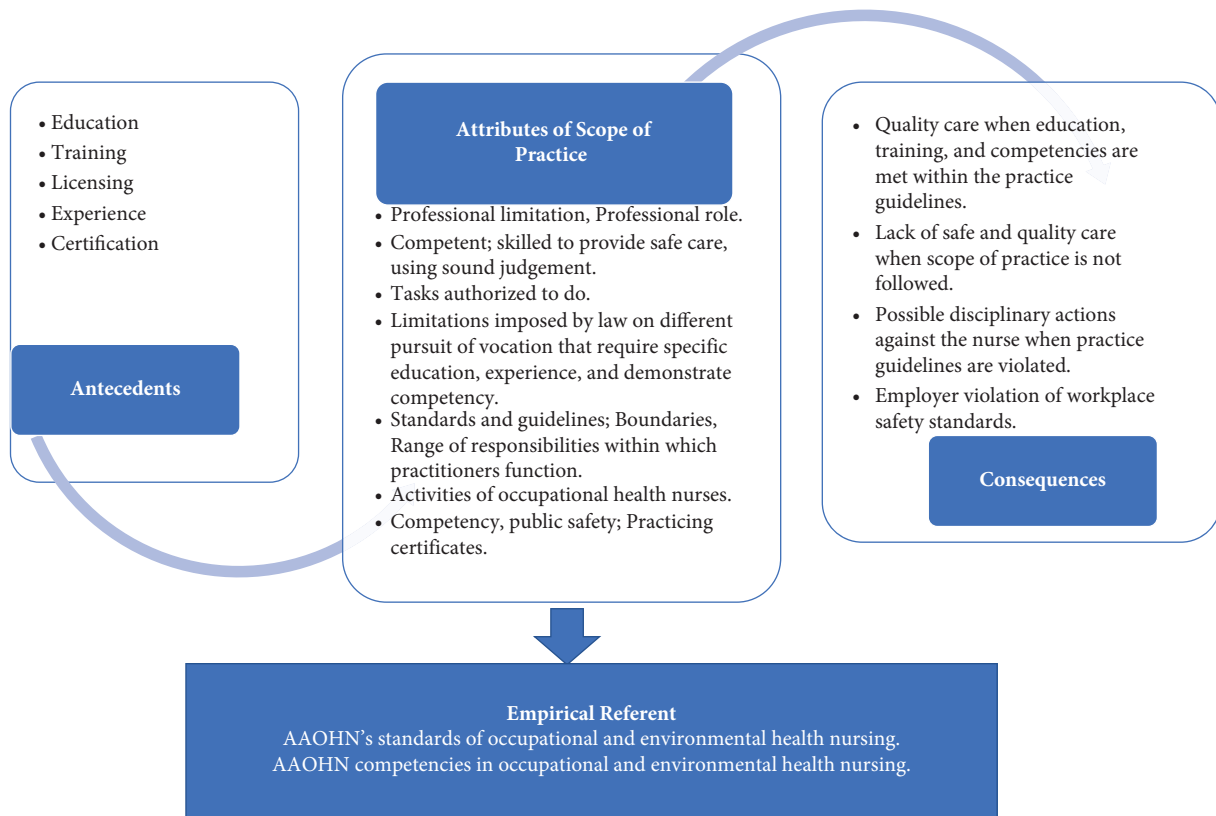


FIGURE 1: Scope of practice for occupational health nurses concept analysis—a conceptual framework.

guidelines, boundaries, range of responsibilities within which the practitioners function, and tasks authorized to do. Additionally, OHN-managing employee health programs under appropriate medical oversight and protocols even when placed in a position to do otherwise by employers demonstrate the attributes of standards and guidelines, boundaries, and utilizing sound judgement. Also, the attributes of competency, public safety, and activities of occupational health nurses were demonstrated by the OHN's ability to carry out nursing duties in an occupational health setting, which is the clothing factory in a manner that fosters public safety.

7.2. Borderline Case. Walker and Avant [1] contend that borderline cases contain most of the defining attributes of the concept under examination and are inconsistent with the concept under study. A borderline case is exemplified in this scenario: an OHN, a graduate of a four-year accredited university with a Bachelor of Nursing degree, licensed as a registered nurse works at a chemical production company. The OHN completed the nursing competency checklist, is familiar with the Nurse Practice Act of the state and conducts occupational health nursing activities based on standards and regulatory guidelines. However, the OHN frequently questions their decisions when carrying out care on employees. Employees' health does not seem to be negatively impacted by the care provided because no complaints are filed.

This is a borderline case because it has most of the defining attributes of the scope of practice such as the OHN's qualification of obtaining a nursing degree which is a practicing certificate and the OHN completing the nursing competency checklist and being familiar with the Nurse Practice Act of the state and working at a chemical production company. These activities demonstrate attributes of competency, activities of occupational health nurses, standards and guidelines, boundaries, and range of responsibilities within which occupational health nurse practitioners function. However, OHN frequently questioning the decision carried out demonstrates incompetence which deviates from the attribute of competency and using sound judgement. The employees' health outcome not being negatively impacted may not have demonstrated poor-quality care because none was reported. This case fits Walker and Avant's description of a borderline case and lends a good understanding of the defining attributes of the scope of practice.

7.3. Related Case. Related cases are instances of concepts that relate to the concept being studied, without all the defining attributes [1]. The cases illustrate attributes close to the main concept but differ upon close examination [1]. An example of a related case is as follows: A pediatric nurse who works at a children's hospital knows the regulations and standards. However, the nurse struggles to complete the competency checklist required to provide care to the

children. This is a related case because it has the concept related to the concept under study but does not have all the defining attributes. The concept of scope of practice is present with the attributes of regulations and standards. Contrarily, attributes of competence; skilled to provide safe care, using sound judgement; which is evidenced by the nurse's inability to complete the competency checklist to qualify the nurse to care for pediatric patients are lacking. Also, the nurse does not work as an occupational health nurse; therefore, the attributes of activities of occupational health nurses are lacking. This case provides clarity for a model case that has all the defining attributes that are lacking in the related case.

7.4. Contrary Case. According to Walker and Avant [1], a contrary case is completely not an instance of the concept being studied. The following scenario presents a case that is contrary to the model case. A caretaker who works with disabled children within the confines of their home ensures the children are well-fed and attend school. The caretaker walks the children within the perimeter of their home to promote exercise and a healthy lifestyle. This case is completely contrary to the scope of practice concept under study. It lacks the attributes of education and qualification as an occupational health nurse. This case also refers to perimeter, a physical space that is not in the scope of practice context addressed in this analysis. The case lacks the scope of practice attributes of standards, regulations, activities of occupational health nurses, practicing certificates, and limitations imposed by law on different pursuits of vocation that require specific education, experience, and demonstrate competency. This case clearly is not an example of the concept of scope of practice for OHNs. It does not have any of the defining attributes of this scope of practice concept under analysis.

7.5. Illegitimate Case. Walker and Avant [1] posit that illegitimate cases are used out of the context of the concept being studied. For example, a car salesperson loves to advertise cars on social media and boast of sales skills and ability to make customers happy. The salesperson's scope of practice extends beyond selling cars, to also selling homes. This is an illegitimate case because the scope of practice concept is used out of context. Although there is an attribute of boundary as inferred by the salesperson's scope of practice extending beyond selling cars to homes, this is not used in the context of the scope of practice concept under analysis. The salesperson selling more than cars does not demonstrate the scope of practice in the context of this analysis, rather an explanation of other business ventures. Additionally, the salesperson is not a nurse and does not work in an occupational health setting. The rest of the defining attributes highlighted in the model case are also lacking.

8. Antecedents

Antecedents according to Walker and Avant are events or incidents which must precede the concept [1]. Based on

a literature review on the scope of practice, the following antecedents were commonly identified that preceded the concept; education; training; competency, regulation, and experience (see Figure 1).

Occupational health nurses are licensed to practice in the states where they are employed [16]. "Typically, nurses entering the field have a baccalaureate degree in nursing and experience in community health, ambulatory care, critical or emergency health; and certification in the specialty is highly recommended (p.1)" [16]. Occupational health nurses earn master's degrees (MSN and MPH) and doctoral (PhD, DNP, and DrPH) degrees [17]. OHNs with these degrees develop skills in both occupational health and safety practice, and research and develop roles as educators, researchers, leaders, policy analysts, consultants, and clinicians [17]. OHNs obtain training from any of the 18 National Institute of Health's (NIOSH) Education and Research Centers (ERC) in the country [17].

9. Consequences

The consequences are the situations emanating from the scope of practice [1]. These are improved quality care when education, training, and competencies are met within the practice guidelines. They are not meeting these parameters when there is a lack of education and training and when practice guidelines are not followed. Not following the practice guidelines lead to negative outcomes of negligence, and unsafe and poor-quality care. Possible disciplinary actions against the nurse and employer violation of workplace safety standards may occur [11].

10. Empirical Referents

Empirical referents are characteristics of measuring the concept. According to Walker and Avant, empirical referents are facts that are present indicating the manifestation of a concept [1]. The scope of practice for this analysis will be measured by the American Association of Occupational Health Nurses, Inc. (AAOHN's) standards of occupational and environmental health nursing [18] and the AAOHN competencies in occupational and environmental health nursing [19]. The presence of the AAOHN standards and the competencies indicate the occurrence of the scope of practice in the case scenarios. OHN's demonstration of competency, achieving nursing degree and qualifications, practicing within boundaries of regulations and laws, and applying critical judgements to provide safe care to the target population in the model case indicates the existence of scope of practice.

The OHNs' knowledge and application of the AAOHN competencies by managing employee health programs, adhering to principles of professional nursing practice, and protecting public safety as evidenced in the model case demonstrate the existence of scope of practice in the model case which are OHNs graduation from a four-year nursing program, having a Bachelor of Nursing degree and being a licensed registered nurse. Additionally, in the model case, OHN's familiarity with the State Nurse Practice Act,

working in a clothing factory, and managing the employee health programs under appropriate medical oversight and protocols even when placed in a position to do otherwise by employers demonstrates the scope of practice. OHNs' provisions of competent care to employees resulting in high-quality care and achieving great health outcomes are all direct occurrences of empirical referents, showing the existence of scope of practice in the model case of this analysis.

11. Discussion

The concept of the scope of practice for OHNs has been analyzed. To our knowledge, this is the first concept analysis on this topic. Health equity and quality of care are paramount in our society today, more than ever. OHNs work in an ever-changing healthcare environment and, as such, experience constant role changes to meet the population's healthcare needs [20].

According to the International Council of Nurses (ICN), nurses need support to make the scope of practice decisions which have the capacity to negatively affect the quality of care and the nursing profession [20]. As posited by Lank-shear and Martin, pursuing the move to adopt the scope of practice as an impermanence phenomenon as experienced by nurses in the practice setting, as opposed to "a legislated statement" that is "static" in nature is paramount [2]. This dynamic scope of practice is influenced by several factors according to the authors, which include "legislation, regulation, education, organizational policy, individual competency, and patient population needs" that are ever-evolving [2]. These factors should be assessed from the standpoint of what is best for the care population, rather than the provider or employer [2].

OHNs should constantly and intensely assess their practice, both personally and as a body of healthcare practitioners in order to implement current evidence-based practices in healthcare [2]. Employees are better informed in the present healthcare environment therefore increasingly demanding improved access to care and increased safe environments and working conditions [20]. Employers and government are challenged to meet these increasing healthcare demands; therefore, more pressure is placed on occupational health nurses by these entities to search for ways to provide more efficient and effective care [20]. With economic pressure on employers, more workload burdens are placed on OHNs with limited resources to accomplish their care [20]. Resource limitations and workload burdens placed on OHNs by employers expose employees to unsafe and poor-quality care and, at the same time, position OHNs to situations that could jeopardize their practicing within their scope of practice [20].

It is, therefore, necessary that OHNs know and practice within their scope of practice even when placed in a position to do otherwise by their employers. The provision of quality care cannot be over-emphasized. It is essential that ambiguities surrounding the scope of practice are addressed and eliminated to avoid limiting OHNs' provision of full-quality care to employees with maximum healthcare outcomes [2]. The measurable elements of the scope of practice (e.g.,

competency, education, training, certifications, and regulations) are paramount in ensuring quality care and optimum employee health outcomes [2]. OHNs should be knowledgeable about their scope of practice to avoid compromising employee healthcare and the OHNs "legal position" (p.8) [21]. According to ANA, "protecting and advancing scope of practice for nurses is a major initiative" (p.2) [6]. It is paramount that occupational health nurses practice to their full training and potential to enable them to provide competent quality care to their populations [2]. To this effect, this scope of practice analysis is vital for OHNs in laying the foundation for future research on this topic and expanding knowledge of OHNs. This concept analysis was to define and understand the scope of practice for occupational health nurses and to lay the framework for future research. Utilizing research findings will improve nursing education, improve practice, and address health equity and quality care issues in employee healthcare.

12. Limitations

It is not feasible to include every definition or use of the concept, and scope of practice. It is also very unrealistic to search every database for the definition of the scope of practice. Therefore, literature searches were limited to the databases accessible to us as indicated in the methods sections.

13. Conclusion

The scope of practice has been analyzed using Walker and Avant's concept analysis method. Although there are several definitions of scope of practice, for this study, the scope of practice for OHNs can be defined based on the frequently occurring defining attributes from the literature review. These include professional limitation, professional role; competent; skilled to provide safe care; using sound judgement; tasks authorized to do; limitations imposed by law on different pursuits of vocation that require specific education, experience, and demonstrate competency; standards and guidelines; boundaries, range of responsibilities within which practitioners function; activities of occupational health nurses; competency, and public safety. Antecedents of scope of practice include proper training and education which allow the OHN to exemplify the defining attributes that permit OHNs to practice to the maximum of their scope while holding to the regulatory restrictions and limitations imposed on their scope of practice. Since the scope of practice is influenced by several factors as addressed in the discussion section, the focus should be on what is best for the employees and not the employer or provider [2]. OHNs should constantly assess their practice to follow current evidence-based practices. OHNs should also understand that employees are better informed at this moment in the society; employees are demanding safe and better working conditions [20]; therefore, OHNs' knowledge of their scope of practice, working within those boundaries, and at the same time providing safe, quality care are vital. Determining the scope of practice for OHNs lays the

framework to provide safe, high-quality care that is necessary for health equity research and to improve nursing practice.

Data Availability

This is a concept analysis. There are no data other than example cases that are included.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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References

- [1] L. O. Walker and K. C. Avant, *Strategies for Theory Construction in Nursing*, Pearson, London, UK, 6th edition, 2018.
- [2] S. Lankshear and D. Martin, "Getting comfortable with "it depends": embracing the impermanence of scope of practice," *Canadian Journal of Nursing Leadership*, vol. 32, no. 1, pp. 30–41, 2019.
- [3] S. Persaud, "Determining scope of practice," *The Maryland Nurses News and Journal*, 2017.
- [4] Merriam-Webster, "Definition of Scope," 2022, <https://www.merriam-webster.com/dictionary/scope>.
- [5] Merriam-Webster, "Definition of Practice," 2022, <https://www.merriam-webster.com/dictionary/practice>.
- [6] American Nurses Association, "Nursing scope of practice," 2018, <https://www.nursingworld.org/practice-policy/scope-of-practice/>.
- [7] J. D. V. Holtzhausen, C. Downing, M. Poggenpoel, and G. Ndawo, "Concept analysis: the scope of practice of a nurse anesthetist in South Africa," *Journal of PeriAnesthesia Nursing*, vol. 36, no. 6, pp. 672–677, 2021.
- [8] A. A. Abbott, "Scope of practice," *ACSM's Health & Fitness Journal*, vol. 22, no. 5, pp. 51–55, 2018.
- [9] R. Müller, C. Cohen, P. Delmas, J. Pasquier, M. Baillif, and C. Ortoleva Bucher, "Scope of nursing practice on a surgery ward: a time-motion study," *Journal of Nursing Management*, vol. 29, no. 6, pp. 1785–1800, 2021.
- [10] D. Kato, K. Ie, and H. Wakabayashi, "Influences on scope of practice: not only population size," *Family Medicine*, vol. 50, no. 3, p. 241, 2018.
- [11] W. Blair and S. Rolls, "Working within your scope of practice: nurses need to understand the implications of conditions on their annual practicing certificates," *Kai Tiaki Nursing New Zealand*, vol. 25, no. 4, p. 32, 2019.
- [12] S. Greenhill, "The challenge and scope of occupational health nursing," *AAOHN Journal*, vol. 50, no. 5, pp. 207–208, 2002.
- [13] K. Kono, Y. Goto, J. Hatanaka, and E. Yoshikawa, "Competencies required for occupational health nurses," *Journal of Occupational Health*, vol. 59, no. 6, pp. 562–571, 2017.
- [14] Zippia, "Occupational health nurse demographics and statistics in the us," 2021, <https://www.zippia.com/occupational-health-nurse-jobs/demographics/>.
- [15] P. Benner, "From novice to expert," *American Journal of Nursing*, vol. 82, no. 3, pp. 402–407, 1982.
- [16] American Association of Occupational Health Nurses, "Become an occupational health nurse," 2022, <https://www.aaohn.org/Practice/Become-an-Occupational-Health-Nurse>.
- [17] J. E. Wachs, "The American association of occupational health nurses: seventy-five years of education, practice, and research," *Workplace Health & Safety*, vol. 65, no. 4, pp. 148–153, 2017.
- [18] American Association of Occupational Health Nurses, "Standards of occupational health nursing," 2022, <https://www.aaohn.org/Tools-Resources/OHN-Resources>.
- [19] American Association of Occupational Health Nurses, "Competencies in occupational and environmental nursing," 2022, <https://www.aaohn.org/Tools-Resources/OHN-Resources>.
- [20] International Council of Nurses, *Scope Of Nursing Practice And Decision- Making Framework Toolkit*, ICN Regulation Series, Geneva, Switzerland, 2010.
- [21] M. M. Feringa, H. C. de Swardt, and Y. Havenga, "Registered nurses' knowledge, attitude and practice regarding their scope of practice in Botswana," *Health SA Gesondheid*, vol. 25, p. 1415, 2020.