ATHABASCA UNIVERSITY

EXPLORING THE EVALUATION OF LEADERSHIP COMPETENCIES

IN NURSING EDUCATION: A SCOPING REVIEW

BY

JODIE LARAE STEFFAN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF NURSING

FACULTY OF HEALTH DISCIPLINES

ATHABASCA, ALBERTA

DECEMBER 2024

Athabasca University
Faculty of Graduate Studies

Approval of Thesis

The undersigned certify that they have read the thesis entitled

EXPLORING THE EVALUATION OF LEADERSHIP COMPETENCIES IN NURSING EDUCATION: A SCOPING REVIEW

Submitted by

Jodie Steffan

In partial fulfillment of the requirements for the degree of

Master of Nursing

The thesis examination committee certifies that the thesis
and the oral examination is approved

Supervisor:
Dr. Tammy O'Rourke
Athabasca University

Committee Member:
Debbie Fraser
Athabasca University

External Examiner:
Dr. Sonia Udod
University of Manitoba

December 9, 2024

Acknowledgements

I would like to express my gratitude to several individuals on the team who have contributed to the success of this scoping review study. First and foremost, I want to thank my supervisor, Dr. Tammy O'Rourke, Assistant Professor at Athabasca University, for her patience and collaboration. Her expertise in the thesis development and research process has been invaluable to me as a novice researcher. I want to thank Deb Fraser, Associate Professor at Athabasca University, for her expertise, collaboration, and contributions to the thesis as a committee member. I am grateful for the expertise and time contributed by Megan Kirkpatrick, Associate Professor at the University of Calgary, who was the second reviewer in the screening process. I would also like to thank my external examiner, Dr. Sonia Udod, Associate Professor from the University of Manitoba, for her valuable contribution to the defence with her expertise in nursing leadership. Additionally, I would like to acknowledge the external support provided by Dr. Alix Hayden, librarian at the University of Calgary, and Joanna Nemeth, Managing Librarian at Athabasca University, for their assistance and expertise in conducting a search strategy. For the writing process, I am grateful for the guidance and support provided by Sara-Jean Watt, Write Site Coordinator at Athabasca University. Finally, I want to extend my thanks to my family and friends who have patiently supported me through this research journey and to the Great Reality, who gave me the strength to keep moving forward.

Abstract

Nursing leadership is an essential competency that nurses are expected to develop, beginning in nursing education and continuing to develop throughout their careers. Nursing education is a rich environment for developing leadership competence and preparing nursing students for entry-level practice. One of the critical factors in determining leadership growth is through effective evaluative processes in clinical practice. This scoping review explored the evaluative processes used in undergraduate nursing education that determine leadership competency. The Joanna Briggs Institute (JBI) methodology was utilized to conduct this scoping review. The main objective of this scoping review was to identify, summarize, and present the existing literature and the gaps in the literature on this topic. The findings of this study are expected to provide valuable insight into the evaluative processes for leadership competency, contribute to informing the evaluation of leadership in undergraduate nursing practice, and propose implications for future research.

Keywords: competency, curriculum, education, evaluation, leadership, leadership competency, leadership development, nursing, nursing leadership, and processes

Table of Contents

List of Tables

List of Figures and Diagrams

Chapter 1. Introduction

Building strong nurse leaders in health systems carries numerous benefits. These leaders are uniquely positioned to advocate and support access to timely healthcare, ensure the provision of quality, effective and safe client/patient care, and contribute to the development of an affordable and sustainable healthcare system (Registered Nurses Association of Ontario [RNAO], 2013). The absence of nurses in leadership roles results in a loss of advocacy for improving patient care and the healthcare system using nursing innovation and can lead to gaps in establishing safe practice environments, ultimately affecting the quality of client/patient care (Geerts et al., 2024; RNAO, 2013). Moreover, when nurses feel constrained in their leadership roles and responsibilities, it can lead to job dissatisfaction, increased stress, and ultimately, the "increased intent to leave" (Geerts et al., 2024; Ray et al., 2002 in RNAO, 2013, p. 54).

According to the World Health Organization (WHO, 2020), the nursing profession is the largest body of healthcare providers worldwide; approximately 59% of all providers are nurses. As the largest body of healthcare providers, increasing the number of competent and confident nurse leaders has the potential to have a significant impact in bringing about needed change in the health systems. Leadership development needs to begin at the onset of nursing education and continue to be built upon throughout the nurse's career (Canadian Nurses Association [CNA], 2009; Hsieh et al., 2022; Ross et al., 2018). Thus, academics, nurse educators and clinical mentors are responsible for "instilling the expectation that nurses can be and must be leaders" (CNA, 2009, p. 1).

Understanding that developing nurse leaders makes a positive impact on the delivery of patient/client care and the health system imparts the significance attributed to exploring where the issues around nursing leadership development occur. Leadership development is intended to

begin and develop throughout a nursing student's education, yet the literature describes insufficient opportunities to practice and grow in a leadership capacity in nursing training (CNA, 2009; Page et al., 2021; Scammell et al., 2020). One identified contributor to the lack of developing leadership capacity during academic preparation is inconsistent evaluation of leadership competency throughout undergraduate nursing programs (Hsieh et al., 2022). The identification of and discussion about this contributor has the potential to increase awareness of how nursing programs can improve their focus on developing leadership-based curriculums. The results of this scoping review will contribute to the awareness of how leadership development can be better implemented and evaluated in undergraduate nursing education and provide recommendations for future research on evaluating the skills and behaviours that demonstrate leadership competency.

Exploring the complexity of leadership competency and evaluating undergraduate nursing students in education is a challenging and significant issue in the conduct of research. Several studies discuss the need for increased leadership development in nursing education (Scammell et al., 2020; Scully, 2015; Ross et al., 2018). However, there is little evidence of how the development of leadership competency is evaluated in nursing education, particularly in the clinical setting (Scott & Miles, 2013; Hsieh et al., 2022). The motivation for this study evolved through the principal investigator's (PI) observations of nursing students demonstrating insufficient leadership competencies throughout their undergraduate nursing program and how this impacted their entry to practice observation in preparation for graduation. Anecdotally, as an experienced undergraduate nursing instructor with over ten years in nursing education and evaluation of student nursing practice in various clinical settings, the struggles with defining and measuring nursing leadership are real.

Judged by faculty to meet the established criteria, students are evaluated for their skills and behaviours in clinical practice to determine their overall leadership competence (Nunn-Ellison et al., 2023). Leadership concepts are introduced at the onset of nursing education through an examination of the entry-to-practice competencies. Students are evaluated in clinical practice based on these competencies. An evaluation form may have one or two indicators focusing on leadership, and it is the responsibility of the clinical instructor to confirm that the student has met the determined criteria. Leadership competency is often determined by the nursing instructor's knowledge and experience in leadership rather than using a consistent framework to evaluate students (Hsieh et al., 2022; Nowell et al., 2023).

In the classroom, leadership theory is often limited to a single course offered towards the end of undergraduate nursing programs (Hsieh et al., 2022; Scammell et al., 2020). Unfortunately, this course placement fails to provide sufficient time for students to assimilate leadership knowledge and demonstrate evaluative actions in clinical practice (Hsieh et al., 2022). It is recommended that leadership theory and practice be implemented earlier and built upon throughout the program (Curtis et al., 2011b; Scammell et al., 2021). Students would benefit from earlier opportunities to practice leadership skills in clinical settings, such as working in a charge nurse position, directing healthcare providers in client care, or sharing client status in clinical rounds to allow them to build the leadership competencies that are required for entry-level practice (College of Registered Nurses of Alberta [CRNA], 2019; Marcellus et al., 2018; Page et al., 2021).

Another concern in academia is an observed and reported lack of confidence to engage in leadership skills, behaviours, and abilities. This lack of confidence is often demonstrated and reported during interdisciplinary simulations in the undergraduate nursing program. These

simulations may be offered a couple of times during a term to allow students to practice their nursing skills in a non-threatening environment and receive feedback from faculty and peers (McPherson & MacDonald, 2017). Anecdotal observations by the PI noted that nursing students are often observed to struggle when taking on leadership roles in simulations. This observation is especially noticeable in the interdisciplinary simulations, referred to as interprofessional education (IPE), when healthcare students from different disciplines, such as medicine, social work, respiratory therapy, and other health-related fields, work together as a team to manage a simulated health situation (Canadian Interprofessional Health Collaborative [CIHC], 2024; University of Calgary, n.d.-a). Nursing students are observed to relinquish leadership roles, such as leading the team or directing care to other healthcare disciplines, despite all students being at a similar level in their academic programs. Leadership competency is an essential nursing skill; exploring the gap in developing effective nurse leaders is critical. This study aims to analyze how undergraduate nursing programs prepare and assess leadership in the next generation of nurses by reviewing existing literature and identifying research gaps.

The key terms used in this study include competency, curriculum, education, evaluation, leadership, leadership competency, leadership development, nursing, nursing leadership, and processes. See *Table 1.1: Definitions of Terms* in *Appendix A: Definitions and Priori Protocol*.

This chapter addressed the importance of nursing leadership and the development of leadership as a competency in nursing education. Researching the evaluation processes of leadership competency in undergraduate nursing education is an important first step in understanding how leadership competency development occurs in academic preparation. As a component of the proposal development for this scoping review, a literature review was conducted to determine available literature and eliminate any redundancy in repeating research

and previously analyzed evidence.

Chapter 2. Review of the Literature

Nurses are important members of collaborative healthcare teams working together to build and support evidence-based, quality healthcare services (CNA, 2009). However, nursing is often only seen and valued for the work on the front-line level of care, such as at the bedside in hospitals. Nurses are less often viewed as administrators, policymakers, or political visionaries in bringing health system change (CNA, 2009). All nursing positions, including the front-line workers, require leadership knowledge, experience, and competence. However, since the 1990s, the number of nurses in formal leadership roles has declined while the number of non-nursing leaders who focus on patient care has continued to climb (CNA, 2009). According to a survey by the *New England Journal of Medicine Catalyst Insights Council* conducted in 2018, fewer than 25% of nurses in the United States hold leadership roles (Swensen & Robel, 2018). One barrier that prevents nurses from stepping into leadership roles is the lack of prioritized leadership development in nursing education, which, therefore, does not provide sufficient opportunity for students to build essential leadership competency (Applin & Eaton, 2018; Ross et al., 2018).

This literature review provides an overview of leadership development in undergraduate nursing education and how it pertains to nursing student entry-to-practice leadership competency. The structured literature search included journal articles, policy statements, and frameworks. Three main themes emerged from the literature: nursing leadership definitions and competencies, leadership models and frameworks, and student nurse perceptions. *Table 2.1: Themes and Recommendations* provides pertinent takeaways from the literature review. The review also revealed the existence of inconsistent processes for evaluating leadership competency, particularly in the clinical practice context, and how this impacts nursing students' development in this area. Each theme from the preliminary review will be discussed in sequence.

Table 2.1

Themes and Recommendations

Themes	Recommendations
Definitions and Competencies in Nursing Leadership	1. For nursing students to adequately develop leadership, curriculums need to clearly define leadership and outline the competencies and evaluation for leadership development that are required to be achieved (Byrd, 2022; Grossman & Valiga, 2021; Scammell et al., 2020; Scully, 2015). 2. A competency-based leadership objective needs to be introduced into the curriculum in nursing programs to address the leadership development competencies and evaluation of nursing students (Hsieh et al., 2022; Scully, 2015).
Leadership Models and Frameworks	3. Nursing education needs to incorporate current leadership models, frameworks, and methods throughout the nursing program, not at the end, to support leadership development and evaluation of competency in nursing students (Byrd, 2022; Miles & Scott, 2019). 4. Nursing programs are an excellent starting place for nursing leadership development, and this needs to be a priority in curriculum development and nursing education (Galuska, 2014; Öztürk & Kahriman, 2013; RNAO, 2013).
Student Nurse Perceptions	5. Nursing programs need to create an environment for innovation and leadership by providing opportunities for nursing students to practice and develop skills in preparation for graduation (Curtis, 2011a; Melnyk & Davidson, 2009). 6. Mentorship provided by experienced nurse leaders and nursing instructors will support nursing students in developing and growing in leadership competencies (Galuska, 2014; Pedersen, 2015; Marcellus et al., 2018).

Note: Adapted from the paper *Assignment 2: Research Report (coding, analyzing/theming, and write-up)* by Jodie Steffan (July 2023).

Theme 1: Definitions and Competencies in Nursing Leadership

Definitions

One of the most common themes was the uncertainty of how to define nursing leadership. Six sources have indicated that there are multiple definitions of nursing leadership; however, there is a lack of a consistent definition that is universally accepted by nursing institutions (Byrd, 2022; Curtis et al., 2011a; Nowell et al., 2023; Scammell et al., 2020; Scott & Miles, 2013; Scully, 2015). According to the Canadian Association of Schools of Nursing (CASN, 2022), defining nursing leadership is a challenge to "articulate because of the various contexts in which leadership occurs" (p. 26).

In Canada, several nursing organizations have endeavoured to define nursing leadership. For example, the CNA (2009) explains that the registered nurse's leadership role is to think critically, advocate, and work collaboratively with patients, the healthcare team, and organizations to help build an effective and preferred Canadian healthcare system. The RNAO (2013) defines leadership as "a relational process in which an individual seeks to influence others towards a mutually desirable goal" (p. 130). CASN (2022) defines it as the "social influence to help others achieve health-related goals or improve the health care system" (p. 7). In Alberta, the College of Registered Nurses in Alberta (CRNA, 2019) states that "registered nurses are leaders who influence and inspire others to achieve optimal health outcomes for all" and outlines eleven leadership competencies that nurses must acquire for entry to practice (p. 11). According to Nowell et al. (2023) and Scammell et al. (2020), the absence of a consistent definition, one agreed upon by Canadian national nursing organizations, makes it challenging for academic institutions to create and execute effective programs for nursing students to develop the necessary leadership competencies required for graduation.

Leadership Competencies

The second most frequent theme from the literature was the importance of leadership

activities to support leadership competency development in undergraduate nursing students (Curtis, 2011b; Hsieh et al., 2022). Like various definitions found in the literature, there are also several behaviours and skills identified as descriptive of leadership competency. According to Fuster Linares et al. (2020), behaviours that characterize leadership competency include "strategic thinking, emotional intelligence, impact and influence, and teamwork skills" (p. 4). Other leadership skills and behaviours highlighted in the literature included demonstrating compassion, building relationships, credibility, trust building, the ability to engage with others, self-discipline, and the ability to self-reflect on practice (Byrd, 2022; CRNA, 2019; Kilty, 2005; RNAO, 2013; Quinn, 2020; Ross et al., 2018; Scully, 2015). Additional nursing leadership activities included demonstrations of interpersonal skills, having a clear and shared vision, influencing and inspiring others, contributing to system change, and engaging in professional development to enhance professional leadership skills throughout one's career (CNA, 2009; CRNA, 2019; Hsieh et al., 2022; Kilty, 2005; Lavoie-Tremblay et al., 2017; Melnyk & Davidson, 2009; Scully, 2015).

Given the multitude of nursing leadership behaviours and skills, evidence supports the need for clarity of nursing leadership competencies in academia (Scammell et al., 2020). For nursing students to adequately develop leadership, curriculums need to clearly define leadership and outline the required competencies for leadership development and evaluation (Byrd, 2022; Grossman & Valiga, 2021; Scammell et al., 2020; Scully, 2015). Also, competence-based leadership objectives should be integrated early into nursing program curriculums to foster leadership development in students and allow sufficient time for competency assessment (Hsieh et al., 2022; Scully, 2015).

Theme 2: Leadership Models and Frameworks

Various models and frameworks have been identified in the literature as informing undergraduate nursing education leadership development. Five examples of leadership development models are the *Social Change Model* (Read et al., 2016), the *Engaging Multiple communities of BSN students in Research and Academic Curricular Experiences (EMBRACE)* model (Stacciarini & McDaniel, 2019), the *Leadership Development Model for Nursing Education* (Miles & Scott, 2019), the *Magnet Model* (ANCC, n.d.) and the *Arizona Nurse Leadership Model* (Weston et al., 2008).

The *Social Change Model* suggests that leadership education be developed, delivered, and evaluated from the perspective of contributing to positive social change (Byrd, 2022; Read et al., 2016). It was developed as a framework to assist pre-licensure nursing students who may not identify as leaders due to their under-resourced backgrounds (Read et al., 2016). The *EMBRACE* model was designed to assist nursing students from diverse ethnic and racial backgrounds in actively participating in leadership opportunities to develop their leadership style, with a focus on promoting equality and equity (Byrd, 2022; Stacciarini & McDaniel, 2019). The model aimed to develop a culturally appropriate and innovative program to motivate underrepresented students toward research and leadership roles (Stacciarini & McDaniel, 2019). The *Leadership Development Model for Nursing Education*, developed by Miles and Scott (2019), is based on current trends in nursing leadership theories, and it is supported by evidence-based practice (Byrd, 2022). It provides a framework for structuring leadership development for pre-licensure nursing students, preparing them for entry into practice (Miles & Scott, 2019).

Two frameworks discussed in the literature were not specifically designed for nursing students; instead, they were designed for nursing leadership in general – the *Magnet Model* and the *Arizona Nurse Leadership Model.* The *Magnet Model* was developed by the American

Nurses Credentialing Center (ANCC, n.d.) to enhance nursing leadership through a framework that visualizes and builds leadership skills in practicing nurses (Johnson, 2014). The ANCC (n.d.) recommends five standards to achieve magnet status, which include (a) transformational leadership; (b) structural empowerment; (c) exemplary professional practice; (d) new knowledge, innovations, and improvements; and (e) empirical outcomes.

The *Arizona Nurse Leadership Model*, developed by the Arizona nursing community, informs a four-day program designed to teach leadership skills to healthcare professionals (Weston et al., 2008). It was created to address the demonstrated lack of nursing leadership competence and the resulting healthcare issues (Weston et al., 2008). It has also been used to support first-time nurse managers or supervisors in leadership roles (Curtis, 2011b; Weston et al., 2008).

In Canada, nursing programs may use different leadership frameworks to facilitate leadership development. These include the *Nursing Leadership Development Framework* created by the CNA (Kilty, 2005), the *Conceptual Model for Developing and Sustaining Leadership* developed by the RNAO (2013), and the *LEADS* framework established by the Canadian College of Health Leaders (CCHL; n.d.). The *LEADS* framework focuses on five key areas: lead self, engage others, achieve results, develop coalitions, and system transformation (Dickson & Tholl, 2014). According to Dickson and Van Aerde (2018), the *LEADS* framework has been used in research studies and is considered a valid measurement of leadership competency within the professional community. One study reflected this assertion by examining the *Inspire Nursing Leadership Program (INLP),* developed by the CNA and CCHL, that integrated the *LEADS* framework as a program component (Geerts et al., 2024).

Despite these multiple frameworks, a consistent framework or model to support the

development and evaluation of leadership competency in academia has not been universally adopted (Miles & Scott, 2019). Evidence supports that evidence-based leadership frameworks and models must be incorporated throughout the nursing program, not at the end, to support leadership development and competency in nursing students (Byrd, 2022; Miles et al., 2019). Nursing programs are an excellent starting point for nursing leadership development, and the literature encourages this to be a priority in curriculum development for nursing education (Galuska, 2014; Öztürk & Kahriman, 2013; RNAO, 2013).

Theme 3: Nursing Student Perceptions

Nursing students report that receiving hands-on, high-quality clinical experience from positive role models helped improve their leadership skills and apply theoretical knowledge to practical situations (Byrd, 2022; Ross et al., 2018). Unfortunately, in a study by Francis-Shama (2016), twenty senior undergraduate nursing students reported encountering poor leadership role models in clinical and educational settings. One student described the nurse they worked with as difficult and expressed discomfort in communicating with them (Francis-Shama, 2016). Another student mentioned that their mentor seemed anxious and lacked confidence, and they did not feel that the nurse could effectively serve as a supportive role model for their learning (Francis-Shama, 2016). The availability and quality of role models for nursing students in clinical practice varies. This shows the significance of academic faculty and clinical instructors in demonstrating nursing leadership behaviours and competency in the clinical setting. The design of nursing programs was also explored in the literature, highlighting that educational programs tend to favour certain personalities in the evaluation of leadership competency (Byrd, 2022; Colley, 2019). Colley's (2019) study of RN to BSN students (n=7) found that nursing educators evaluated extroverted students as demonstrating leadership competency in clinical practice,

while introverted students struggled with anxiety and motivation in demonstrating leadership. Byrd's (2022) work questions this expectation, suggesting that nursing educators should explore better ways to support nursing students with introverted personalities to enhance their ability to demonstrate nursing leadership competency development.

Nursing students' self-perception of their development of leadership competency also varied. According to Öztürk and Kahriman (2013), in their survey of nursing students (n=477) in Turkey, 52% of students reported that their education did not prepare them to be nursing leaders. Additionally, Forty-two percent of these same students reported that they were unsure of the extent of leaders in nursing, 31% reported that nursing leaders are present, and 27% reported that no leaders exist in nursing (Öztürk & Kahriman, 2013). One-third of the students reported that "they would change the image of nursing in society *if* they were leaders" (Öztürk & Kahriman, 2013, p. 114, italic added). However, in a study conducted by Ross et al. (2018), which surveyed 196 undergraduate nursing students and 192 nurse graduates from Alberta, Canada, the results stated that 74.1% of undergraduate students and 59.4% of graduates "agreed or strongly agreed that their teaching and learning experiences helped them to develop knowledge and skills in leadership"(p. 6).

Lastly, students reported experiencing positive effects on their leadership competencies through simulated scenarios (Byrd, 2022; Nowell, 2016). Byrd (2022) and Nowell (2016) discussed how students reported increased confidence in leadership competency development and learning to work as a team using simulation activities. However, students expressed concerns about the lack of collaboration between clinical placements and academic settings, noting that it negatively impacted their leadership development (Byrd, 2022; Ross et al., 2018). Two studies highlighted these concerns, indicating that participants believe improved collaboration could

provide better opportunities to practice leadership skills (Byrd, 2022; Ross et al., 2018).

This evidence suggests two recommendations for supporting student nurse leadership development. First, nursing programs should create an environment that promotes innovation and leadership (Melnyk & Davidson, 2009). This involves providing nursing students with numerous opportunities to practice and refine their skills from the beginning of their academic journey up through graduation (Curtis, 2011a; Melnyk & Davidson, 2009). To achieve this, the curriculum must clearly outline the expectations for students to attain leadership competencies as part of their preparation for graduation (RNAO, 2013; Öztürk & Kahriman, 2013). Second, experienced nursing instructors with leadership experience can serve as positive mentors, guiding nursing students in meeting these expectations and developing their leadership competencies (Applin & Eaton, 2018; Galuska, 2014; Pedersen, 2015; Marcellus et al., 2018).

Literature Gaps

However, there are two major gaps in the review. First, there is limited discussion regarding the skills, behaviours, and abilities necessary to assess and evaluate leadership competency in undergraduate nursing education. Second, there is a lack of information on the processes used by nursing faculty and clinical instructors to evaluate these competencies. Studies focus on the overarching leadership competencies that are required from nursing students, such as strategic thinking and teamwork, but there are no specific examples of how to assess and evaluate leadership competency development using behaviours and skills (Hsieh et al., 2022). Nursing instructors expect nursing students to demonstrate specific skills and behaviours and to meet the required objectives in the clinical setting (CASN, 2022). The same requirement must apply to developing nursing leadership skills to establish competency. Instructors need clearly defined objectives outlining which specific skills and actions students must demonstrate to prove

the attainment of leadership competency (Hsieh et al., 2022).

Summary

The literature review identified three key themes and recommendations. Firstly, evidence supports the importance of establishing a consistent definition of nursing leadership. Secondly, there is a need for the incorporation of a common leadership framework or model to develop academic curricula for undergraduate nursing programs. Finally, students recognize the importance of providing ample opportunities to practice leadership skills and value mentorship in leadership. Recommendations emphasize the need to assess current nursing curriculums regarding how they teach, implement, and evaluate the development and achievement of leadership competency in nursing students (Galuska, 2014; Ross et al., 2018; Öztürk & Kahriman, 2013).

Based on the importance of the development of leadership competency for nursing students and the gaps in the literature, a Joanna Briggs Institute (JBI) protocol was developed to complete a more focused scoping review. The objective of this study is to explore and present available literature and literature gaps on the leadership competency evaluative processes used in undergraduate nursing programs through a scoping review. More specifically, the review will answer the following question: ***What evaluative processes are used to determine the attainment of leadership competency of undergraduate nursing students in clinical practice?***

Chapter 3. Method

This chapter describes the JBI scoping review methodology (Peters et al., 2020a). Scoping reviews are a form of knowledge synthesis that explores and analyzes a body of published and unpublished literature (Campbell et al., 2023; Munn et al., 2022). According to the Canadian Institutes of Health Research (CIHR; 2010), knowledge synthesis is a transparent and reproducible qualitative and or quantitative method that integrates and contextualizes many research findings on a topic. A scoping review examines "the extent (that is, size), range (variety), and nature (characteristics) of the evidence on a topic or question" and is a systematic process to map, analyze, and identify gaps in the literature (Campbell et al., 2023; Munn et al., 2022; Tricco et al. 2018, p. 467). This methodology can be used before beginning research to determine if enough literature exists on a topic or can be considered a project in and of itself (Arksey & O'Malley, 2005; CIHR, 2010). Scoping reviews are considered a rigorous form of research with a clearly defined framework and reporting system (Levac et al., 2010; Peters et al., 2020b; Westphaln et al., 2021).

Paradigm Alignment

The philosophical underpinning of a scoping review is epistemological (Thomas et al., 2020). Scoping reviews reject the idea that there is a single truth to be discovered and understand that there is a myriad of knowledge from different perspectives to be explored in the literature (Arksey & O'Malley, 2005; Thomas et al., 2020). Scoping reviews also align with the interpretivist and constructivist paradigms (Ganapathy, 2016; Levac et al., 2010; Mak & Thomas, 2022). Eakin (2018a) describes interpretivism as meaning-making through the human interpretation of social constructs, symbols, and reality. Constructivists support the idea that concepts hold not a single reality but multiple perspectives (Wilson, 2001). Scoping reviews are

exploratory in nature and examine the meaning derived from literature. They reflect an interpretive and constructivist perspective, allowing for multiple constructions of knowledge to address the research question (Eakin, 2018a; Mak & Thomas, 2022). Scoping reviews are a good choice for investigating and synthesizing existing knowledge on a specific topic (Peters et al., 2020b). Therefore, this method will be used to explore current practices in the evaluation of nursing leadership competency in undergraduate nursing programs.

Research Design

JBI is a global network that provides resources, consultation, and support with evidence-based decisions for conducting systematic and scoping reviews (JBI, n.d.). The *JBI Manual for Evidence Synthesis* recommends nine steps for completing a scoping review (Peters et al., 2020a). For the purposes of this review, two of the steps were blended for clarity, and the review was condensed into seven stages. These stages include: (a) priori protocol; (b) evidence search; (c) evidence selection; (d) evidence extraction and charting of the results; (e) evidence analysis; (f) presentation of results; and (g) evidence summary and conclusion.

See *Figure 3.1* for a description of each of these stages, which will be discussed in this chapter.

Figure 3.1

Stages for a Scoping Review JBI Methodology
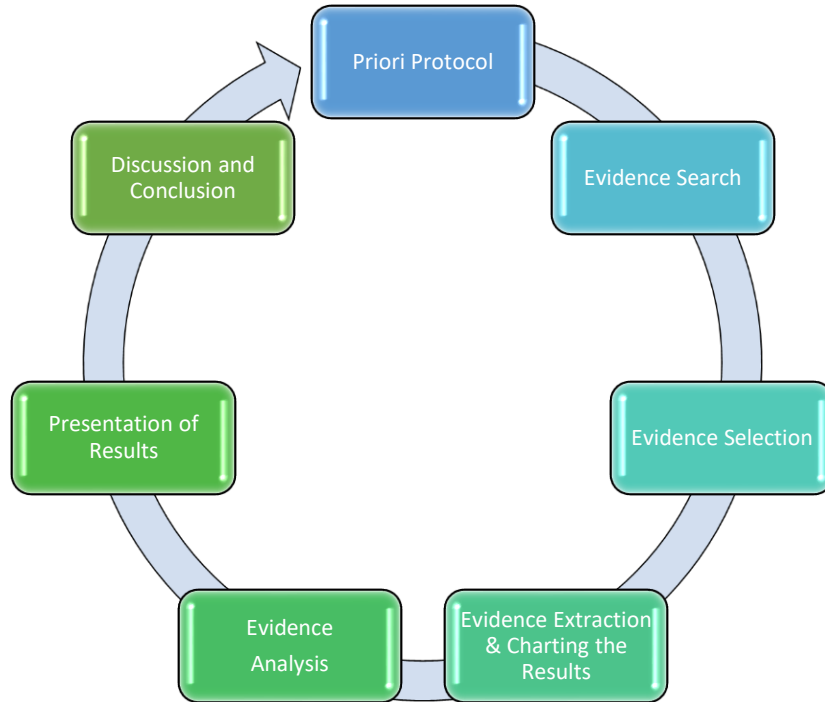
Note. Image adapted from the "10.1.3 The scoping review framework" in the *JBI Manual for Evidence Synthesis* by editors Peters et al. (2020a) from https://jbi-global-wiki.refined.site/space/MANUAL/355862599/10.1.3+The+scoping+review+framework

Priori Protocol

The priori protocol includes the primary objective(s) for the study and the research question(s) that are based on the population, concept, and context (PCC) and the inclusion and exclusion criteria for the search (Khalil et al., 2021; Peters et al., 2015; 2020a). Other pre-study tasks involved with the protocol development are conducting a preliminary literature review, recruiting a team, and considering the study's reflexivity, bias, and credibility. Any ethical considerations were also explored during this stage.

Research Question and Objective

A clearly defined objective and research question is imperative to guide an effective study and support transparency in the research (Peters et al., 2020a). To explore the scope of the existing literature on a concept, the objective and research question need to be broad with minimal parameters to map the available literature on a topic (Arksey & O'Malley, 2005; Peters et al., 2015; 2021; Wesphaln et al., 2021). Upon completion of the initial literature review, it was established that the objective of this study is to investigate and present the existing literature and any gaps in the literature regarding the evaluation processes for leadership competencies used in undergraduate nursing programs. The research question for this study is: ***What evaluative processes are used to determine the attainment of leadership competency of undergraduate nursing students in clinical practice?***

Population

The population examined were undergraduate nursing students in a four-year baccalaureate program. Other types of nursing students were excluded. The specific age of the nursing student was not identified, but all years (1- 4) of the undergraduate nursing program are eligible for inclusion. Inclusion search terms used for the population were *Bachelor of Science in nursing students, baccalaureate nursing students, nursing students, nursing trainees, prelicensure nursing students, preregistration nursing students, rookie nurses,* and *undergraduate nursing students*. Exclusion search terms include *graduate/masters/doctorate* and or *Ph.D. nursing students, midwifery or psychiatric nursing students, new nurse graduates, non-registered/non-undergraduate nursing students, nursing assistant students, non-nursing students, nurse practitioner students, nurse specialist and or certificate program students, practical nursing students, post-licensed practical* and or *post-registered/associate degree nurse students*.

Concepts

Two concepts were deemed relevant to the search for this scoping review: evaluative processes and leadership competencies.

Evaluative Processes. Evaluation is the process of judging performance based on a specified set of criteria and results in the product of assessment that could be either formative or summative (Nunn-Ellison et al., 2023). Evaluation processes include assessment tools/measures/instruments, forms, checklists, rubrics, formative or summative processes, outcomes, goals, and objectives (Gamboa, 2023; McPherson &Macdonald, 2017; Marcellus et al., 2018; RNAO, 2013). The following evaluative process key terms were included in the search: *checklists, evaluative approaches, formative and summative evaluations/assessments, forms, goals, instruments, measures, objectives, outcomes, processes, reflective journals, rubrics, and self/peer/observer/instructor evaluative methods* and or *tools.* Key terms excluded from the search were *nursing curriculums, evaluation of competency in leadership theory nursing courses, non-evaluative teaching and learning strategies (case studies, simulation (SIM), and nursing scenarios for learning*), and *non-leadership evaluative processes*.

Despite leadership theory being an important component of building leadership knowledge, a review of theory literature is beyond the scope of this study. Exploring nursing curriculums and evaluative forms that are not available through the specified search modalities is also beyond the scope of this study.

Leadership Competencies. The second concept to be explored is leadership competency. As discussed in the literature review, leadership competencies can vary greatly. For this review, the terms selected for leadership competency are based on CASN's (2022) *National Nursing Education Framework* which emphasizes the ability to advocate for safe environments and social change, collaborate with intra-professional, inter-professional, and inter-sectoral

teams, coordinate nursing care, make complex decisions as part of a team, and improve

healthcare by integrating with other sectors and institutional policies. The terms included for

leadership competencies included: *clinical nursing leadership, clinical reasoning, clinical*

judgment, critical thinking, educational leadership, leadership behaviour, innovation, peer

coaching/mentorship, promoting quality improvement, role modelling, self-reflective practice,

self-assessment, and student leadership practices. No exclusion terms were identified for this

component of the search.

Context

The context for this study was clinical practice settings in which undergraduate nursing

students are evaluated. These settings included acute care placements, hospitals, community

placements, healthcare organizations, healthcare agencies or businesses (i.e., occupational

health), and any other clinical setting where students provide nursing practice. The inclusion

terms used for context included *acute care settings, clinical experience, clinical practice, clinical*

placement/practicum, clinical setting, healthcare settings, community placements, healthcare

organizations, healthcare agencies, hospitals, long-term care, nursing institution, nursing

training, public health, occupational health, service-learning, and undergraduate/baccalaureate

nursing education/program/school. Exclusion terms included *leadership theory nursing*

courses/classes and non-evaluative learning environments (case studies, nursing labs, nursing

practice scenarios, and simulation (SIM)).

Inclusion/Exclusion Criteria

In addition to the PCC, other inclusion and exclusion criteria were utilized to filter and

provide limiters for conducting an effective search (Peters et al., 2020a). To capture the most

recent evidence on the topic and maintain a manageable workload within the time constraints of

completing this thesis, the search was time-limited to ten years, from January 2014 to January 2024. Language selection was limited to English.

It was originally decided to limit the search to Canada; however, a preliminary search that included this limitation yielded no results. Therefore, no geographical filters were included in the search. If available, Canadian sources were identified during the full-text phase by identifying Canadian authors who published internationally. Sources sought for inclusion were qualitative and quantitative studies, systemic reviews, and meta-analyses from both peer-reviewed and non-peer-reviewed journals and nursing professional websites.

Zotero, a citation management software tool, was utilized for its user-friendly platform to manage, cite, and export references to Covidence (University of Toronto, n.d.). Covidence, a software for knowledge synthesis, was used to screen and extract evidence from the scoping review, enhancing the reviewing process and minimizing bias (University of Calgary, n.d.-b.; University of Victoria Libraries, n.d.).

Recruit a Team

A minimum of two reviewers and a librarian are recommended to compose the team to complete a scoping review (Peters et al., 2020a; Westphaln et al., 2021). Two independent reviewers minimize the risk of bias and prevent errors from occurring during the screening process (Stoll et al., 2019). Stoll et al. (2019) recommend that two reviewers engage in both screening phases of the search, the initial title and abstract screening and the full-text screening, to enhance the quality and credibility of the evidence selected and prevent search errors. In addition, the recruitment of experienced librarians to the research team enhanced the design and refinement of the search strategy (Peters et al., 2020a). The librarians provided excellent resources for information extraction and guidance on appropriate database searches, data

organization, and maintaining secure records (Tricco et al., 2018).

For this study, a team of six participated in the search and screening process, which included the principal investigator (PI), the PI's thesis supervisor, a committee member, an additional reviewer, and librarian support from Athabasca University (AU) and the University of Calgary (U of C). The additional reviewer brought valuable knowledge and expertise to this study. As a senior nursing instructor who teaches leadership theory at the U of C and someone who had recently served as a reviewer for a different JBI scoping review, their input was highly beneficial.

Role of Reflexivity and Bias

Reflexivity aids in the development of self-awareness and self-knowledge of one's beliefs, biases, and values through self-analysis (Creswell & Poth, 2018; Eakin, 2018b). In scoping reviews, engaging in reflexivity is an essential part of the research process to promote the rigour and transparency of the study (Mak & Thomas, 2022; Thomas et al., 2020). Reflexivity is essential to implement both individually, such as documenting in a reflexive journal, and relationally, from team collaboration throughout the various stages of the scoping review (Mak & Thomas, 2022; Pollock et al., 2022; Thomas et al., 2020). During the scoping review process, a reflexive journal was used to develop self-awareness and prevent personal bias (Orange, 2016). The research team met regularly to discuss and reflect on search, selection, and review differences.

Due to the nature of scoping reviews, bias assessment is not routinely conducted (Peters et al., 2020a). Despite this, it is beneficial to be aware of the values and beliefs that a researcher brings to the study. Creswell and Poth (2018) state that by being aware of the potential bias from the outset of the study, the researcher understands their position as an observer of evidence and

thus helps illuminate any potential risks through participating in reflexivity. The PI recognized the potential for bias in the study because of holding a position as a nursing instructor at a nursing school. Completing a reflexive journal during the research process and collaborating with a team of independent reviewers helped to minimize any bias (Stoll et al., 2019).

Credibility and Rigour

A five-step method suggested by Johnson et al. (2020) was used in this study to establish credibility and rigour during the scoping review process:

1. A research question and purpose of the study were identified.

2. A rigorous methodology, JBI, was used to conduct this review.

3. Data was analyzed and managed using Zotero and Covidence computer software platforms.

4. A valid conclusion was provided to answer the research question.

5. A standardized reporting framework, the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist* (*Table 3.1* in Appendix A: Definitions and Priori Protocol), served as a reference for this study to ensure that evidence was systematically searched and extracted, and that the screening process of sources was transparent.

Ethical Considerations

Scoping reviews do not involve participants; therefore, ethics approval was not required (Pollock et al., 2023). However, ethical issues can emerge from scoping reviews related to reporting strategies and publishing practices (Creswell & Poth, 2018). Ethical issues were reduced by ensuring that there has been an acknowledgement of the use of instruments or data collection tools, citing evidence correctly and obtaining permission for copyright when required

(Creswell & Poth, 2018). In addition, consultation with the thesis team occurred throughout the scoping review process to discuss any potential ethical concerns preventively and as they arise.

Evidence Search

In developing the search strategy, JBI recommends a three-step process. The steps include identifying the relevant databases to be used for the search, determining keywords and limiters, and reviewing grey literature and the reference lists of articles and other sources (Peters et al., 2020a). Using a minimum of two appropriate databases is required for a JBI scoping review (Peters et al., 2020a). For this search, the following databases were used: CINAHL Plus with Full Text, MEDLINE, APA PsycINFO, Academic Search Complete, and ProQuest Dissertations and Theses – Full Text. The search was conducted on the EBSCO host research platform.

Search Development Worksheet

In preparation for the search, a *Search Development Worksheet* that was developed by Hayden and Premji (2022) was completed under the guidance of an external expert to refine the search terms identified in the priori protocol (see *Table 3.2 Search Development Worksheet* in *Appendix B: Search Strategies*). First, three seed articles were identified using the key terms described earlier in this section. These articles were used as comparators to ensure that the search strategy extracted applicable sources (Foli et al., 2014; Karaman et al., 2023; McQuiston & Hanna, 2015). Three main concepts emerged from these seed articles: nursing students, leadership, and evaluation. Key terms were extracted from these seed articles under each concept to confirm that the search strategy was correct. These key terms were used to create search strings using Boolean and proximity/adjacency operators, truncations, and phrase searching specific to each database. The same key terms and search phrases were applied to both the

database and grey literature searches.

A concise grey literature search was conducted using Google Advanced Search to find relevant information on the CNA, CASN, and RNAO websites. A template modified by Fuller and Lenton (n.d.) based on the work of Godlin et al. (2015) was used to guide the search by focusing on three main concepts: nursing students, leadership, and evaluation (see *Table 3.3: How to Find & Document Grey Literature Template*). Date and language filters were also applied to this search.

The decision to focus on these websites was based on their influential roles in the Canadian nursing field. For instance, CNA (n.d.) represents a national nursing voice and provides advocacy for nurses across all thirteen provinces. Furthermore, the CNA has authored various documents outlining the significance of leadership development in Canadian nursing and nursing education (Almost, 2021; CNA, 2009; Kilty, 2005). CASN (n.d.) was chosen for its role in the provision of standards that guide the development and maintenance of excellence in Canadian nursing education. They also authored the *National Nursing Education Framework,* which includes six learning domains, with leadership being one of these learning domains (CASN, 2022). The RNAO (n.d.) was chosen for its role as the largest professional nursing association in Canada, Ontario, representing over 90,000 registered nurses (Statista, 2022). The organization authored the document *Developing and Sustaining Nursing Leadership*, which offers guidelines for leadership practices for nurses at all levels, including students (RNAO, 2013).

As a final step in the evidence search stage, Peters et al. (2020a) suggest searching the reference lists of the included sources for additional sources. This was done after completing the full-text source screening. The identified sources were added to Zotero and then to Covidence for

screening.

Evidence Selection

Pilot Test

In preparation for this stage of the review, all team members, including the PI, the thesis supervisor, the committee member, and the second reviewer, completed a pilot test of screening source titles and abstracts to ensure clarity and consistency of the search criteria. The Excel template used to conduct the pilot tests was adapted from the *Study selection: Piloting the Inclusion/Exclusion Criteria* template created by Hayden and Premji (n.d.). According to Peters et al. (2020a), the pilot test should include a minimum of twenty-five sources, and all team members should participate in the pilot who are involved in the screening process. A pilot test is deemed successful once a minimum agreement of 75% is achieved among team members using protocol criteria (Peters et al., 2020a). During the pilot test, reviewers categorized sources as "yes," "no," or "maybe" to determine whether the source should be included in the search. Sources with all "no" were automatically excluded, while sources with all "yes" were included. If there was a disagreement between the reviewers (such as "yes/no" or "no/maybe"), a discussion was held to reach a consensus. If a consensus was not reached, a third reviewer was invited to determine the final decision (Mellor, 2021).

Two pilot tests were conducted, one with the entire team (n=4) and the second with only the screeners (n=2). The pilot tests are labelled *#1* and *#2 Inter-Rater Excel Spreadsheet,* each with 25 sources to screen. In pilot test #1, only 60% agreement was achieved. The pilot test did not meet the minimum 75% agreement. As a result of pilot test #1, additional terms were excluded from the population, concept, and context search criteria.

Population. *Non-registered/non-undergraduate nursing students, nursing*

instructors/teachers/faculty, new nurse graduates, graduate/doctorate/PhD nursing students, licensed practical nurse students, registered nurse (RN)/associate degree (AD) to bachelor/undergraduate nursing students, post-degree program nursing students, midwifery/psychiatric nursing students, and specialist/certificate program students. The rationale for removing these terms was that nurses in an RN/AD to BN or BSN program may have developed leadership competencies from their previous education and work experience. These students may require different leadership experiences to develop their skills than students in a four-year undergraduate program with minimal or no previous nursing experience (Kane et al., 2015).

Concepts. *Evaluation and leadership - evaluation of courses/intervention/teaching methods, evaluation of non-leadership skills in nursing practice, and evaluation of learning not for assessing leadership competency.* These changes provided additional clarity on the evaluation of leadership skills and ensured that other nursing skills evaluated in clinical settings were excluded. This also excluded sources that focused on evaluating leadership teaching methods and/or interventions.

Context. *Theory classes, case studies and practice scenarios, simulation, and nursing labs.* Simulation, case studies and nursing labs are intended to provide safe, non-evaluative environments for nursing students to learn and develop leadership skills in preparation for practice (University of Calgary, n.d.-c). De Juan Pardo et al. (2022) noted that these environments are focused on leadership development rather than on measuring the attainment of leadership competency.

Using the revised criteria, the pilot test team (n=4) repeated the same process and obtained 84% agreement on the sources' titles and abstract inclusions (see link #1 Inter-Rater

Excel Spreadsheet or available on request). The PI and the second reviewer completed a second

pilot test to ensure they agreed and fully understood the criteria prior to evidence screening. This

pilot test achieved 80% agreement (see link #2 Inter-Rater Excel Spreadsheet or available on

request).

Screening Evidence

After reaching a consensus with the pilot tests, the two reviewers conducted a first-pass

screening of the titles and abstracts of the sources. During the second pass or full-text review, the

PI and the second reviewer examined the full text of the sources included for review. At this

stage of the review, any excluded evidence required a justification for its removal from the study

(Mellor, 2021; University of South Australia, n.d.). Any conflicts that occurred between the

reviewers at this point were discussed to achieve consensus, providing an opportunity to clarify

the criteria further and ensure that both reviewers agreed (Peters et al., 2020a). The PRISMA

Flow diagram was used to illustrate the screening and inclusion/exclusion of sources (See

Diagram 3.1: PRISMA Flow Diagram Template in *Appendix A: Definitions and Priori*

Protocol).

Evidence Extraction and Charting the Results

The evidence was extracted, and the results were plotted from the sources into a table

format to provide the reader with a logical illustration and summary of the results from the

search (Peters et al., 2020a). *Table 3.4 Data Extraction Tool Template* (Appendix A), adapted

from the JBI's *Appendix 10.1 JBI template source of evidence details, characteristics and results*

extraction instrument, was used to extract the evidence (Peters et al., 2020a). Fifteen categories

were included in the *Data Extraction Tool Template* and used for evidence extraction:

author/year/title, country/origin, aim/purpose, study design/methodology, leadership definition,

population, evaluative process, leadership competencies, context, intervention, results of

evaluative process, recommendations, and comments. Sources were also presented in a table

depicting their characteristics in [Table 3.5: Presentation of Sources](#) (Appendix A). Categories for

the table were adapted from JBI's *Table 11.3: Example tabular presentation of data for a*

scoping review, which included the *number of publications, country of origin, type of source,*

population, concepts, context, and format (Peters et al., 2020a).

Evidence Analysis

Scoping reviews are intended to map existing literature rather than to synthesize evidence

for creating a theory or concept, as done in a systematic review (Peters et al., 2020a; Pollock et

al., 2023). Therefore, the objective of the evidence analysis for this review is to categorize

frequently recurring data patterns (population, concepts, contexts) and to address the research

question (Peters et al., 2020a). To categorize the data, a qualitative content analysis approach

was used to analyze the evidence (Elo & Kyngäs, 2008).

Qualitative Content Analysis

The process of qualitative content analysis involves examining words, concepts, and

themes in the evidence and categorizing them into qualitative categories (Elo & Kyngäs, 2008).

According to Elo and Kyngäs (2008), content analysis consists of three phases: preparation,

organizing, and reporting. During the preparation phase, an inductive approach was used to code

the evidence, identifying patterns, themes, or frequent words for analysis without predefined

categories (Delve & Limpaecher, 2023). In the organizing phase, the coded evidence was

classified into main and sub-categories (Elo & Kyngäs, 2008). The final phase, reporting,

included presenting the results in tables and diagrams and discussing the analysis outcome (Elo

& Kyngäs, 2008). This process provided a conceptual map of the evidence, aiding in addressing

the research question.

Presentation of Results

This stage of the scoping review presents large amounts of data in visual and narrative summaries, making it easier for the reader to understand the scope of the literature on the topic (Peters et al., 2020a). The population, concepts, and context were presented in various tables to demonstrate how the evidence aligns with the objective and research question of the review. These findings will be discussed in *Chapter 4. Results*.

Discussion and Conclusion

The discussion and conclusion of the evidence are the final stages of the scoping review. The discussion stage summarized the key concepts that emerged from the analysis and how they impact policy or practice (Tricco et al., 2018). Although scoping reviews do not commonly provide direct implications for practice, the evidence presented may be relevant for knowledge users and other invested partners to consider when informing their practice (Peters et al., 2020a; Tricco et al., 2018). Additionally, gaps identified in the literature are used to support the rationale for future research (Peters et al., 2020a; Tricco et al., 2018). The study's limitations are also mentioned in the discussion stage. The conclusion summarizes how the evidence addressed the research question(s) and achieved the study's primary objective (Peters et al., 2020a).

Summary

A JBI methodology was employed to conduct this scoping review. The review followed seven stages, as outlined in this chapter, to address the study's objective and research question. A team of six individuals was recruited for the study to ensure credibility and rigour. The contributors to the study and the manuscript development are acknowledged in the *Acknowledgments* section. No funding was obtained or utilized for this study. Throughout the research process, a reflexive journal was maintained to record field notes and to reflect on

brainstorming ideas during the analysis of evidence. While this will not be discussed in this

paper, it is available upon request.

Chapter 4. Results

The results of this scoping review are categorized into five sections: (a) evidence search; (b) evidence selection; (c) evidence extraction and charting the results; (d) evidence analysis; and (e) presentation of results.

Evidence Search

Database Search

The total number of sources included in the first stage of the evidence selection from all databases was 583 (see *Table 4.1: Database Search Results* in *Appendix C: Results*).

Grey Literature Search

Eighteen sources from the Google Advance Search were uploaded to Zotero. This portion of the search proved time-consuming and inconsequential, as it was challenging to replicate searches and resulted in no relevant topic results. None of these sources moved into full-text screening (see *Table 3.3: How to Find & Document Grey Literature Template*).

Citation Search

The reference lists of included full-text sources (n=12) were scanned for applicable sources that did not appear in the database or grey literature searches. Five additional sources were uploaded to Zotero from the citation search; however, none were included for full-text review (see *Table 4.2: Citation Search* in Appendix C). A total of 606 sources, including the database, grey literature, and reference list searches, were uploaded from Zotero to Covidence for further analysis.

Evidence Selection

Title and Abstract Screening

Three duplicate sources were manually removed, and 66 duplicate sources were

automatically removed when uploaded to Covidence. The reviewers independently screened and

excluded 478 sources by title and abstract, and only 59 sources were moved to full-text

screening.

Full-Text Screening

Two reviewers screened these 59 full-text sources, using the inclusion and exclusion

criteria discussed earlier in this document in relation to population, concepts, and context. For

each source exclusion and inclusion, a decision was recorded in Covidence to provide a record of

evidence for transparency. Of the 59 sources, 47 sources did not meet the inclusion criteria.

These sources were excluded for the following reasons:

- thirty-two sources were excluded based on their primary focus not being relevant to

  evaluative processes and or leadership competencies;

- nine sources were excluded based on their context not being in the clinical practice

  setting;

- one source was excluded for the incorrect population (RN to BSN nursing students);

- three sources focused on learning leadership skills, not evaluating leadership

  competency;

- two sources focused on the evaluation of the teaching intervention, not the leadership

  competencies of the students.

In the case of a conflict between the reviewers, a discussion to inform consensus took place.

The PI's supervisor decided whether the sources met the inclusion criteria when there was no

consensus between the two reviewers. *Diagram 4.1: PRISMA Flow Diagram* presents the results

of twelve sources included in the screening process.

Diagram 4.1

PRISMA Flow Diagram
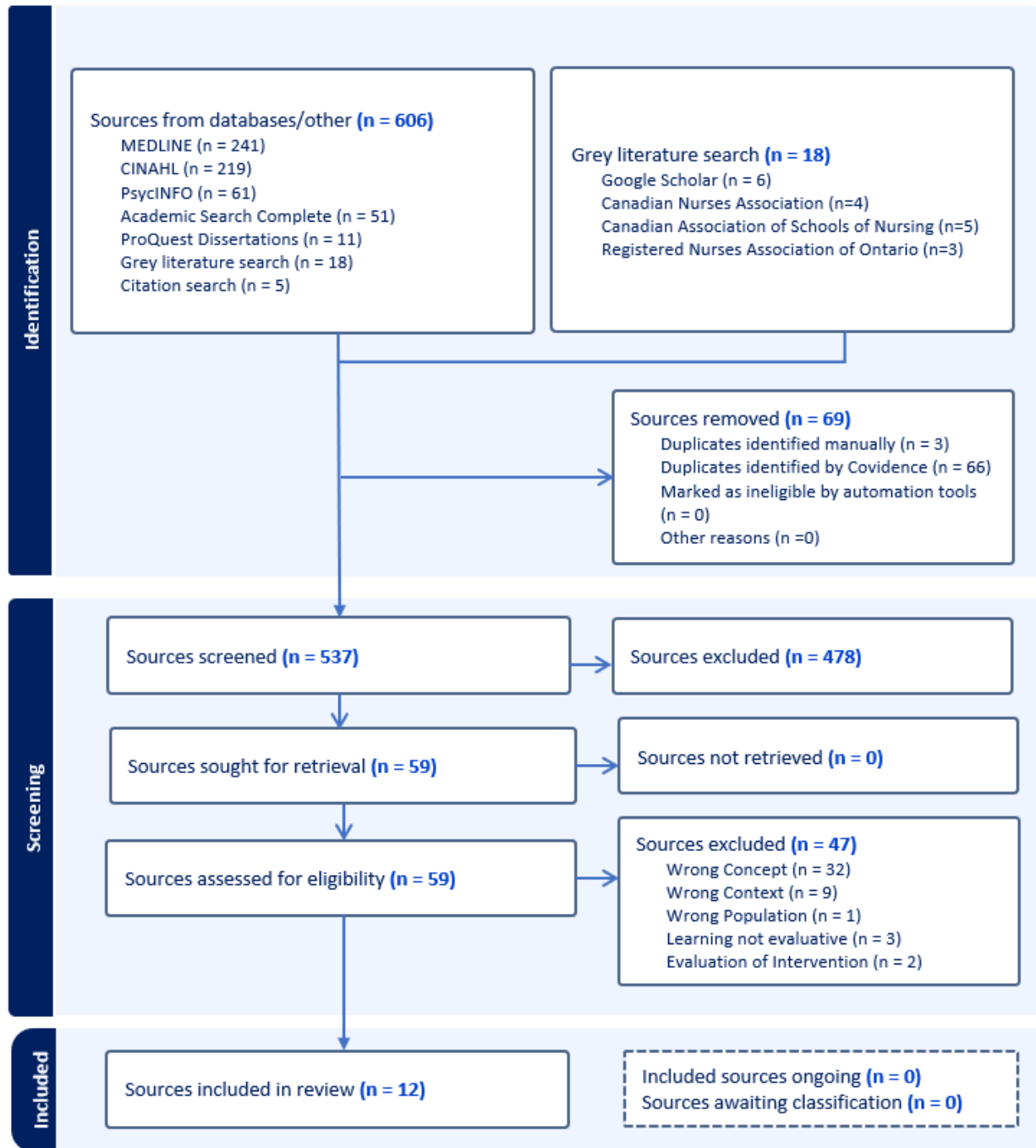
Note. Auto-formatted on June 5, 2024, by Covidence and adapted from Page, M. J. et al. (2021).

The PRISMA 2020 statement: An updated guideline for reporting systematic reviews.

Evidence Extraction and Charting the Results

The evidence from the 12 sources was extracted to an Excel spreadsheet using the *Data Extraction Tool Template.* One extractor, the PI, extracted the evidence and plotted it into categories. Regular meetings with the second reviewer were undertaken to ensure the transparency and accuracy of the data extracted. The result of the *Data Extraction Tool* is available upon request or can be viewed at this link: *Data Extraction Tool*. The characteristics of the sources were extracted from the 12 sources and added to *Table 4.3 Presentation of Sources*.

Source Characteristics

Eleven of the twelve sources reported on research studies in peer-reviewed journals (De Juan Pardo et al., 2022; Dimino et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021). One source was a thesis study (Campbell, 2018). Five of the studies were conducted in the United States, two in Spain, and one each in Jordan, Iran, Italy, Turkey, and the United Kingdom. No studies were conducted in Canada.

Two studies used a cross-sectional design (Notarnicola et al., 2018; Suliman et al., 2023). There was one study for each of the following types: quasi-experimental (Campbell, 2018), feasibility (De Juan Pardo et al., 2022), a systematic review (Dimino et al., 2022), pretest and post-test (Foli et al., 2014), validation (Fuster Linares et al., 2020), mixed methods (Galuska, 2015), methodology (Karaman et al., 2023), quality improvement (McQuiston & Hanna, 2015), randomized control trial (Mirbagher Ajorpaz et al., 2016), and a tool validation study (Unsworth et al., 2021).

Population(s)

Respectively, the populations represented in these studies included fifth-semester

undergraduate nursing students (Campbell, 2018), senior (third or fourth year) Bachelor of Science in Nursing students (De Juan Pardo et al., 2022), senior nursing students (Dimino et al., 2022; Galuska, 2015), senior-level baccalaureate nursing students (Foli et al., 2014), years one to four undergraduate nursing students (Fuster Linares et al., 2020), bachelor's degree level nursing students (Karaman et al., 2023), senior leadership and junior medical/surgical nursing students (McQuiston & Hanna, 2015), final-semester Bachelor of Nursing operating room students (Mirbagher Ajorpaz et al., 2016), third-year Bachelor of Nursing Students (Notarnicola1et al., 2018), third and fourth-year Bachelor of Nursing students (Suliman et al., 2023), and Master of Nursing students (Unsworth et al., 2021). Despite master's level nursing students not being included in the criteria, the study by Unsworth et al. (2021) was included because the study developed a tool for evaluating the leadership competency of undergraduate nursing students.

Concept

Eleven of the studies discussed an evaluative process to measure leadership competency in undergraduate nursing students (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023). The only exception is the study by Unsworth et al. (2021), which focused on developing an evaluation tool to measure leadership competency for use with undergraduate nursing students while conducting research with Master of Nursing students.

Context

Four studies identified the nursing program in general as their context (Fuster Linares et al., 2020; Karaman et al., 2023; Notarnicola et al., 2018; Suliman et al., 2023), two studies cited a medical-surgical unit (Galuska, 2015; McQuiston & Hanna, 2015), two studies cited a service-

learning opportunity (Campbell, 2018; Foli et al., 2014), and three cited a dedicated education unit (De Juan Pardo et al., 2022; Dimino et al., 2022; Galuska, 2015). One study identified the operating room as their context (Mirbagher Ajorpaz et al., 2016), and one referred to adult, children, and mental health practice settings (Unsworth et al., 2021).

Evidence Analysis

The key findings from the data collected using the *Data Extraction Tool* are summarized in *Table 4.4: Key Findings Evidence Comparison* (see *Appendix D: Extraction, Charting and Presentation of Results*). These findings focused on the evaluative processes, nursing leadership competencies, and recommendations that were identified and compared across the studies. The leadership competencies highlighted in the studies identified 40 skills and behaviours, detailed in *Table 4.5: Leadership Competency Skills and Behaviours*. These skills and behaviours were collated into five central measures of undergraduate nursing student leadership competency attainment depicted in *Table 4.6 Measures of Leadership Competency*. The recommendations from *Table 4.4: Key Findings Evidence Comparison* are discussed in *Chapter 5*.

Given the findings from the preliminary literature review to inform this scoping review regarding the lack of consensus on a definition of nursing leadership in academia, attention was given to the definition included in the studies (n=12) reviewed. Only two studies provided a conceptual definition of nursing leadership (*Table 4.7: Definitions of Leadership*). The following sections provide a detailed description of the results of this review.

Presentation of Results

Evaluative Processes

The evaluative processes used to determine the attainment of nursing leadership competencies varied significantly, but all studies described the use of a written assessment tool.

Nine assessment tools were identified, including:

- Youth Leadership Life Skills Development Scale (YLLSDS; Campbell, 2018);

- Spanish Version of the Self-Assessment Leadership Instrument (SALI or EsSALI; De Juan Pardo et al., 2022; Fuster Linares et al., 2020);

- Leadership Practices Inventory (LPI or LPI-Self or LPI-Observer; Dimino et al., 2022; Foli et al., 2014; Galuska, 2015);

- Educational Leadership Scale for Nursing Students (ELS; Karaman et al., 2023);

- Lasater Clinical Judgment Rubric (LCJR; McQuiston & Hanna, 2015);

- Persian Version of the Perceived Perioperative Competence Scale-Revised (PPCS-R; Mirbagher Ajorpaz et al., 2016);

- Italian Version of the Nurse Competence Scale (NCS; Notarnicola et al., 2018);

- Nursing Professional Competencies Scale-Short Form (NPC-SF; Suliman et al., 2023); and

- Leading and Managing Care (LMC) Assessment Tool (Unsworth et al., 2021).

These tools are designed to assess various aspects of leadership skills and competency in nursing practice. Five of the nine assessment tools used self-assessment from nursing students as their primary measure to evaluate nursing leadership competency (Campbell, 2018; Dimino et al., 2022; Fuster Linares et al., 2020; Karaman et al., 2023; McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023). Two assessment tools used both self-assessment and observer/peer assessment (De Juan Pardo et al., 2022; Foli et al., 2014; Galuska, 2015). Two assessment tools used only faculty or practice instructor assessments (Mirbagher Ajorpaz et al., 2016; Unsworth et al., 2021). These findings are depicted in *Table 4.4: Key Findings Evidence Comparison*.

Five out of the nine assessment tools are specifically designed for measuring and assessing nursing leadership competencies (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Unsworth et al., 2021). Four of the nine assessment tools measure general nursing competencies but have a nursing leadership competency component (McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023).

Measures of Nursing Leadership Competency

Leadership competency measures are referred to as both skills and behaviours in the studies. According to Suliman et al. (2023), "nursing competencies are composed of series of single, discrete measurable behaviors or skills that are mandatory at the target level of practice" (p. E10). This review revealed 40 unique skills and behaviours relevant to the evaluation of leadership competency attainment by undergraduate nursing students, as depicted in *Table 4.5. Leadership Competency Skills and Behaviours* in Appendix D. These skills and behaviours are categorized under five measures of leadership competency that emerged as major themes from the review:

- communication
- clinical competence
- role modelling
- supervision
- collaboration

The most frequently cited measure of leadership competency was *Communication,* which was included as a measure in eight of the nine tools (Campbell, 2018; De Juan Pardo et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Notarnicola et

al., 2018; McQuiston & Hanna, 2015; Suliman et al., 2023; Unsworth et al., 2021). Skills and

behaviours applicable to this measure of leadership competency have been identified as using

clear communication, asking for information, providing expertise and feedback, participating in

research, documentation, and challenging the process (Foli et al., 2014; Galuska, 2015; Karaman

et al., 2023; McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023).

  Clinical Competence was the second most cited measure of leadership competency,

including eight of the nine tools. Skills and behaviours applicable to this measure of leadership

competency have been identified as autonomous practice, care prioritization, clinical judgement,

data discernment, decision-making, contribution to an educational environment, tutoring,

developing educational interventions, evidence-based practice, observing and interpreting

clinical deviations, learning medical and technical care, organization and coordination of care

administration, delivering patient and family education, preventative nursing care, proficiency,

and technical skills (Campbell, 2018; Dimino et al., 2022; Karaman et al., 2023; McQuiston &

Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023;

Unsworth et al., 2021).

  Role modelling was the third most cited measure of leadership competency, included in

eight of the nine tools. Skills and behaviours in this category are calmness and confidence,

demonstrating professional role development, emotional intelligence, empathy, flexibility,

inspiring a collective vision, professional ethics, ethical values, seeking assistance, self-

assessment and improvement, self-care, strategic thinking, value-based care, "modelling the

way," "encourage the heart," and "thinking like a nurse" (Campbell, 2018; De Juan Pardo et al.,

2022; Dimino et al., 2022, p. 193; Foli et al., 2014, p.77; Fuster Linares et al., 2020; Galuska,

2015, p. 386; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016;

Notarnicola et al., 2018; Suliman et al., 2023).

Supervision was the fourth most cited measure of leadership, included in seven of the nine tools. Skills and behaviours in this category are charge nurse activities, delegation, directing the situation, empowering the actions of others, management of care, providing guidance and feedback, resource management and coordination, and risk assessment and control (Campbell, 2018; Foli et al., 2014; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021).

The last most frequently cited measure of leadership competency, *Collaboration*, was included in six of the nine tools. Skills and behaviours in this category are working with groups, teamwork, leading discussions, multidisciplinary care, collegiality, interpersonal harmony, shared governance, and democracy (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018). See *Table 4.6: Measure of Leadership Competency* for a summary of these measures.

Table 4.6

Measures of Leadership Competency

Measure of Leadership Competency	Skills/Behaviours	Source	Instruments
Communication	Asking for information Using clear and open communication *Challenge the process* Documentation Participation in research Providing guidance and feedback	Campbell, 2018; De Juan Pardo et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Notarnicola et al., 2018; McQuiston & Hanna, 2015; Suliman et	YLLSDS, SALI, LPI, ELS, LCJR, LMC, NCS, NPC-SF

		al., 2023; Unsworth et al., 2021	
Clinical Competence	Autonomous Care prioritization Clinical judgement Data discernment Decision-making Educational environment creation Tutoring Educational interventions Evidence-based practice Interpreting clinical deviations Learning Medical and technical care Organization, coordination of care Administration and development of nursing care Patient education Pedagogic care Preventative nursing Proficiency Technical skills	Campbell, 2018; Dimino et al., 2022; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021	YLLSDS, ELS, LPI, LCJR, LMC, NCS, NPC-SF, PPCS-R
Role Modelling	Calmness and Confidence Demonstrating professional role development *Encourage the heart* Emotional intelligence Empathy Flexibility *Inspire a shared vision* Professional ethics, ethical values *Modelling the way* Seeks assistance Self-assessment and Improvement Self-care Strategic thinking *Thinking like a nurse* Value-based care	Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Foli et al., 2014; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023	YLLSDS, ELS, LCJR, LPI, PPCS-R, NCS, NPC-SF, SALI
Supervision	Charge Nurse Activities Delegation Directing the situation Enabling others to act Management/management of care Observation Providing guidance and feedback Resource management and coordination Risk Assessment and Control	Campbell, 2018; Foli et al., 2014; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021	YLLSDS, ELS, LCJR, LMC, LPI, NCS, NPC-SF

Collaboration	Collegiality Democracy Interpersonal Harmony Leading discussions Multidisciplinary care Shared governance Teamwork Working with groups	Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018	YLLSDS, SALI, LPI, ELS, NCS, PPCS-R

Note. Five measures of leadership competency emerged from *Table 4.5: Leadership Competency Skills and Behaviours* identified in the twelve sources.

Definitions of Nursing Leadership

Similar to the results of the preliminary review in preparation for this scoping review, there was limited information on a definition of nursing leadership in these academic studies. Only two of the 12 studies cited a definition of nursing leadership for application in academia (Fuster Linares et al., 2020; Unsworth et al., 2021). However, these authors provide a starting point for identifying and adopting a nursing leadership definition by Canadian undergraduate nursing programs. Defining a competency, in this case, nursing leadership, is the first step in effectively assigning attributes for measurement. *Table 4.7 Definitions of Leadership* includes these two definitions of nursing leadership.

Table 4.7

Definitions of Nursing Leadership

Article/Date	Definition of Nursing Leadership
Fuster Linares et al. (2020)	"We understand leadership to be the capacity to influence individuals and/or groups, while showing forward thinking and the ability to foster personal and professional development" (Poblete & Villa, 2007, as cited in Fuster

	Linares, 2020, p.1). "Leadership implies both personal qualities, such as the ability to make decisions and solve problems, and interpersonal competencies, notably the capacity to enable teamwork" (p. 1).
Unsworth et al. (2021)	"Ha and Pepin (2018) describe how leadership is a competency demonstrated in clinical care by nurses who are working with and influencing others to provide safe and high quality care. For the purpose of this study, we expanded this definition and identified that clinical nursing leadership relates to a set of competencies, which nurses use to coordinate a team to deliver safe, timely and effective care to patients. The competencies include team working and communication, prioritisation of care needs, delegation, and the identification and management of risk" (p. 2).

Note. Definitions were extracted from two sources for comparison and analysis (Fuster Linares et al. (2020), and Unsworth et al. (2021).

Summary

A total of 606 sources were screened for possible inclusion in this JBI scoping review. A final 12 studies were included for evidence extraction. These studies explored evaluative processes for assessing the attainment of leadership competency by undergraduate nursing students. Many of these evaluative processes utilized self-assessment tools, which required students to self-report evidence of their leadership skills and behaviours as a measure of competency. Chapter 5 discusses how these results answer the research question and provides recommendations for implications in academia and future research in this area of study.

Chapter 5. Discussion

This JBI scoping review was undertaken to answer one question: ***What evaluative***

processes are used to determine the attainment of leadership competency of undergraduate

nursing students in clinical practice?

This review identified nine tools, either used in whole or in part, to measure the

attainment of leadership competency in undergraduate nursing students in clinical practice. The

tools mainly used self-assessment by the students as an evaluative process, with only five tools

that included an observer component. These tools identified several skills and behaviours, which

were distilled into five major measures of leadership competency - communication, clinical

competence, role modelling, supervision, and collaboration. Despite the lack of a consistent

definition for nursing leadership in undergraduate nursing education in the literature, these

identified measures are useful for creating an operational definition and guiding the evaluation of

nursing students in clinical settings.

Self-Assessment as an Evaluative Process

The evaluative process cited most frequently in seven studies was *self-assessment*

(Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Foli et al., 2014; Fuster

Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015;

Notarnicola et al., 2018; Suliman et al., 2023). Three of the studies described the use of observer

and self-assessment as a combined evaluation process method for assessment, and two studies

used an observer-only evaluation process to assess the student's attainment of nursing leadership

competency (See *Table 4.4: Key Findings Evidence Comparison*; De Juan Pardo et al., 2022;

Foli et al., 2014; Galuska, 2015; Mirbagher Ajorpaz et al., 2016; Unsworth et al., 2021).

Self-assessment is an important skill for healthcare providers to acquire, and it is

especially important after graduation and registration to identify ongoing learning needs and continue competency planning. Undergraduate nursing students develop self-reflection skills through self-assessment, which helps them identify gaps in their leadership competency, giving them time to make improvements before final evaluations (Campbell, 2015). Fuster Linares et al. (2020) argue that self-assessment is a crucial component of transformational leadership, a highly effective leadership style used to address the challenging needs in health system contexts.

Self-assessment has been deemed an appropriate evaluation process for advanced practice student nurses (Taylor et al., 2019). However, the same has yet to be supported for undergraduate nursing students (Baxter & Norman, 2011). Campbell (2018), Dimino et al. (2022), and Suliman et al. (2023) question the validity of self-assessment as an appropriate evaluation process for undergraduate nursing students. These students may lack leadership experience and have limited knowledge of leadership skills, and their evaluation of their leadership competency may be overestimated compared to how their instructor would objectively measure it (Suliman et al., 2023). Baxter and Norman (2011) warn about the overreliance on self-assessment in determining student competency, noting the growing evidence of its ineffectiveness as the sole evaluative tool. Evaluation processes in undergraduate nursing education require the use of both self-assessment (professional development) and objective assessment (professional competency) (Purdy, 1995).

Two studies described the use of evaluative tools by faculty members or educators who assessed the students' leadership competency (Mirbagher Ajorpaz et al., 2016; Unsworth et al., 2021). In three other studies, both student assessments and peer observers, nurse mentors, and clinical mentors were used to evaluate the students' leadership skills and behaviours (De Juan Pardo et al., 2022; Foli et al., 2014; Galuska, 2015). De Juan Pardo et al. (2022) found that

students perceived themselves as more competent than their clinical mentors observed, emphasizing the need to reconsider self-perception when evaluating leadership competence. In the studies by Foli et al. (2014) and Galuska (2015), student assessments were generally aligned with assessments by their peers and nurse mentors. However, Dimino et al. (2022) reported in their systematic review that self-reporting is considered the lowest level of learning evaluation from an academic standpoint. They stressed the importance of quantitative behavioural changes and objective data to effectively assess nursing students' learning outcomes (Dimino et al., 2022). Identifying reliable measures to standardize practices in undergraduate clinical nursing education is crucial.

Observer assessments utilize structured criteria that nursing educators can use to evaluate nursing students. These structured criteria clearly define measures of competency, including skills and behaviours that can be assessed through actions or activities. Despite a heavy reliance on observer assessment for many nursing competencies (for example, completing a catheter insertion or an intravenous start on a patient requires direct supervision of the nursing instructor to ensure the student is safe and competent to perform the skill independently), there is a lack of objective measures outlining nursing leadership competency, and specific, measurable outcomes are needed to determine leadership competency in nursing students (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Suliman et al., 2023). Nursing leadership as a component of nursing education has been referred to as a "soft skill" (Raso, 2023, p. 4). However, Raso (2023) challenges that leadership needs to be recognized as a "hard skill" that is "definable, teachable, observable," and a competency that is determined by objective measures (p. 4).

Measures of Leadership Competency

Nine tools were identified for use within the evaluation processes to measure the

attainment of leadership competency in undergraduate nursing students in clinical practice. These tools identified various skills and behaviours utilized for both self-assessment and observer assessment. A total of 40 skills and behaviours were identified; for brevity and clarity, these 40 items were condensed into five major categories: Communication, clinical competence, role modelling, supervision, and collaboration (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Foli et al., 2024; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021).

Communication

Ten studies mentioned the importance of building communication skills as a measure of leadership competency (Campbell, 2018; De Juan Pardo et al., 2022; Foli et al., 2014; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Notarnicola et al., 2018; McQuiston & Hanna, 2015; Suliman et al., 2023; Unsworth et al., 2021). The ability to communicate effectively is one of the first skills that undergraduate nursing students are expected to master and demonstrate, and for novice nurse leaders, it is an essential skill.

As a component of their attainment of leadership competency, undergraduate students must be provided with multiple opportunities to practice their communication skills in the clinical setting (Scammell et al., 2020). Learning to facilitate and promote effective communication among teams that are collaborative and supportive is an essential skill and behaviour in leadership competency (Jankelová & Joniaková, 2021). Effective communication demonstrates listening to others, providing empathetic and constructive feedback, conflict resolution, and building and maintaining professional relationships (Jankelová & Joniaková, 2021). Communication leadership competency may also include leading presentations, speaking at meetings, addressing conflicts, participating in committees, and contributing to policy

decision-making (Mrayyan et al., 2023). Ineffective communication can not only affect the team but also impact the quality and safety of patient care (Jankelová & Joniaková, 2021). Both self-assessment and observer evaluation of this skill are essential components of evaluating leadership competency.

Clinical Competence

Developing clinical competence was identified in eight studies as an important skill for the attainment of leadership competency in undergraduate nursing students (Campbell, 2018; Dimino et al., 2022; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021). A standard number of clinical hours are typically assigned to undergraduate nursing students for the completion of their degree. Clinical practice is meant to support their development of clinical competence and provide multiple evaluations of this competence. These hours are critical to patient safety and prepare novice nurses to lead and direct care upon graduation and registration.

A study of hospital nurses demonstrated that nurses report clinical competence as an important attribute of nursing leadership (Mrayyan et al., 2023). A highly skilled clinician who is competent in skills and actions imparts confidence and serves as a role model for clinical leadership, ensuring the delivery of excellent care (Mrayyan et al., 2023). Integrating clinical competence as a crucial aspect of leadership competency attainment could improve faculty and instructors' ability to assess this skill in clinical settings. The evaluation of clinical competence is highly reliant on observer assessment. Self-assessment of these skills/behaviours is more focused on identifying learning needs that the student can provide to the faculty member or instructor in a learning plan for the semester.

Role Modelling

Eleven studies identified role modelling as a measure of undergraduate nursing student leadership competency attainment (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Foli et al., 2014; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023). According to Felstead (2013), role modelling is defined as someone who emulates a social role or behaviour for others to follow. They demonstrate a positive standard, and others seek to replicate their attitudes and values (Felstead, 2013).

A study by Mrayyan et al. (2023) surveyed 296 registered nurses who worked in Jordan and identified that role modelling is associated with one of the five most common attributes of clinical leadership in nursing. Characteristics demonstrating role modelling include being skilled decision-makers and visionaries who support and advocate for change and nurses who are visibly available to act as role models for change through motivation and mentorship (Jankelová & Joniaková, 2021; Mrayyan et al., 2023). Role modelling opportunities in the clinical setting is an essential skill that nursing programs need to integrate into their program to encourage the development of this leadership competency. Instructors or peers who lead through role modelling provide students with the opportunity to emulate these behaviours. This can be demonstrated in students coaching junior nurses in the clinical setting and providing feedback to their peers on their clinical actions (Galuska, 2015; Foli et al., 2014; McQuiston & Hanna, 2015). Both instructor and peer observer evaluation would be an effective evaluative process in evaluating role modelling in this measure of competency.

Supervision

Eight studies identified supervision as a measure of undergraduate nursing student leadership competency attainment (Campbell, 2018; Foli et al., 2014; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et

al., 2021). Clinical supervision is a professional support and learning process for nurses as it involves regular discussions with colleagues to help nurses develop their practice (Brunero & Stein-Parbury, 2008). During clinical supervision, nurses utilize reflective practices to identify and address their professional development needs, ultimately aiming to enhance nursing practice, particularly by improving nurse-patient interaction (Brunero & Stein-Parbury, 2008). Often, instructors are viewed as the primary supervisors of students. However, students can also take the lead in supervising their peers on clinical issues and patient care to enhance comprehension through reflection and feedback, thereby increasing professional growth (Brunero & Stein-Parbury, 2008).

Through this skill, students can develop increased collegial support and understanding of how to improve quality patient care (Brunero & Stein-Parbury, 2008). Galuska (2015) and Unsworth et al. (2021) advocate for students to be provided ample opportunities to practice supervisory skills and build leadership competency. Opportunities to practice this skill aid in building the novice leader's confidence in supervising peers and managing care in preparation for entry-level nursing practice (Scammell et al., 2020). Both self- and observer-evaluative processes would be useful to assess the measure of competency of this skill. Since supervision is also a reflective process, the student would benefit from reflecting on their growth in this skill.

Collaboration

Eight of the studies indicated that collaboration was a measure of leadership competency for a nursing student to develop (Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018). Heinen et al. (2019) established that collaboration is a skill and behaviour that is a leadership core competency. This includes active participation and

communication with the interdisciplinary team - including physicians, staff nurses, nurse managers, other healthcare professionals, and the student's peers and instructor – in patient care discussions and care rounds (Heinen et al., 2019).

Collaboration is one of the more challenging skills for students to develop due to their lack of experience in communicating with the healthcare team, and they require role modelling from their instructors to demonstrate how to collaborate with the team (Felstead, 2013). One example would involve students in discussions with other health professionals about their patients, encouraging them to share their assessments and recommendations for patient care. In addition, students benefit from collaborating with family members or other persons invested in the patient's care (Heinen et al., 2019). Providing students with the opportunity to practice these skills and behaviours in the clinical setting aids students in building confidence in working with teams and developing competency in collaboration (Applin & Eaton, 2018; Galuska, 2015; Nowell, 2016). Through this, instructors can observe and assess their student's progress and development in this skill and assist them in working towards this leadership competency.

Definitions in Leadership

Only two conceptual definitions of nursing leadership were identified from the literature included in this review for use in undergraduate nursing education studies (Fuster Linares et al., 2020; Unsworth et al., 2021). Nursing leadership is a topic of discussion in many contexts, and a variety of definitions have been presented in the literature; however, no universally accepted definition of nursing leadership has emerged in the context of Canadian undergraduate nursing education (Scammell et al., 2020; Scully, 2015). This lack of clarity in terms of a conceptual definition may hinder our ability to measure the attainment of this competency in clinical practice. When there is ambiguity or uncertainty in a concept, such as nursing leadership, an

operational definition can be useful for measuring the various variables of a concept (Graziano & Raulin, 2019). This could include the measurement tools used to quantify the attainment of the concept, as well as the skills and behaviours that can be measured. The leadership competency measures identified from the evaluative tools in these studies serve as a starting point for developing an operational definition of nursing leadership.

Communication, clinical competence, role modelling, supervision, and collaboration are skills and behaviours nursing students must practice, develop, and become competent in at an entry-level position before graduation. The measures of leadership competency identified and described in this review can be used by faculty to support the refinement of the current development of new clinical evaluation processes. In addition, these measures can be utilized to clarify an operational definition of nursing leadership in education. Nursing programs must expand on the objective descriptions of these skills so that nursing students can easily understand *what* is expected of them, and nursing educators will understand *how* to evaluate students through these specific evaluative measures.

Moreover, job satisfaction, staff retention, and patient safety are directly linked to nurses' advancement and engagement in leadership roles (Curtis et al., 2011b; Geerts et al., 2024; RNAO, 2013; Jankelová & Joniaková, 2021). Nursing programs have a unique opportunity to foster leadership in the clinical setting by providing a safe learning environment for self-reflection, practice, and feedback (McPherson & MacDonald, 2017). The discussed competency measures offer a framework for nursing programs to integrate evaluative processes into their clinical practice to effectively develop novice nurse leaders.

Gaps in Literature

Two major gaps were identified. Although this review provided insight into the

evaluation processes used to measure the attainment of leadership competency by undergraduate nursing students, the search revealed that no Canadian sources exist on this topic. Over 130 undergraduate nursing programs educate nursing students in Canada (CASN, 2023). Investigating the evaluation process used for leadership competency attainment assessment would be a valuable addition to the literature.

Secondly, self-assessment evaluation is prevalent in the literature as the primary process for assessing nursing leadership competency among undergraduate nursing students. Only two studies mentioned using an objective measure, such as an observer-only assessment, to evaluate nursing leadership competency in clinical practice (Mirbagher Ajorpaz et al., 2016; Unsworth et al., 2021). This implies that undergraduate nursing programs lack clear guidance on objectively measuring nursing leadership competency in clinical practice. More objective measures need to be explored to determine the leadership competency of nursing students (Dimino et al., 2022; Suliman et al., 2023).

Significance

The findings from this review provide new insights into Canadian undergraduate nursing programs, emphasizing the importance of nursing leadership and highlighting the ambiguity surrounding the evaluative processes for nursing leadership in nursing education. This scoping review provides a summary of the evaluative processes used to measure undergraduate nursing students' attainment of leadership competency. All studies identified a tool for the assessment of leadership competency attainment by undergraduate nursing students. These tools identified and defined five major measures of leadership, and they were used for self-assessment (n=7), observer and self-assessment (n=3), and observer-only assessment (n=2). These findings can be used by undergraduate nursing programs in Canada to assess and reflect on their evaluative

process in clinical settings and to ensure that more objective measures are utilized in their assessment process. Canadian programs can also compare their evaluation process with that of international schools of nursing.

Most studies (n=10) provided students with the opportunity to engage in self-assessment of their leadership skills and behaviours, which prompts further discussion about using self-assessment as the main method to evaluate this "soft skill" in nursing (Raso, 2023, p.4). Although self-assessment is an important skill for nursing students to develop, it should not be the major source of evaluative information for these critical nursing skills. Nursing leadership assessment in clinical settings should be given the same importance as other clinical competencies in Canadian undergraduate nursing education.

Given the critical role of visionary nursing leadership in today's complex healthcare system, it is essential for nursing leadership to be visible at all levels of the system (Mrayyan et al., 2023). The primary knowledge users for the findings of this study include nursing students, nursing instructors, nursing schools, curriculum and policy decision-makers, as well as other researchers (Pollock et al., 2023). This study will primarily impact the work of the principal investigator (PI), who serves as a nursing instructor, by integrating evidence-based knowledge into the assessment and evaluation of leadership competencies in nursing students at the PI's institution.

Limitations

There are several limitations inherent in this scoping review. The search strategy for this review was limited to English and a timeline of ten years. These limiters were added to the search to keep the work manageable within the thesis timeframe and to avoid employing additional assistance with interpretation services. A review with no limiters may have provided more results. Also, due to time and resource constraints, only a single extractor was involved in

this study. Despite JBI recommending a two-extractor process, it would have taken considerably more time to involve two extractors of evidence, including individually extracting evidence, comparing and discussing any conflicts, and amalgamating all the information consistently (Peters et al., 2020a). However, the JBI methodology is currently considered the most rigorous and transparent approach for conducting a scoping review (Pollock et al., 2023). Utilizing this methodology helped eliminate potential issues associated with conducting a scoping review and enhanced the overall quality of the review (Pollock et al., 2023).

There is also the possibility that despite the rigorous search that was conducted, published and unpublished sources were missed. Since the grey literature search was limited to three websites on Canadian nursing, a more expansive search examining all grey literature may have increased the mapping of available literature on this topic.

In addition to these limitations, there were some deviations from the original protocol. Initially, the protocol was intended to search Canadian literature only, but no sources were available to include in the search. The protocol was changed to have no geographical limiters. However, this led to an important finding related to a major gap in the Canadian literature in relation to nursing leadership competency attainment in undergraduate nursing education in this country.

Recommendations for Future Research

A summary of recommendations for future research from the studies in this review is included in *Table 4.4 Key Findings Evidence Comparison*. While this scoping review was not specifically intended to inform future research, it demonstrates the need for conducting a systematic review (Munn et al., 2018). Aside from the recommendations in Table 4.4, a more discrete recommendation from this review is the need for future research to explore leadership

assessment and evaluation processes from both nursing students' and instructors' perspectives in

Canada. Additionally, an environmental scan of evaluative processes used in Canadian nursing

programs should be conducted to investigate the consistency and differences among programs.

Most importantly, research needs to shift focus from the hypothetical "soft skill"

evaluative processes of leadership competency and concentrate on the skills and behaviours of

leadership competency in nursing education and how to objectively evaluate it (Raso, 2023, p.

4). This scoping review provides compelling evidence of a gap in the literature and nursing

education would greatly benefit from additional research on this topic.

Lastly, several authors have identified a pressing need for the development of a clear and

consistent conceptual and operational definition of leadership competency in nursing education

that is internationally accepted (Scammell et al., 2020; Scott & Miles, 2013; Scully, 2015). This

is crucial to bring credibility to the nursing profession and support the development of competent

nurse leaders who are nationally and internationally recognized and respected. Otherwise, the

nursing discipline will suffer without a clear description of what leadership is in nursing

education and practice (Scott & Miles, 2013).

Summary

Unfortunately, there was a significant gap in the literature pertaining to the research

question. This finding may negatively impact the nursing education system, and there is a

desperate need for future research in these areas. The consequence of not developing nurse

leaders because of poorly defined evaluation processes to assess this competency development

may degrade the nursing profession and ultimately lead to the loss of nurse leadership in

advocating and improving the healthcare system (Geerts et al., 2024; RNAO, 2013). This

evidence does not present a new problem. However, it confirms that there continues to be a gap

in establishing what defines nursing leadership, especially how it is defined and objectively measured in nursing education (Hsieh et al., 2022; Scammell et al., 2020; Scully, 2015).

As identified in this chapter, significant findings emerged from the evidence and gaps in the literature that impact the development and evaluation of nursing students' leadership competency in clinical practice settings. The most reported evaluation process was the use of tools for self-assessment, self-assessment/observer assessment, or observer-only assessment. Over 40 leadership skills and behaviours were reported and used to measure leadership competency in nursing students. The skills and behaviours were further distilled into five measures of nursing leadership competency. These measures can be considered for creating a consistent operational definition and objectives of leadership in nursing education that can be utilized nationally and internationally.

Chapter 6: Conclusion

Nursing leaders play a crucial role in advocating for high-quality patient care and enhancing health systems. The evaluation of the attainment of nursing leadership competency by undergraduate students in the clinical setting has been presented as challenging and complex. However, this challenge and complexity may stem more from the lack of consistent conceptual and operational definitions available to inform evaluation processes. This JBI scoping review was developed and completed to answer the following question: ***What evaluative processes are used to determine the attainment of leadership competency of undergraduate nursing students in clinical practice?***

Based on the analysis of evidence from the twelve studies for this scoping review, the major findings include:

1. High reliance on self-assessment for evaluating leadership competencies, as opposed to observer or objective evaluation processes.

2. The identification of the five measures of nursing leadership competency and how this can help develop objective measures for assessing nursing students' clinical practice.

3. A lack of consistency in both the conceptual and operational definitions of leadership in nursing education.

Clearly defined leadership skills and behaviours are necessary to objectively measure nursing students' leadership development. This study identified the five measures of nursing leadership competency: communication, clinical competence, role modelling, supervision, and collaboration. These skills are difficult to assess in nursing students without specific tasks provided as examples for both the student to work towards and for the educator to measure. Like other skills, specific objectives are provided for students to follow, and they are required to

practice these skills to ensure they can perform competently in the clinical setting.

      This review stimulated a new question: Why is there a lack of specific, objective examples demonstrating nursing leadership competency in the undergraduate academic literature? Clear objectives are necessary for the attainment of leadership skills and are essential for students and educators as they strive to demonstrate and evaluate effective leadership in the clinical setting.

References

Almost, J. (2021). *Regulated nursing in Canada: The landscape in 2021*. Canadian Nurses

    Association. https://hl-prod-ca-oc-download.s3-ca-central-

    1.amazonaws.com/CNA/2f975e7e-4a40-45ca-863c-

    5ebf0a138d5e/UploadedImages/documents/Regulated-Nursing-in-Canada_e_Copy.pdf

Applin, M., & Eaton, T. (2018). Student Preparation for Nursing Leadership: Lessons from an

    Undergraduate Programs Review. *International Journal of Nursing Education*

    Scholarship, *15*(1). https://doi.org/10.1515/ijnes-2017-0039

Arksey, H., & O'Malley, L. (2005). Scoping Studies: Towards a Methodological Framework.

    International Journal of Social Research Methodology, 8(1), 19–32.

    https://doi.org/10.1080/1364557032000119616

American Nurses Credentialing Center (ANCC). (n.d.). *Magnet Model - Creating a Magnet*

    Culture. https://www.nursingworld.org/organizational-programs/magnet/magnet-model/

Aromataris, E., Lockwood, C., Porritt, K., Pilla, B., & Jordan, Z. (Eds). (2024). *JBI Manual for*

    Evidence Synthesis. JBI; 2024. Available from: https://synthesismanual.jbi.global

    https://doi.org/10.46658/JBIMES-24-01

Baxter, P., & Norman, G. (2011). Self-assessment or self-deception? A lack of association

    between nursing students' self-assessment and performance: Self-assessment in nursing.

    Journal of Advanced Nursing, *67*(11), 2406–2413. https://doi.org/10.1111/j.1365-

    2648.2011.05658.x

Brunero, S., & Stein-Parbury, J. (2008). The Effectiveness of Clinical Supervision in Nursing:

    An Evidenced Based Literature Review. *Australian Journal of Advanced Nursing, 25*(3),

    86–94.

Byrd, J. E. (2022). *Leadership development in undergraduate nursing students*. (Honors Thesis, East Carolina University). http://hdl.handle.net/10342/10818

Campbell, E. (2018*). An Examination of Teaching-Learning Methods for the Acquisition of Leadership Skills in Undergraduate Nursing* [Ed.D., Creighton University]. In ProQuest Dissertations and Theses (2159463858). http://0-search.proquest.com.aupac.lib.athabascau.ca/dissertations-theses/examination-teaching-learning-methods-acquisition/docview/2159463858/se-2?accountid=8408

Campbell, F., Tricco, A. C., Munn, Z., Pollock, D., Saran, A., Sutton, A., White, H., & Khalil, H. (2023). Mapping reviews, scoping reviews, and evidence and gap maps (EGMs): the same but different- the "Big Picture" review family. *Systematic Reviews*, *12*(1), 45–45. https://doi.org/10.1186/s13643-023-02178-5

Canadian Association of Schools of Nursing / Association canadienne des écoles de sciences infirmières (CASN / ACESI). (2023). *Registered Nurses education in Canada statistics, 2021–2022 — Registered Nurse workforce, Canadian production: Potential new supply*. https://www.casn.ca/wp-content/uploads/2023/11/2021-2022-RNECS-Report-EN-Final.pdf

Canadian Association of Schools of Nursing / Association canadienne des écoles de sciences infirmières (CASN / ACESI). (2022). *National Nursing Education Framework*. https://www.casn.ca/wp-content/uploads/2022/12/National-Nursing-Education-Framework_2023_EN_FINAL-002.pdf

Canadian Association of Schools of Nursing / Association canadienne des écoles de sciences infirmières (CASN / ACESI). (n.d.). *About CASN*. https://www.casn.ca/about-casn/

Canadian Institute of Health Research (CIHR). (2010, March 25). *A Guide to Knowledge*

Synthesis—CIHR. Government of Canada. https://cihr-irsc.gc.ca/e/41382.html

Canadian Interprofessional Health Collaborative [CIHC]. (2024, April). *CIHC Competency Framework for Advancing Collaboration 2024*. https://cihc-cpis.com/wp-content/uploads/2024/06/CIHC-Competency-Framework.pdf

Canadian Nurses Association (CNA). (2009, October). *Nursing leadership* [Position statement]. https://hl-prod-ca-oc-download.s3-ca-central-1.amazonaws.com/CNA/2f975e7e-4a40-45ca-863c-5ebf0a138d5e/UploadedImages/documents/Nursing_Leadership_position_statement.pdf

Canadian Nurses Association (CNA). (n.d.). Our Mission | We are the Canadian Nurses Association. https://cna-aiic.ca/en/home

Canadian College of Health Leaders (CCHL). (n.d.). *The LEADS Framework*. https://cchl-ccls.ca/pld-leads/the-leads-framework/

College of Registered Nurses of Alberta (CRNA). (2019, March). *Entry-level competencies for the practice of registered nurses.* https://nurses.ab.ca/media/5ndpyfar/entry-level-competencies-for-the-practice-of-registered-nurses-mar-2019.pdf

Colley, S. L. (2019). Voices of Quiet Students: Introverted Nursing Students' Perceptions of Educational Experiences and Leadership Preparation. *International Journal of Nursing Education Scholarship*, *15*(1). https://doi.org/10.1515/ijnes-2018-0056

Collins. (n.d.). *Definition of 'process'.* Collins Dictionaries. https://www.collinsdictionary.com/dictionary/english/process

Creswell, J., & Poth, C. (2018). *Qualitative inquiry & research design: Choosing among five approaches.* (4th ed.). Los Angeles: Sage Publications.

Curtis, E. A., de Vries, J., & Sheerin, F. K. (2011a). Developing leadership in nursing: exploring

core factors. *British Journal of Nursing, 20*(5), 306–309.

Curtis, E. A., Sheerin, F.K., & de Vries, J. (2011b). Developing leadership in nursing: The

impact of education and training. *British Journal of Nursing, 20*(6), 344–352.

Delve, Ho, L., & Limpaecher, A. (2023, February 15). Content Analysis vs Thematic Analysis:

What's the Difference? *Delve.* https://delvetool.com/blog/content-analysis-vs-thematic-

analysis

De Juan Pardo, M. Á., Vissandjee, B., Guillaumet Olives, M., Cerezuela Torre, M. Á., & Gallart

Fernández-Puebla, A. (2022). Enhancing perceived leadership of nursing students

through a student-led dedicated education unit in a community setting: A feasibility

study. *Journal of Professional Nursing, 43*, 152–161.

https://doi.org/10.1016/j.profnurs.2022.10.009

Dickson, G., & Van Aerde, J. (2018). Enabling physicians to lead: Canada's LEADS framework.

International Journal of Health Care Quality Assurance Incorporating Leadership in

Health Services, 31(2), 183–194. https://doi.org/10.1108/LHS-12-2017-0077

Dickson, G., & Tholl, B. (2014). *Bringing leadership to life in health: LEADS in a caring*

environment a new perspective (1st ed. 2014.). Springer London.

https://doi.org/10.1007/978-1-4471-4875-3

Dimino, K., Vargas, P., & Banks, J. M. (2022). Student Learning Outcomes of Dedicated

Education Units: A Systematic Review. *Journal of Doctoral Nursing Practice, 15*(3),

188–196. https://doi.org/10.1891/JDNP-2021-0036

Eakin, J. [Centre for Critical Qualitative Health Research]. (2018a, August 23). *Qualitative*

Analysis and Interpretation I: Theoretical Background and Introduction [Video].

YouTube. https://www.youtube.com/watch?v=hHQhzdV1UxE

Eakin, J. [Centre for Critical Qualitative Health Research]. (2018b, May). *Creative presence of the researcher and reflexivity* [Video]. YouTube. https://youtu.be/EZI0T9izAZo

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Felstead, I. (2013). Role modelling and students' professional development. *British Journal of Nursing, 22*(4), 223–227. https://doi.org/10.12968/bjon.2013.22.4.223

Foli, K. J., Braswell, M., Kirkpatrick, J., & Lim, E. (2014). Development of Leadership Behaviors in Undergraduate Nursing Students: A Service-Learning Approach. *Nursing Education Perspectives (National League for Nursing), 35*(2), 76–82. https://doi.org/10.5480/11-578.1

Francis-Shama, J. (2016). Perceptions of leadership among final-year undergraduate nursing students. *Nursing Management*, *23*(7), 35–39. https://doi.org/10.7748/nm.2016.e1535

Fuller, K. & Lenton, E. (n.d.). *How to Find & Document Grey Literature*. University of Toronto Libraries. https://guides.library.utoronto.ca/c.php?g=577919&p=4123572

Fuster Linares, P., Rodriguez Higueras, E., Martin-Ferreres, M. L., Cerezuela Torre, M. Á., Wennberg Capellades, L., & Gallart Fernández-Puebla, A. (2020). Dimensions of leadership in undergraduate nursing students. Validation of a tool. *Nurse Education Today*, *95*, 104576–104576. https://doi.org/10.1016/j.nedt.2020.104576

Galuska, L. A. (2014). Education as a springboard for transformational leadership development: Listening to the voices of nurses. *The Journal of Continuing Education in Nursing, 45*(2), 67-76. https://doi.org/10.3928/00220124-20140124-21

Galuska, L. A. (2015). Dedicated Education Units: Partnerships for Building Leadership Competency. *The Journal of Nursing Education, 54*(7), 385–388.

https://doi.org/10.3928/01484834-20150617-05

Gamboa, A. (2023, July 24). *Nurse instructor career overview*. Nursing Education.

https://nursingeducation.org/careers/nursing-

instructor/#:~:text=What%20is%20a%20Nurse%20Instructor,Science%20in%20Nursing

%20(BSN)

Ganapathy, M. (2016). Qualitative data analysis: Making it easy for nurse researcher.

International Journal of Nursing Education, 8(2), 106–110. https://doi.org/10.5958/0974-

9357.2016.00057.X

Geerts, J., Udod, S., Bishop, S., Hillier, S., Lyons, O., Madore, S., Mutwiri, B., Sinclair, D., &

Frich, J. (2024). Gold standard research and evidence applied: The Inspire Nursing

Leadership Program. *Healthcare Management Forum, 37*, 141–150.

https://doi.org/10.1177/08404704241236908

Godin, K., Stapleton, J., Kirkpatrick, S. I., Hanning, R. M., & Leatherdale, S. T. (2015).

Applying systematic review search methods to the grey literature: A case study

examining guidelines for school-based breakfast programs in Canada. *Systematic*

Reviews, 4(1), 138. https://doi.org/10.1186/s13643-015-0125-0

Graziano, A. & Raulin, M. (2019). *Research Methods: A Process of Inquiry* (Ninth Edition).

Pearson. https://graziano-raulin.com/supplements/opdefsex.htm

Grossman, S. C., & Valiga, T. M. (2021). *The New Leadership Challenge* (6th ed.). F. A. Davis

Company. https://bookshelf.vitalsource.com/books/9781719645126

Ha, L., & Pepin, J. (2018). Clinical nursing leadership educational intervention for first-year

nursing students: A qualitative evaluation. *Nurse Education in Practice, 32*, 37-43.

https://doi.org/10.1016/j.nepr.2018.07.005

Hayden, A. & Premji, Z. (2022, October). *Search development worksheet* [Table]. University of

Calgary & University of Victoria.

Hayden, A. & Premji, Z. (n.d.). *Study selection: Piloting the inclusion/exclusion criteria* [Excel

file]. University of Calgary & University of Victoria.

Heinen, M., van Oostveen, C., Peters, J., Vermeulen, H., & Huis, A. (2019). An integrative

review of leadership competencies and attributes in advanced nursing practice. J*ournal of

Advanced Nursing, 75*(11), 2378–2392. https://doi.org/10.1111/jan.14092

Hsieh, L.-W., Chang, Y.-C., & Yen, M. (2022). Improving Leadership Competence Among

Undergraduate Nursing Students: Innovative Objectives Development, Implementation,

and Evaluation. *Nursing Education Perspectives, 43*(1), 24–29.

https://doi.org/10.1097/01.NEP.0000000000000866

Hughes, R., Meadows, M. T., & Begley, R. (2022). AONL Nurse Leader Competencies: Core

Competencies for Nurse Leadership. *Nurse Leader*, *20*(5), 437–443.

https://doi.org/10.1016/j.mnl.2022.08.005

Jankelová, N., & Joniaková, Z. (2021). Communication Skills and Transformational Leadership

Style of First-Line Nurse Managers in Relation to Job Satisfaction of Nurses and

Moderators of This Relationship. *Healthcare, 9*(3), 346.

https://doi.org/10.3390/healthcare9030346

JBI. (n.d.). *About JBI*. https://jbi.global/about-jbi

Johnson, J. A. (2014). Senior nursing students inspire leadership: Narrowing the student nurse

preparation practice gap. *Journal for Nurses in Professional Development, 30*(2), 103–

104. https://doi.org/10.1097/NND.0000000000000044

Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A Review of the Quality Indicators of Rigor in

Qualitative Research. *American journal of pharmaceutical education*, *84*(1), 7120.

https://doi.org/10.5688/ajpe7120

Kane, I., Cook, J., & Lee, H. (2015). Mentoring RNs pursuing BSN degrees: A leadership

journey. *Nursing (Jenkintown, Pa.), 45*(7), 18–21.

https://doi.org/10.1097/01.NURSE.0000466459.70493.d8

Karaman, F., KavgaoǦlu, D., YILDIRIM, G., RASHIDI, M., ÜNSAL JAFAROV, G.,

ZAHOOR, H., & KISKAÇ, N. (2023). Development of the educational leadership scale

for nursing students: A methodological study. *BMC Nursing, 22*(1), 1–10.

https://doi.org/10.1186/s12912-023-01254-4

Khalil, H., Peters, M. D., Tricco, A. C., Pollock, D., Alexander, L., McInerney, P., Godfrey, C.

M., & Munn, Z. (2021). Conducting high quality scoping reviews-challenges and

solutions. *Journal of Clinical Epidemiology, 130*, 156–160.

https://doi.org/10.1016/j.jclinepi.2020.10.009

Kilty, H. L. (2005). *Nursing leadership development in Canada. A descriptive status report and

analysis of leadership programs, approaches and strategies: domains and competencies;

knowledge and skills; gaps and opportunities.* Canadian Nurses Association. https://hl-

prod-ca-oc-download.s3-ca-central-1.amazonaws.com/CNA/2f975e7e-4a40-45ca-863c-

5ebf0a138d5e/UploadedImages/documents/Nursing_Leadership_position_statement.pdf

Lavoie-Tremblay, M., Drouin, S., Armistead, C., Chevrier, A., Frunchak, V., Clausen, C.,

Purden, M., Murray, L. (2017, August 4). *Supporting Leadership Competencies in

Nursing.* The McGill Nursing Collaborative for Education and Innovation in Patient- and

Family-Centered Care.

https://www.mcgill.ca/nursing/files/nursing/leadership_competencies_aug4_2017.pdf

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science: IS, 5*(1), 69–69. https://doi.org/10.1186/1748-5908-5-69

Mak, S., & Thomas, A. (2022). An Introduction to Scoping Reviews. *Journal of Graduate Medical Education, 14*(5), 561–564. https://doi.org/10.4300/JGME-D-22-00620.1

Marcellus, L., Duncan, S., MacKinnon, K., Jantzen, D., Siemens, J., Brennan, J., & Kassam, S. (2018). The Role of Education in Developing Leadership in Nurses. *Nursing Leadership (1910-622X), 31*(4), 26–35. https://doi.org/10.12927/cjnl.2019.25758 https://www.mcgill.ca/nursing/files/nursing/leadership_competencies_aug4_2017.pdf

McPherson, C., & MacDonald, C. (2017). Blending simulation-based learning and interpretative pedagogy for undergraduate leadership competency development. *Journal of Nursing Education*, *56*(1), 49–54. https://doi.org/10.3928/01484834-20161219-10

McQuiston, L. S., & Hanna, K. (2015). Peer coaching: An overlooked resource. *Nurse Educator, 40*(2), 105–108. https://doi.org/10.1097/NNE.0000000000000103

Mellor, L. (2021, July 12). *How to quickly complete full text screening in a systematic review*. Covidence. https://www.covidence.org/blog/how-to-quickly-complete-full-text-screening-in-a-systematic-review/

Melnyk, & Davidson, S. (2009). Creating a culture of innovation in nursing education through shared vision, leadership, interdisciplinary partnerships, and positive deviance. *Nursing Administration Quarterly*, *33*(4), 288–295. https://doi.org/10.1097/NAQ.0b013e3181b9dcf8

Miles, J. M., & Scott, E. S. (2019). A New Leadership Development Model for Nursing Education. *Journal of Professional Nursing, 35*(1), 5–11.

https://doi.org/10.1016/j.profnurs.2018.09.009

Mirbagher Ajorpaz, N., Zagheri Tafreshi, M., Mohtashami, J., Zayeri, F., & Rahemi, Z. (2016). The effect of mentoring on clinical perioperative competence in operating room nursing students. *Journal of Clinical Nursing (John Wiley & Sons, Inc.), 25*(9–10), 1319–1325. https://doi.org/10.1111/jocn.13205

Moghabghab, R., Tong, A., Hallaran, A., & Anderson, J. (2018). The Difference Between Competency and Competence: A Regulatory Perspective. *Journal of Nursing Regulation*, *9*(2), 54–59. https://doi.org/10.1016/S2155-8256(18)30118-2

Munn, Z., Pollock, D., Khalil, H. P. S. A., Alexander, L., Mclnerney, P., Godfrey, C., Peters, M. D. J., & Tricco, A. C. (2022). What are scoping reviews? Providing a formal definition of scoping reviews as a type of evidence synthesis. *JBI Evidence Synthesis*, *20*(4), 950–952. https://doi.org/10.11124/jbies-21-00483

Munn, Z., Peters, M. D. J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology*, *18*(1), 143–143. https://doi.org/10.1186/s12874-018-0611-x

Mrayyan, M. T., Algunmeeyn, A., Abunab, H. Y., Kutah, O. A., Alfayoumi, I., & Khait, A. A. (2023). Attributes, skills and actions of clinical leadership in nursing as reported by hospital nurses: A cross-sectional study. *BMJ Leader, 7*(3), 203–211. https://doi.org/10.1136/leader-2022-000672

Notarnicola, I., Stievano, A., De Jesus Barbarosa, M. R., Gambalunga, F., Iacorossi, L., Petrucci, C., Pulimeno, A., Rocco, G., & Lancia, L. (2018). Nurse Competence Scale: Psychometric assessment in the Italian context. *Annali Di Igiene: Medicina Preventiva e*

Di Comunita, 30(6), 458–469. https://doi.org/10.7416/ai.2018.2257

Nowell, L. S. (2016). Delegate, Collaborate, or Consult? A Capstone Simulation for Senior

Nursing Students. Nursing Education Perspectives, 37(1), 54–55.

https://doi.org/10.5480/13-1174

Nowell, L., Davidson, S., Gospodinov, J., Laing, C., Shajani, Z., Dewell, S., Conroy, T., &

Button, D. (2023). Evaluating fundamental care knowledge to inform educational

leadership. *Journal of Advanced Nursing*, *79*(3), 1174–1188.

https://doi.org/10.1111/jan.15279

Nunn-Ellison, K., Tillson, M., Ard, N., & Farmer, S. (2023). Assessment and evaluation:

Nursing education and ACEN accreditation. *Teaching & Learning in Nursing*, *18*(4),

457–462. https://doi.org/10.1016/j.teln.2023.06.009

Orange, A. (2016). Encouraging Reflective Practices in Doctoral Students through Research

Journals. *The Qualitative Report, 21,* 2176–2190. https://doi.org/10.46743/2160-

3715/2016.2450

Oxford learner's dictionaries. (n.d.). *Education.* Oxford University Press.

https://www.oxfordlearnersdictionaries.com/definition/american_english/education

Öztürk, H., & Kahriman, İ. (2013). The Opinions of Nurse Students Regarding Leadership in

Nursing. *Procedia - Social and Behavioral Sciences*, *93*, 111–115.

https://doi.org/10.1016/j.sbspro.2013.09.161

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D.,

Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J.,

Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E.,

McDonald, S., … Moher, D. (2021). The PRISMA 2020 statement: an updated guideline

for reporting systematic reviews. *BMJ (Online)*, *372*, n71–n71.

https://doi.org/10.1136/bmj.n71

Pedersen, C. (2015*). Understanding new graduate registered nurse's preparedness and readiness for leadership* (Thesis*).* University of British Columbia.

https://open.library.ubc.ca/collections/ubctheses/24/items/1.0395023

Peters, M. D. J., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *International Journal of Evidence-Based Healthcare*, *13*(3), 141–146.

Peters, M. D. J., Godfrey, C., McInerney, P., Munn, Z., Tricco, A. C., & Khalil, H. (2020a). Scoping Reviews. In E. Aromataris, C. Lockwood, K. Porritt, B. Pilla, & Z. Jordan (Eds.), *JBI manual for evidence synthesis.* JBI; 2024. Available from https://synthesismanual.jbi.global https://doi.org/10.46658/JBIMES-24-09

Peters, M. D. J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Alexander, L., McInerney, P., Godfrey, C. M., & Khalil, H. (2020b). Updated methodological guidance for the conduct of scoping reviews. *JBI Evidence Synthesis*, *18*(10), 2119–2126.

https://doi.org/10.11124/JBIES-20-00167

Peters, M. D. J., Marnie, C., Colquhoun, H., Garritty, C. M., Hempel, S., Horsley, T., Langlois, E. V., Lillie, E., O'Brien, K. K., Tunçalp, Özge, Wilson, M. G., Zarin, W., & Tricco, A. C. (2021). Scoping reviews: reinforcing and advancing the methodology and application. *Systematic Reviews*, *10*(1), 263–263. https://doi.org/10.1186/s13643-021-01821-3

Poblete, M., & Villa, A. (2007). Aprendizaje basado en competencias. In: *Una propuesta para la evaluación de competencias genéricas* [Competency-based Learning: A Proposal for the

Evaluation of Generic Competences]. Mensajero. Bilbao, Editorial.

Pollock, D., Peters, M. D. J., Khalil, H., McInerney, P., Alexander, L., Tricco, A. C., Evans, C.,
De Moraes, É. B., Godfrey, C. M., Pieper, D., Saran, A., Stern, C., & Munn, Z. (2023).
Recommendations for the extraction, analysis, and presentation of results in scoping
reviews. *JBI Evidence Synthesis*, *21*(3), 520–532. https://doi.org/10.11124/JBIES-22-
00123

Pollock, D., Alexander, L., Munn, Z., Peters, M. D. J., Khalil, H., Godfrey, C. M., McInerney,
P., Synnot, A., & Tricco, A. C. (2022). Moving from consultation to co-creation with
knowledge users in scoping reviews: guidance from the JBI Scoping Review
Methodology Group. *JBI Evidence Synthesis*, *20*(4), 969–979.
https://doi.org/10.11124/JBIES-21-00416

PRISMA. (n.d.-a). *PRISMA flow diagram*. https://www.prisma-statement.org/prisma-2020-flow-
diagram

PRISMA (n.d.-b). *Scoping reviews (PRISMA –SCR)*. https://www.prisma-statement.org/scoping

Purdy, M. (1997). The problem of self-assessment in nurse education. *Nurse Education Today*,
17(2), 135–139. https://doi.org/10.1016/S0260-6917(97)80031-7

Quinn, B. (2020). Using Benner's model of clinical competency to promote nursing leadership.
Nursing Management (Harrow, London, England), 27(2), 33–41.
https://doi.org/10.7748/nm.2020.e1911

Raso, R. (Ed.). (2023, February). "Soft" is hard: Relational leadership. *Nursing Management*,
54(2), 4. https://doi.org/10.1097/01.NUMA.0000918176.63284.86

Ray, M., Turkel, M., & Marino, F. (2002). The transformation process for nursing in workforce
redevelopment. *Nursing Administration Quarterly,26*(2), 1-14.

http://dx.doi.org/10.1097/00006216-200201000-00003

Read, C. Y., Betancourt, D. M. P., & Morrison, C. (2016). Social Change: A Framework for

Inclusive Leadership Development in Nursing Education. *The Journal of Nursing*

Education, *55*(3), 164–167. https://doi.org/10.3928/01484834-20160216-08

Registered Nurses' Association of Ontario (RNAO). (2013). *Developing and sustaining nursing*

leadership best practice guideline (2nd ed.). Toronto, ON.

https://rnao.ca/bpg/guidelines/developing-and-sustaining-nursing-leadership

Registered Nurses' Association of Ontario. (n.d). *Who we are*. https://rnao.ca/about

Ross, C., Olson, J. K., Eastlick Kushner, K., Murad, S. S., Leung, W. S. W., Daniels, S., Applin,

M., & Eaton, T. (2018). Student Preparation for Nursing Leadership: Lessons from an

Undergraduate Programs Review. *International Journal of Nursing Education*

Scholarship, *15*(1), 1–11. https://doi.org/10.1515/ijnes-2017-0039

Royal College of Nursing (RCN). (2023). *RCN new definition of nursing: Background research*

and rationale. https://www.rcn.org.uk/Professional-Development/publications/rcn-new-

definition-of-nursing-research-and-rationale-uk-pub-011-253#detailTab

Scammell, J. M. E., Apostolo, J. L. A., Bianchi, M., Costa, R. D. P., Jack, K., Luiking, M., &

Nilsson, S. (2020). Learning to lead: A scoping review of undergraduate nurse education.

Journal of Nursing Management, 28(3), 756–765. https://doi.org/10.1111/jonm.12951

Scott, E. S. & Miles, J. (2013). Advancing leadership capacity in nursing. *Nursing*

Administration Quarterly, 37(1), 77–82.

https://doi.org/10.1097/NAQ.0b013e3182751998

Scully, N. J. (2015). Leadership in nursing: The importance of recognising inherent values and

attributes to secure a positive future for the profession. *Collegian, 22*(4), 439–444.

https://doi.org/10.1016/j.colegn.2014.09.004

Simon Fraser University Library. (n.d.). *Grey literature: What it is & how to find it.*

https://www.lib.sfu.ca/help/research-assistance/format-type/grey-literature

Stacciarini, J.-M. R., & McDaniel, A. M. (2019). EMBRACE: Developing an inclusive

leadership program with and for undergraduate nursing students. *Journal of Professional*

Nursing, *35*(1), 26–31. https://doi.org/10.1016/j.profnurs.2018.09.001

State of Rhode Island, Department of Education. (n.d.). *Curriculum definition*.

https://ride.ri.gov/instruction-assessment/curriculum/curriculum-definition

Statista. (2022). *Number of registered nurses employed in Canada in 2022, by province.*

https://www.statista.com/statistics/496935/total-registered-nursing-canadian-workforce-

by-province/#statisticContainer

Steffan, J. (2023). *Assignment 2: Research Report (coding, analyzing/theming, and write-up*

[Unpublished manuscript]. Faculty of Health Disciplines, Athabasca University.

Stoll, C. R. T., Izadi, S., Fowler, S., Green, P., Suls, J., & Colditz, G. A. (2019). The value of a

second reviewer for study selection in systematic reviews. *Research synthesis*

methods, *10*(4), 539–545. https://doi.org/10.1002/jrsm.1369

Suliman, M., Aljezawi, M., Tawalbeh, L., Ta'an, W., Abdalrhim, A., AlBashtawy, M., &

Alkhawaldeh, A. (2023). Assessing Professional Competencies Among Undergraduate

Nurses: An Exploratory Study. *Nursing Education Perspectives, 44*(3), E10–E14.

https://doi.org/10.1097/01.NEP.0000000000001074

Swensen, S., & Robel, S. M. (2018). Leadership Survey: Nurses as Leaders: Broad Acceptance,

Room to Grow. *NEJM Catalyst*, *4*(6).

Taylor, I., Bing-Jonsson, P., Wangensteen, S., Finnbakk, E., Sandvik, L., McCormack, B., &

Fagerström, L. (2020). The self-assessment of clinical competence and the need for further training: A cross-sectional survey of advanced practice nursing students. *Journal of Clinical Nursing*, *29*(3–4), 545–555. https://doi.org/10.1111/jocn.15095

Thomas, A., Lubarsky, S., Varpio, L., Durning, S. J., & Young, M. E. (2020). Scoping reviews in health professions education: challenges, considerations and lessons learned about epistemology and methodology. *Advances in Health Sciences Education: Theory and Practice, 25*(4), 989–1002. https://doi.org/10.1007/s10459-019-09932-2

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L. A., Hartling, L., Aldcroft, A., Wilson, M. T., Garritty, C., . . . Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of Internal Medicine, 169*(7), 467–473.https://doi.org/10.7326/m18-0850

Unsworth, J., Melling, A., & Porteous, D. (2021). Development and Evaluation of the Validity and Reliability of the Leading and Managing Care Pre-Registration Nursing Student Assessment Tool. *SAGE Open Nursing, 7*. https://doi.org/10.1177/23779608211000259

University of Calgary, Taylor Institute for Teaching and Learning. (n.d.-a). *Developing teamwork competency through interprofessional education.* https://taylorinstitute.ucalgary.ca/teaching-scholars/recipients/developing-teamwork-competency

University of Calgary, Research Guides. (n.d.-a). *Systematic Reviews in the Health Sciences*. https://libguides.ucalgary.ca/c.php?g=255369&p=5074663

University of Calgary, Faculty of Nursing. (n.d.-b). *Advancing nursing education through*

simulation. https://nursing.ucalgary.ca/teaching-and-learning/simulation-learning

University of South Australia. (n.d.). *How to screen.*

https://guides.library.unisa.edu.au/ScopingReviews/HowToScreen

University of Toronto, Scarborough Library. (n.d.). *Research guides: Zotero: What is Zotero?*

https://guides.library.utoronto.ca/zotero/welcome

University of Victoria Libraries. (n.d.). *LibGuides: Covidence: Overview of Covidence.*

https://libguides.uvic.ca/c.php?g=717748&p=5123584

Weston, M. J., Falter, B., Lamb, G. S., Mahon, G., Malloch, K., Provan, K. G., Roe, S., &
Werbylo, L. (2008). Health care leadership academy: A statewide collaboration to
enhance nursing leadership competencies. *The Journal of Continuing Education in
Nursing, 39*(10), 468–472. https://doi.org/10.3928/00220124-20081001-09

Westphaln, K. K., Regoeczi, W., Masotya, M., Vazquez-Westphaln, B., Lounsbury, K.,
McDavid, L., Lee, H., Johnson, J., & Ronis, S. D. (2021). From Arksey and O'Malley
and beyond: Customizations to enhance a team-based, mixed approach to scoping review
methodology. *MethodsX*, *8*, 101375–101375. https://doi.org/10.1016/j.mex.2021.101375

Wilson, S. (2001). What is indigenous research methodology? *Canadian Journal of Native
Education, 25*(2), 175-179.

World Health Organisation (WHO). (2020). *State of the world's nursing 2020: investing in
education, jobs and leadership.*

https://iris.who.int/bitstream/handle/10665/331677/9789240003279-eng.pdf?sequence=1

Appendix A: Definitions and Priori Protocol

Table 1.1

Definitions of Terms

Competency	"A component of knowledge, skill, and/or judgment demonstrated by an individual, for safe, ethical, and effective nursing practice" (Moghabghab et al., 2018, p. 56).
Curriculum	A standardized sequence of planned objectives where students practice and achieve competence in content and skills. It provides a framework for educators as to what teaching and learning are required to meet the course's or program's objectives (State of Rhode Island, n.d.).
Education	The training, learning, and teaching processes that occur in schools, universities, or colleges to develop skills and knowledge (Oxford Learner's Dictionaries, n.d.).
Evaluation	The process of judging performance based on a specified set of criteria, which results in the product of assessment that could be either formative or summative (Nunn-Ellison et al., 2023).
Leadership	"The relational process in which an individual seeks to influence others towards a mutually desirable goal" (Registered Nurses Association of Ontario [RNAO], 2013, p. 130).
Leadership Competency	"The knowledge, skills, and abilities contributing to effective leadership. Competencies are used as a framework to facilitate the growth of the nurse leader and to assess progression and mastery" (Hughes et al., 2022, p. 437).
Leadership Development	A series of stages of growth in leadership capacities, skills and insights gained through knowledge and experience (Grossman & Valiga, 2021).
Nursing	"A safety critical profession founded on four pillars: clinical practice, education, research, and leadership" (Royal College of Nursing, 2023, p. 6).
Nursing Leadership	A domain and role in all areas of nursing practice that demonstrate advocacy, critical thinking, and action (Canadian Nursing Association [CNA], 2009).
Process/es	The sequence of actions that are undertaken to achieve a desired outcome (Collins, n.d.).

Note. Definitions used in the thesis are provided to give a more detailed description of the

concepts.

Table 3.1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	Click here to enter text.
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	Click here to enter text.
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	Click here to enter text.
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	Click here to enter text.
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	Click here to enter text.
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	Click here to enter text.
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	Click here to enter text.
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	Click here to enter text.
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	Click here to enter text.
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	Click here to enter text.
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Click here to enter text.
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	Click here to enter text.
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	Click here to enter text.
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	Click here to enter text.
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	Click here to enter text.

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	Click here to enter text.
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Click here to enter text.
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	Click here to enter text.
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	Click here to enter text.
Limitations	20	Discuss the limitations of the scoping review process.	Click here to enter text.
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	Click here to enter text.
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	Click here to enter text.

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).
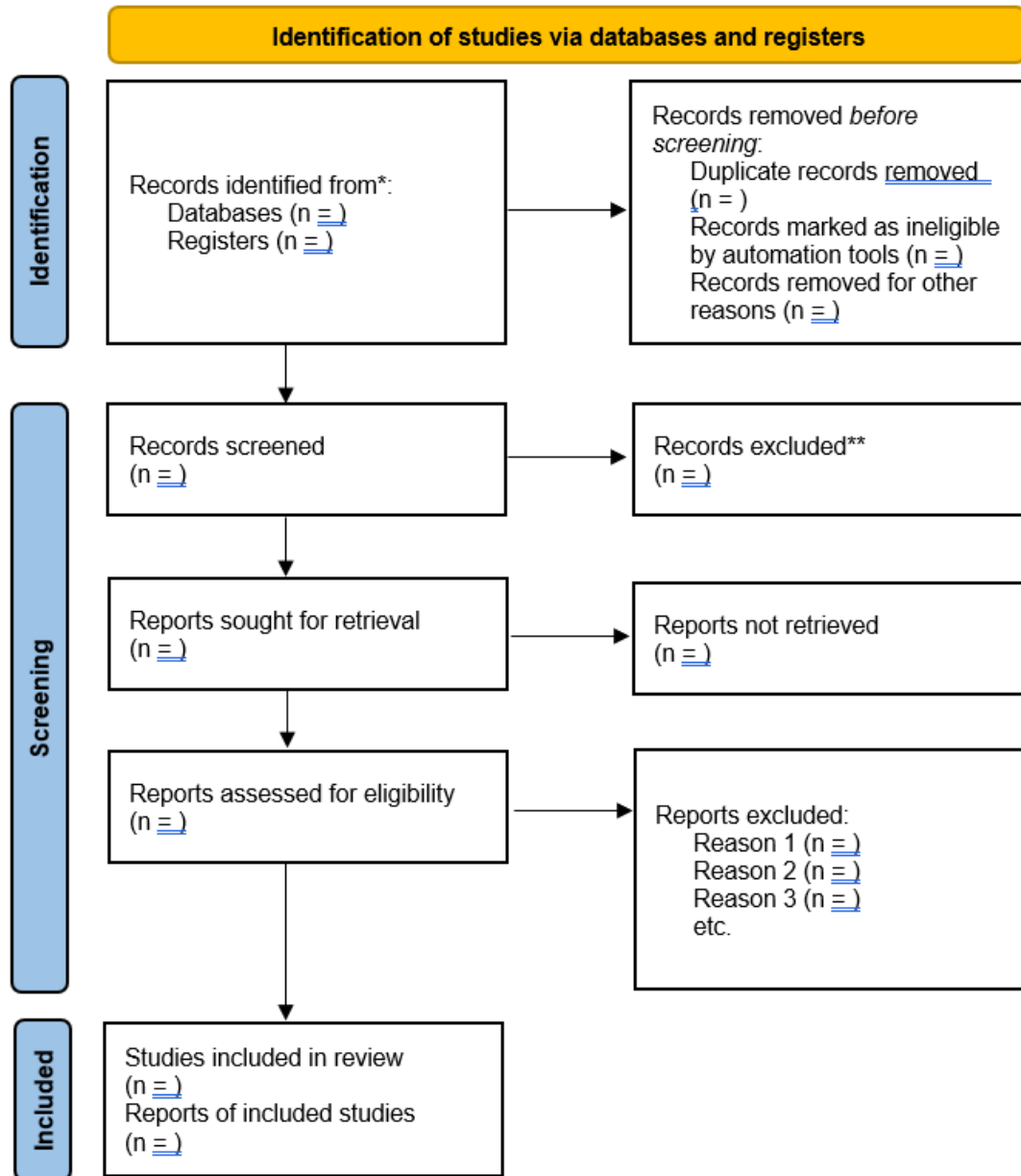*From:* Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

Note. From PRISMA (n.d.-b). S*coping reviews (PRISMA –SCR).* https://www.prisma-

statement.org/scoping

Diagram 3.1

PRISMA Flow Diagram Template

*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Source: Page MJ, et al. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

Note: From PRISMA (n.d.-a). *PRISMA flow diagram.* https://www.prisma-statement.org/prisma-2020-flow-diagram

Table 3.4

Data Extraction Tool Template

Author/Year/Title		
Country/Origin		
Aim/Purpose		
Study Design/Methodology		
Leadership Definition		
Population		
Evaluative Process		
Leadership Competencies		
Context		
Intervention		
Results of Evaluative Process		
Recommendations		
Comments		

Note: This template was adapted from *Appendix 10.1 JBI template source of evidence details,*

characteristics and results extraction instrument from the *JBI Manual for Evidence Synthesis* by

Peters et al. (2020a).

Table 3.5

Presentation of Sources

Parameter	Results		
Number of publications	• Total number of sources of evidence		
	• Total numbers between 2014 to 2024		
Country of origin	•		
Source Type	• Systematic Review		
	• Quasi-experimental studies		
	• Pretest - post-test studies		
	• Randomized control trial studies		
	• Cross-sectional studies		
	• Other		
Population(s) • Undergraduate nursing students	• 1st year nursing students		
	• 2nd year nursing students		
	• 3rd year nursing students		
	• 4th year nursing students		
	• Year not identified		
	• Other		
Concept	• Evaluative Process		
	• Leadership Competency		
Context	• Type of clinical setting		
	• Other		
Format	• Journal		
	• Peer-reviewed		
	• Other		

Note: Adapted from *Table 11.3: Example tabular presentation of data for a scoping review* in *JBI Manual for Evidence Synthesis* by

Peters et al. (2020a).

Appendix B: Search Strategies

Table 3.2

Search Development Worksheet

Databases to Search:

EBSCO interface Databases	OVID interface Databases	ProQuest interface Databases	Other
CINAHL	NA	ProQuest Dissertations and Theses Global (AU)	Google Advanced Search
MEDLINE			
APA PsycINFO			
Academic Search Complete			

Database login/passwords for this review

Database Interface	Login	Password
EBSCO	jsteffan1@learn.athabascau.ca	Winter.2024
ProQuest	jsteffan1@learn.athabascau.ca	Winter.2023

Research Question:

What evaluative processes are used to determine the leadership competency of undergraduate nursing students in clinical practice?

Inclusion / Exclusion Criteria: See below

Consider the following as well as those relevant to your specific research question.

- o **Date range: January 2014 to January 2024**
- o **Study design: Scoping Review**
- o **Peer review: No**
- o **Language: English**
- o **Publication type: NA**
- o **Country/setting location: Clinical Nursing, Undergraduate or Baccalaureate Nursing, Nursing Education/no geography limiter**

Inclusion Criteria	Exclusion Criteria
Nursing Students • Nursing Students • Undergraduate or baccalaureate nursing students in a registered nurse program. • Bachelor of Science in Nursing students. • Undergraduate degree students • Preregistration nursing students; nursing trainee, rookie nurse. • Specific student age and gender is not relevant. • Degree-holder programs, post-licensed practical nurse bachelor programs, and post-registered nurse bachelor programs. • and psychiatric nursing students in registered/ undergraduate program.	• Non-registered, non-undergraduate nursing students. • Practical nurses and nursing assistants. • Nurse practitioner students • Non-nursing students. • Post-degree nursing students in midwifery, psychiatric, graduate, and other specialist or certificate programs. • Masters, doctorate, and Ph.D. nursing students. • New nurse graduates.
Concept: **Leadership**- social influence to help others achieve health-related goals or improve the health care system (CASN, 2022, p.7). • Knowledge, experience, skill, behaviour, and other observable actions that demonstrate leadership. • Advocacy • Decision-making in relation to leadership. • thinking critically, reasoning, and using effective clinical judgment • peer coaching/mentorship • Educational leadership • Leadership behavior • Clinical nursing leadership • Clinical leadership • Student leadership practices • Self-reflective and reflective practice • Innovative • Promote quality improvement. • Self-assessment	• Teaching strategies not focused on evaluation or leadership processes. • Evaluation of competency in leadership theory nursing courses. • Evaluation for other skills in nursing that are non-leadership. • Any other skills or competencies in nursing practice or clinical practice that do not directly relate to leadership.

- Role modeling
- Clinical reasoning
- Clinical judgement

Evaluation - The process of judging performance based on a specified set of criteria and results in the product of assessment that could be either formative or summative (Nunn-Ellison et al., 2023).

- Formative and summative, outcomes, goals, objectives.
- Educational strategies.
- Processes, pedagogical approaches and methods, tools, rubrics, forms, checklists.
- Self-evaluative tools, reflective journals or teaching methods to increase self-awareness, self-learning approaches.

Competency - The observed integration of the knowledge, judgment, abilities, and skills demonstrated by an individual required to practice safely, ethically, and effectively (College of Nurses of Ontario, 2019).

Context: Undergraduate Nursing Education, Clinical placement/ practicum

- Baccalaureate; Nursing School, Nursing Institution, and nursing program.
- Clinical experience, clinical practice, clinical placement, clinical setting, clinical nursing, and nursing training.
- Acute care clinical settings, healthcare settings, hospitals, community placements, healthcare organizations, long-term care, public health, nursing labs, laboratory experiences, simulated teaching environments, healthcare agencies, businesses, occupational health.

- Practical nurses, nursing assistants, and nurse practitioner programs.
- Leadership theory nursing courses and classes.
- Non-nursing programs or courses.
- Non-clinical practice, except simulation and nursing labs.
- Continuing professional development courses, after-degree certificates or programs on nursing leadership.
- Masters, doctoral and Ph.D. nursing programs.
- Non-nursing leadership development education.

Mining/Harvesting from Seed Papers

Seed paper mining for <u>CINAHL (EBSCO)</u> database

Seed article title	Concept 1: Nursing Students		Concept 2: Leadership		Concept 3: Evaluation	
	CINAHL Subject headings	Textwords/ keywords	CINAHL Subject headings	Textwords/ keywords	CINHAL Subject headings	Textwords/ keywords
Article 1 Ha & Pepin (2018)	• Education, nursing • Students, nursing	• 1st year nursing students • First year nursing students • Nurses, students	• Leadership	• Clinical nursing leadership • Leadership • Clinical leadership	• Competency Assessment • Program Evaluation	• Qualitative Evaluation • Co-constructed • Educational • Intervention • Evaluation
Article 2 Foli et al. (2014)	Education, nursing, baccalaureate	• Undergraduate Nursing Students • Nursing Students • Baccalaureate students	• Leadership	• Leadership behaviors • Student leadership practices	• Service Learning	• Approach • Leadership • Practices Inventory-Self • Leadership Practices Inventory-Observer • Rated Peers • Measures of analysis • Pre- and post-tests • Instruments
Article 3 Karaman et al. (2023)	NONE	• Nursing Students • Students	• NONE	• Educational leadership • Educational Leadership Scale	• NONE	• Scale Education • Leadership Scale • Tool • Analysis • Model • Measure

Seed paper mining for <u>MEDLINE (EBSCO)</u> database

Seed article title	Concept 1: Nursing Students		Concept 2: Leadership		Concept 3: Evaluation	
	MEDLINE Subject headings	Textwords/ keywords	MEDLINE Subject headings	Textwords/ keywords	MEDLINE Subject headings	Textwords/ keywords
Article 1 McQuiston, L. S., & Hanna, K. (2015). Peer Coaching: An Overlooked Resource. *Nurse Educator*, *40*(2), 105–108. https://doi.org/10.1097/NNE.0000000000000103	Students, nursing/ psychology Peer group	junior medical/ surgical nursing Students	Judgement Thinking Clinical competence Diffusion of Innovation	Senior leadership Thinking critically, reasoning, and using effective clinical judgment peer coaching	Education, Nursing/methods Methods Nursing Evaluation Research	Innovative Pedagogical approach Collaboration Lasater's Clinical Judgment Rubric Program's effectiveness

Step 2: Collating the information above into a search concept table to create search strings

Search Concept Table 1: EBSCO/ProQuest

	Textwords (mined from seed/known articles) + additional terms found	Textwords (with truncation, phrase searching and Boolean/Proximity operators) for ESBCO	Textwords (with truncation, phrase searching and Boolean/Proximity operators) for ProQuest

Concept 1: Nursing Students	• Junior medical/surgical nursing students • Students • 1st year nursing students • First-year nursing students • Nurses, students • Undergraduate Nursing Students • Nursing Students • Baccalaureate students	TI (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*) OR AB (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*) OR (MH "Students, Pre-Nursing") OR (MH "Students, Undergraduate") OR (MH "Students, Post-RN") OR (MH "Students, Nursing, Baccalaureate") OR (MH "College Health Nursing") OR (MH "School Nursing")) OR ((MH "Students, Nursing") OR (MH "Education, Nursing, Diploma Programs") OR (MH "Education, Nursing, Baccalaureate"))	diskw.Exact("Freshman nursing students" OR "Novice nursing students" OR "Nursing students education" OR "Nursing students'" OR "College nursing students" OR "BSN nursing students" OR "Baccalaureate Nursing students" OR "Clinical nursing students" OR "Entry-level nursing students" OR "Accelerated baccalaureate nursing students" OR "Bsn nursing students" OR "Junior nursing students" OR "First semester nursing students" OR "Beginning level nursing students" OR "Community college nursing students" OR "First-year nursing students" OR "Nursing education and students" OR "Bachelor of science in nursing students" OR "Bachelors Degree Nursing Students" OR "Accelerated nursing students" OR "Bachelor's of nursing students" OR "Undergraduate nurses" OR "Undergraduate student nurses" OR "Pre-Nursing Students" OR "Pre-nursing students" OR "Baccalaureate pre-nursing") OR title(Nurs* NEAR/3 student* OR Nurs* NEAR/3 Junior* OR Nurs* NEAR/3 Undergrad* OR Nurs* NEAR/3 Preregistra* OR Nurs* NEAR/3 Pre-registra*) OR abstract(Nurs* NEAR/3 student* OR Nurs* NEAR/3 Junior* OR Nurs* NEAR/3 Undergrad* OR Nurs* NEAR/3 Preregistra* OR Nurs* NEAR/3 Pre-registra*)
Concept 2: Leadership	• Senior leadership • Thinking critically, reasoning, and using effective clinical judgment • Peer coaching • Clinical nursing leadership • Leadership • Clinical leadership	TI (leadership* N3 (educat* or student* or behavio*r or clinical)) OR AB (leadership* N3 (educat* or student* or behavio*r or clinical)) OR (MH Leadership)	diskw.Exact("Nursing academic leadership" OR "Future of nursing leadership" OR "Nursing leadership" OR "Nursing leadership education" OR "Clinical nursing leadership" OR "Nursing leadership styles" OR "Nursing education leadership" OR "Leadership competence" OR "Nursing program leadership" OR "Influence of nursing leadership" OR "Nursing leadership standards" OR "Nursing leadership development" OR "Effects of transformational leadership in nursing" OR "Mentoring and leadership") OR title(leadership N/3 nurs* OR leadership N/3 "nursing education" OR leadership N/3 Educat* OR leadership NEAR/3 reason* OR leadership NEAR/3 think* OR Leadership NEAR/3 peer* OR leadership NEAR/3 judg* OR leadership NEAR/3 Mentor* OR leadership NEAR/3 Compet* OR Leadership N/3 innovat*) OR

	• Leadership behaviors • Student leadership practices • Educational leadership • Educational Leadership Scale		abstract(leadership N/3 nurs* OR leadership N/3 "nursing education" OR leadership N/3 Educat* OR leadership NEAR/3 reason* OR leadership NEAR/3 think* OR Leadership NEAR/3 peer* OR leadership NEAR/3 judg* OR leadership NEAR/3 Mentor* OR leadership NEAR/3 Compet* OR Leadership N/3 innovat*)
Concept 3: Evaluation	• Innovative pedagogical approach • Collaboration • Lasater's Clinical Judgment Rubric • Program's effectiveness • qualitative evaluation • Co-constructed educational intervention • Intervention • Leadership Practices Inventory-Self • Leadership Practices Inventory-Observer • Rated Peers	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR (MH "Program Evaluation") OR (MH "Behavioral Objectives") OR (MH "Evaluation") OR (MH "Course Evaluation") OR (MH "Competency Assessment") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Formative Evaluation Research") OR (MH "Summative Evaluation Research") OR (MH "Academic Performance") OR (MH "Educational Measurement") OR (MH "Self Assessment") OR (MH "Nursing Outcomes") OR (MH	diskw.Exact("Analysis and Evaluation" OR "Academic evaluation" OR "Analysis and evaluation system" OR "evaluation" OR "analysis evaluation" OR "Academic Competence Evaluation Scales" OR "Affective evaluation" OR "Analysis Design Development Implementation Evaluation" OR "achievement evaluation" OR "Analytical evaluation" OR "Competence assessment" OR "clinical competence assessment" OR "Competence" OR "clinical competence" OR "Academic competence" OR "Assigning competence" OR "Competence and knowledge" OR "Clinical competence evaluation" OR "Behavioral competence" OR "Assessing competence" OR "Assessment competence" OR "Competence and incompetence" OR "Academic assessment" OR "Academic achievement and assessment" OR "Achievement assessment" OR "Access skill assessment" OR "evaluation criteria" OR "Student assessment performance" OR "Criteria evaluation" OR "Student assessment practices" OR "Student learning outcome assessment" OR "Outcome indicators" OR "Educational outcomes" OR "student assessment" OR "Positive educational outcomes" OR "Faculty involvement in student learning outcomes assessment" OR "Assessment of Student Functioning" OR "Student assessments" OR "Current outcome performance indicators" OR "Evaluation criteria and standards" OR

	• Measures of analysis • Pre- and post-tests • Instruments • Scale • Education Leadership Scale • Tool • Analysis • Model • Measure	"Clinical Competence") OR (MH "Service Learning")	"outcome assessment" OR "Evaluation Criteria" OR "Clinical outcome assessment" OR "Assessment of student achievement" OR "Assessment of student learning" OR "Faculty attitudes toward student learning outcomes assessment" OR "Criteria of Evaluation" OR "Criteria for success-evaluation" OR "Formative student assessment" OR "Program-level student learning outcomes assessment" OR "Student assessment outcomes" OR "Comprehensive Clinical Outcome and Assessment System" OR "Student assessment in the laboratory" OR "Outcome assessments" OR "Outcomes of educational leadership preparation" OR "Student educational outcomes" OR "Self-assessment of competency" OR "peer mentoring" OR "service learning" OR "Self-assessment strategies" OR "self-assessment" OR "Nurses self-assessment of communication skills" OR "Service learning experience" OR "Peer mentors" OR "Peer mentoring practices and effects" OR "Student self-assessment" OR "Clinical service learning" OR "Formative self-assessment" OR "Peer mentor" OR "Self-assessment practices" OR "Self-assessment leadership" OR "Service learning in nursing" OR "Self-assessment questionnaires" OR "informal peer mentor" OR "Peer mentorship" OR "Peer-mentoring" OR "Peer mentoring model" OR "Self-assessment measure" OR "Mentor-peer assistance" OR "Undergraduate Research Student Self-Assessment") OR title (evaluat* N/3 qualitative OR evaluat* N/3 co-construc* OR evaluat* N/3 coconstruc* OR evaluat* N/3 educat* OR evaluat* N/3 intervention* OR Evaluat* N/3 approach* OR Evaluat* N/3 practice* OR Evaluat* N/3 inventor* OR Evaluat* N/3 instrument* OR Evaluat* N/3 scale* OR Evaluat* N/3 measure* OR Evaluat* N/3 analy* OR Evaluat* N/3 pre-test* OR evaluat* N/3 post-test* OR Evaluat* N/3 rating* OR Evaluat* N/3 self OR Evaluat* N/3 peer* OR Evaluat* N/3 model* OR Evaluat* N/3 tool* OR Evaluat* N/3 observer* OR Evaluat* N/3 Summative OR Evaluat* N/3 Formative) OR abstract(evaluat* N/3 qualitative OR evaluat* N/3 co-construc* OR evaluat* N/3 coconstruc* OR evaluat* N/3 educat* OR evaluat* N/3 intervention* OR Evaluat* N/3

			approach* OR Evaluat* N/3 practice* OR Evaluat* N/3 inventor* OR Evaluat* N/3 instrument* OR Evaluat* N/3 scale* OR Evaluat* N/3 measure* OR Evaluat* N/3 analy* OR Evaluat* N/3 pre-test* OR evaluat* N/3 post-test* OR Evaluat* N/3 rating* OR Evaluat* N/3 self OR Evaluat* N/3 peer* OR Evaluat* N/3 model* OR Evaluat* N/3 tool* OR Evaluat* N/3 observer* OR Evaluat* N/3 Summative OR Evaluat* N/3 Formative)

Note. Adapted from the template created by Alix Hayden (ahayden@ucalgary.ca) and Zahra Premji (zahrapremji@uvic.ca) – Oct

2022. CC-BY-SA-NC-4.0

Table 3.3

How to Find & Document Grey Literature Template

STEP 2 – SEARCH & DOCUMENTATION STRATEGIES

NOTE: It is not expected that every search requires all 4 search strategies outlined.

Strategy 1. Targeted Website Browsing/Searching (ie search 1 website at a time)

Browse and/or search (using a variety of identified words) the websites of organizations (government, health organizations, NGOs, universities, research centres, etc.) that publish documents relevant to the research question.

1**. Website Browsing Documentation:**

Date	Organization name	URL	Search Terms	# of items screened (uploaded to Zotero)	# items screened (Uploaded to Covidence)
March 16, 2024	Canadian Association of Schools of Nursing (CASN)	https://www.casn.ca/	1. Leadership/Nursing Students/Evaluation = 0 2. Leadership/Nursing Students =0 3. Leadership = 8	8	5
March 16, 2024	Canadian Nurses Association (CNA)	https://www.cna-aiic.ca/en/home	1. Leadership/Nursing Students/Evaluation = 0 2. Leadership/Nursing Students =4	4	3

March 16, 2024	Registered Nursing Association of Ontario (RNAO)	https://rnao.ca/	1. Leadership/Nursing Students/Evaluation = 0 2. Leadership/Nursing Students =0 3. Leadership = 7	7	4

Website Searching Documentation

Advanced Google (use Advanced Google to search the **websites** of the relevant authorities/organizations identified in Step 1)

Screened sources with search criteria by one screener.

Date	Organization name & website URL	Search strategy(s)/ words searched including (if applicable) how items were selected.	# items retrieved/ search results	# of items screened (Zotero)	# items screened (Uploaded to Covidence)
April 5, 2024	https://www.casn.ca/	Advanced Google evaluation "leadership competency" undergraduate "nursing student" Date: 2014-2024	28	4	0
April 5, 2024	https://www.cna-aiic.ca/	Advanced Google evaluation "leadership competency" undergraduate "nursing student" Date: 2014-2024	2	1	0

April 5, 2024	https://rnao.ca/	Advanced Google evaluation "leadership competency" undergraduate "nursing student" Date: 2014-2024	144	11	0

Strategy 2. Search Engine Searching

Various options include Google, Advanced Google, and customized Google search engines

Search Tips

1. Determine how items will be selected for screening (ex. all results will be screened; will look for items 5 pages past the last click; will look through the first 100 results)
2. Search a variety of word combinations
3. Click on relevant results and look for the PDF of the relevant report

Consider:
- Limit to specific countries using the Advanced Google region limits or search country-specific Google search engines such as Google UK, Google France

Documentation:

Date	Search engine	Search strategy(s) including how items were selected	# of items screened (uploaded to citation management software)	# items screened (Uploaded to Covidence)
April 5, 2024	Advanced Google	evaluation "leadership competency" undergraduate "nursing student" Region: Canada	13	6

		Date: 2014-2014		

Note. Located on the website *Grey literature: What it is & how to find it* (Simon Fraser University Library, n.d.). Adapted from the template created by Kaitlin Fuller & Erica Lenton, Liaison Librarians, University of Toronto and is based on the methods outlined in the article by Godin et al. (2015).

Appendix C: Results

Table 4.1

Database Search Results

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - CINAHL Plus with Full Text

Monday, March 11, 2024, 6:15:31 PM

Concept 1: Nursing Students			
#	**Query**	**Limiters/Expanders**	**Results**
S3	S1 OR S2	Search modes - Boolean/Phrase	84,601
S2	TI (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*) OR AB (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*)	Search modes - Boolean/Phrase	40,795
S1	(MH "Students, Pre-Nursing") OR (MH "Students, Undergraduate") OR (MH "Students, Post-RN") OR (MH "Students, Nursing, Baccalaureate") OR (MH "College Health Nursing") OR (MH "School Nursing")) OR ((MH "Students, Nursing") OR (MH "Education, Nursing, Diploma Programs") OR (MH "Education, Nursing, Baccalaureate"))	Search modes - Boolean/Phrase	70,730

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - CINAHL Plus with Full Text

Monday, March 11, 2024 6:33:54 PM

Concept 2: Leadership			
#	**Query**	**Limiters/Expanders**	**Results**

S3	S1 OR S2	Search modes - Boolean/Phrase	53,333
S2	TI (leadership* N3 (educat* or student* or behavio*r or clinical)) OR AB (leadership* N3 (educat* or student* or behavio*r or clinical))	Search modes - Boolean/Phrase	4,327
S1	(MH Leadership)	Search modes - Boolean/Phrase	51,537

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - CINAHL Plus with Full Text

Monday, March 11, 2024 7:28:03 PM

Concept 3: Evaluation			
#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	347,986
S2	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))	Search modes - Boolean/Phrase	160,536
S1	(MH "Program Evaluation") OR (MH "Behavioral Objectives") OR (MH "Evaluation") OR (MH "Course Evaluation") OR (MH "Competency Assessment") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Formative Evaluation Research") OR (MH "Summative Evaluation Research") OR (MH "Academic Performance") OR (MH	Search modes - Boolean/Phrase	202,592

	"Educational Measurement") OR (MH "Self Assessment") OR (MH "Nursing Outcomes") OR (MH "Clinical Competence") OR (MH "Service Learning")		

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - CINAHL Plus with Full Text

Monday, March 11, 2024 8:55:54 PM

Concepts 1, 2, 3

#	Query	Limiters/Expanders	Results
S12	S3 AND S6 AND S9	Limiters - Publication Date: 20140101-20241231 Narrow by Language: - english Search modes - Boolean/Phrase	219
S11	S3 AND S6 AND S9	Limiters - Publication Date: 20140101-20241231 Search modes - Boolean/Phrase	238
S10	S3 AND S6 AND S9	Search modes - Boolean/Phrase	345
S9	S7 OR S8	Search modes - Boolean/Phrase	347,986
S8	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or	Search modes - Boolean/Phrase	160,536

	measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))		
S7	(MH "Program Evaluation") OR (MH "Behavioral Objectives") OR (MH "Evaluation") OR (MH "Course Evaluation") OR (MH "Competency Assessment") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Formative Evaluation Research") OR (MH "Summative Evaluation Research") OR (MH "Academic Performance") OR (MH "Educational Measurement") OR (MH "Self Assessment") OR (MH "Nursing Outcomes") OR (MH "Clinical Competence") OR (MH "Service Learning")	Search modes - Boolean/Phrase	202,592
S6	S4 OR S5	Search modes - Boolean/Phrase	53,333
S5	TI (leadership* N3 (educat* or student* or behavio*r or clinical)) OR AB (leadership* N3 (educat* or student* or behavio*r or clinical))	Search modes - Boolean/Phrase	4,327
S4	(MH Leadership)	Search modes - Boolean/Phrase	51,537
S3	S1 OR S2	Search modes - Boolean/Phrase	84,601
S2	TI (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*) OR AB (Nurs* N3	Search modes - Boolean/Phrase	40,795

	(student* or junior* or peer* or preregistra* or pre-registra*)		
S1	(MH "Students, Pre-Nursing") OR (MH "Students, Undergraduate") OR (MH "Students, Post-RN") OR (MH "Students, Nursing, Baccalaureate") OR (MH "College Health Nursing") OR (MH "School Nursing")) OR ((MH "Students, Nursing") OR (MH "Education, Nursing, Diploma Programs") OR (MH "Education, Nursing, Baccalaureate"))	Search modes - Boolean/Phrase	70,730

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database – MEDLINE

Monday, March 11, 2024 9:03:49 PM

Concept 1: Nursing Student			
#	**Query**	**Limiters/Expanders**	**Results**
S3	S1 OR S2	Search modes - Boolean/Phrase	71,356
S2	TI (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra* or undergrad*) OR AB (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*or undergrad*)	Search modes - Boolean/Phrase	33,843
S1	(MH "Schools, Nursing") OR (MH "School Nursing") OR (MH "Faculty, Nursing") OR (MH "Nursing Education Research") OR (MH Preceptorship) OR (MH "Education, Nursing, Diploma Programs") OR (MH "Education, Nursing, Baccalaureate")	Search modes - Boolean/Phrase	50,888

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database – MEDLINE

Monday, March 11, 2024 9:08:03 PM

Concept 2: Leadership		
#	**Query**	**Limiters/Expanders**	**Results**
S3	S1 OR S2	Search modes - Boolean/Phrase	171,501
S2	TI (leadership* N3 (educat* or student* or behavio*r or clinical or practice* or judg* or think* or competence or innovat* or reason* or peer coach*)) OR AB (leadership* N3 (educat* or student* or behavio*r or clinical or practice* or judg* or think* or competence or innovat* or reason* or peer coach*))	Search modes - Boolean/Phrase	7,814
S1	(MH Mentor*) OR (MH Leadership) OR (MH "Decision Making")	Search modes - Boolean/Phrase	167,705

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database – MEDLINE

Monday, March 11, 2024 9:15:40 PM

Concept 3: Evaluation		
#	**Query**	**Limiters/Expanders**	**Results**
S3	S1 OR S2	Search modes - Boolean/Phrase	536,819
S2	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR	Search modes - Boolean/Phrase	487,827

	Query	Limiters/Expanders	Results
	AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))		
S1	(MH "Behavioral Objectives") OR (MH Evaluation) OR (MH "Course Evaluation") OR (MH "Competency Assessment") OR (MH "Outcomes of Education") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Formative Evaluation Research") OR (MH "Summative Evaluation Research") OR (MH "Educational Measurement") OR (MH "Self Assessment") OR (MH "Nursing Outcomes") OR (MH "Nursing Evaluation Research") OR (MH "Self-Evaluation Programs")	Search modes - Boolean/Phrase	52,990

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - MEDLINE

Monday, March 11, 2024 9:20:18 PM

Concepts 1, 2, 3			
#	Query	Limiters/Expanders	Results
S11	S3 AND S6 AND S9	Limiters - Publication Date: 20140101-20241231; English Language Search modes - Boolean/Phrase	241
S10	S3 AND S6 AND S9	Search modes - Boolean/Phrase	569
S9	S7 OR S8	Search modes - Boolean/Phrase	536,819
S8	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or	Search modes - Boolean/Phrase	487,827

	instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))		
S7	(MH "Behavioral Objectives") OR (MH Evaluation) OR (MH "Course Evaluation") OR (MH "Competency Assessment") OR (MH "Outcomes of Education") OR (MH "Clinical Indicators") OR (MH "Outcome Assessment") OR (MH "Formative Evaluation Research") OR (MH "Summative Evaluation Research") OR (MH "Educational Measurement") OR (MH "Self Assessment") OR (MH "Nursing Outcomes") OR (MH "Nursing Evaluation Research") OR (MH "Self-Evaluation Programs")	Search modes - Boolean/Phrase	52,990
S6	S4 OR S5	Search modes - Boolean/Phrase	171,501
S5	TI (leadership* N3 (educat* or student* or behavio*r or clinical or practice* or judg* or think* or competence or innovat* or reason* or peer coach*)) OR AB (leadership* N3 (educat* or student* or behavio*r or clinical or practice* or judg* or think* or competence or innovat* or reason* or peer coach*))	Search modes - Boolean/Phrase	7,814
S4	(MH Mentor*) OR (MH Leadership) OR (MH "Decision Making")	Search modes - Boolean/Phrase	167,705
S3	S1 OR S2	Search modes - Boolean/Phrase	71,356
S2	TI (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra* or undergrad*) OR AB (Nurs* N3 (student* or junior* or peer* or preregistra* or pre-registra*or undergrad*)	Search modes - Boolean/Phrase	33,843
S1	(MH "Schools, Nursing") OR (MH "School Nursing") OR (MH "Faculty, Nursing") OR (MH "Nursing Education Research") OR (MH Preceptorship) OR (MH "Education, Nursing, Diploma Programs") OR (MH "Education, Nursing, Baccalaureate")	Search modes - Boolean/Phrase	50,888

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - APA PsycInfo

Monday, March 11, 2024 9:27:58 PM

Concept 1: Nursing Students

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	19,598
S2	(TI Nurs* N3 (undergrad* or baccalaureate or student* or junior* or peer* or preregistra* or pre-registra* or program)) OR (AB Nurs* N3 (undergrad* or baccalaureate or student* or junior* or peer* or preregistra* or pre-registra* or program))	Search modes - Boolean/Phrase	15,757
S1	DE "Nursing Education" OR DE "Nursing Student*"	Search modes - Boolean/Phrase	12,205

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - APA PsycInfo

Monday, March 11, 2024 9:32:41 PM

Concept 2: Leadership

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	68,940
S2	(TI leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*)) OR (AB leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*))	Search modes - Boolean/Phrase	2,679
S1	(DE "Transactional Leadership" OR DE "Transformational Leadership" OR DE "Virtual Leadership" OR DE "Leadership" OR DE "Leadership Qualities" OR DE "Leadership Style") OR DE Mentor*	Search modes - Boolean/Phrase	68,225

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - APA PsycInfo

Monday, March 11, 2024 9:36:41 PM

Concept 3: Evaluation

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	232,142
S2	TI (evaluat* N3 (qualitative or co-construct* or coconstruct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstruct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))	Search modes - Boolean/Phrase	127,561
S1	DE "Curriculum Based Assessment" OR DE "Educational Objectives" OR DE "Educational Attainment Level" OR DE "Student Learning Outcomes" OR DE "Course Evaluation" OR DE "Peer Evaluation" OR DE "Educational Program Evaluation" OR DE Evaluation OR DE "Evaluation Criteria" OR DE "Academic Self Concept" OR DE "Self-Concept" OR DE "Self-Perception" OR DE "Educational Standards"	Search modes - Boolean/Phrase	115,753

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - APA PsycINFO

Monday, March 11, 2024, 9:40:46 PM

Concepts 1, 2, 3

#	Query	Limiters/Expanders	Results
S11	S3 AND S6 AND S9	Limiters - Publication Year: 2014-2024 Search modes - Boolean/Phrase	61

S10	S3 AND S6 AND S9	Search modes - Boolean/Phrase	99
S9	S7 OR S8	Search modes - Boolean/Phrase	232,142
S8	TI (evaluat* N3 (qualitative or co-construct* or coconstruct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)) OR AB (evaluat* N3 (qualitative or co-construct* or coconstruct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*))	Search modes - Boolean/Phrase	127,561
S7	DE "Curriculum Based Assessment" OR DE "Educational Objectives" OR DE "Educational Attainment Level" OR DE "Student Learning Outcomes" OR DE "Course Evaluation" OR DE "Peer Evaluation" OR DE "Educational Program Evaluation" OR DE Evaluation OR DE "Evaluation Criteria" OR DE "Academic Self Concept" OR DE "Self-Concept" OR DE "Self-Perception" OR DE "Educational Standards"	Search modes - Boolean/Phrase	115,753
S6	S4 OR S5	Search modes - Boolean/Phrase	68,940
S5	(TI leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*)) OR (AB leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*))	Search modes - Boolean/Phrase	2,679
S4	(DE "Transactional Leadership" OR DE "Transformational Leadership" OR DE "Virtual Leadership" OR DE "Leadership" OR DE "Leadership Qualities" OR DE "Leadership Style") OR DE Mentor*	Search modes - Boolean/Phrase	68,225
S3	S1 OR S2	Search modes - Boolean/Phrase	19,598
S2	(TI Nurs* N3 (undergrad* or baccalaureate or student* or junior* or peer* or preregistra* or pre-registra* or program)) OR (AB Nurs* N3 (undergrad* or baccalaureate or student* or junior* or peer* or preregistra* or pre-registra* or program))	Search modes - Boolean/Phrase	15,757
S1	DE "Nursing Education" OR DE "Nursing Student*"	Search modes - Boolean/Phrase	12,205

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - Academic Search Complete

Monday, March 11, 2024 9:45:35 PM

Concept 1: Nursing Students

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	24,305
S2	(TI Nurs* N3 (undergrad* or baccalaureate or junior* or peer* or preregistra* or pre-registra*)) OR (AB Nurs* N3 (undergrad* or baccalaureate or junior* or peer* or preregistra* or pre-registra* or program))	Search modes - Boolean/Phrase	15,099
S1	DE "NURSING students" OR DE "IN-service training of nurses" OR DE "NURSING school graduates"	Search modes - Boolean/Phrase	12,385

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - Academic Search Complete

Monday, March 11, 2024 9:51:15 PM

Concept 2: Leadership

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	67,018
S2	TI (leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*)) OR AB (leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*))	Search modes - Boolean/Phrase	3,275

S1	(DE "STUDENT leadership" OR DE "DEVELOPMENT leadership" OR DE "LEADERSHIP training" OR DE "TRANSFORMATIONAL leadership") OR (DE "NURSING leadership" OR DE LEADERSHIP OR DE "EDUCATIONAL leadership")	Search modes - Boolean/Phrase	65,176

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - Academic Search Complete

Monday, March 11, 2024 9:57:02 PM

Concept 3: Evaluation

#	Query	Limiters/Expanders	Results
S3	S1 OR S2	Search modes - Boolean/Phrase	583,239
S2	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)	Search modes - Boolean/Phrase	443,986
S1	(DE "PERFORMANCE evaluation" OR DE "TEACHER evaluation standards" OR DE "TEACHER evaluation methods" OR DE "EVALUATION utilization" OR DE "SELF-evaluation" OR DE "FORMATIVE evaluation" OR DE "INFORMAL evaluation" OR DE "STUDENT self-evaluation" OR DE "EVALUATION" OR DE "EDUCATIONAL evaluation" OR DE "SUMMATIVE tests")	Search modes - Boolean/Phrase	155,057

Interface - EBSCOhost Research Databases
Search Screen - Advanced Search
Database - Academic Search Complete

Monday, March 11, 2024 10:01:11 PM

Concept 1, 2, 3

#	Query	Limiters/Expanders	Results
S11	S3 AND S6 AND S9	Limiters - Publication Date: 20140101-20241231 Search modes - Boolean/Phrase	51
S10	S3 AND S6 AND S9	Search modes - Boolean/Phrase	59
S9	S7 OR S8	Search modes - Boolean/Phrase	583,239
S8	TI (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*) OR AB (evaluat* N3 (qualitative or co-construct* or coconstuct* or educat* or intervention or approach or practice or inventory or instrument* or scale* or measure* or analy* or pre-test* or post-test* or rating or self or peer* or model* or measure* or tool* or scale* or observer*)	Search modes - Boolean/Phrase	443,986
S7	(DE "PERFORMANCE evaluation" OR DE "TEACHER evaluation standards" OR DE "TEACHER evaluation methods" OR DE "EVALUATION utilization" OR DE "SELF-evaluation" OR DE "FORMATIVE evaluation" OR DE "INFORMAL evaluation" OR DE "STUDENT self-evaluation" OR DE "EVALUATION" OR DE "EDUCATIONAL evaluation" OR DE "SUMMATIVE tests")	Search modes - Boolean/Phrase	155,057
S6	S4 OR S5	Search modes - Boolean/Phrase	67,018
S5	TI (leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*)) OR AB (leadership* N3 (judg* or think* or competence or innovat* or reason* or peer*))	Search modes - Boolean/Phrase	3,275
S4	(DE "STUDENT leadership" OR DE "DEVELOPMENT leadership" OR DE "LEADERSHIP training" OR DE "TRANSFORMATIONAL leadership") OR (DE "NURSING leadership" OR DE LEADERSHIP OR DE "EDUCATIONAL leadership")	Search modes - Boolean/Phrase	65,176

S3	S1 OR S2	Search modes - Boolean/Phrase	24,305
S2	(TI Nurs* N3 (undergrad* or baccalaureate or junior* or peer* or preregistra* or pre-registra*)) OR (AB Nurs* N3 (undergrad* or baccalaureate or junior* or peer* or preregistra* or pre-registra* or program))	Search modes - Boolean/Phrase	15,099
S1	DE "NURSING students" OR DE "IN-service training of nurses" OR DE "NURSING school graduates"	Search modes - Boolean/Phrase	12,385

Interface - ProQuest
Search Screen - Advanced Search
Database - ProQuest Dissertations and Theses
Concepts 1, 2, 3
March 12, 2024, 21:56

Set#	Searched for	Databases	Results
S1	diskw.Exact("Freshman nursing students" OR "Novice nursing students" OR "Nursing students education" OR "Nursing students'" OR "College nursing students" OR "BSN nursing students" OR "Baccalaureate Nursing students" OR "Clinical nursing students" OR "Entry-level nursing students" OR "Accelerated baccalaureate nursing students" OR "Bsn nursing students" OR "Junior nursing students" OR "First semester nursing students" OR "Beginning level nursing students" OR "Community college nursing students" OR "First-year nursing students" OR "Nursing education and students" OR "Bachelor of science in nursing students" OR "Bachelors Degree Nursing Students" OR "Accelerated nursing students" OR "Bachelor's of nursing students" OR "Undergraduate nurses" OR "Undergraduate student nurses" OR "Pre-Nursing Students" OR "Pre-nursing students" OR "Baccalaureate pre-nursing")	ProQuest Dissertations & Theses Global	1044

S2	title(Nurs* NEAR/3 student* OR Nurs* NEAR/3 Junior* OR Nurs* NEAR/3 Undergrad* OR Nurs* NEAR/3 Preregistra* OR Nurs* NEAR/3 Pre-registra*) OR abstract(Nurs* NEAR/3 student* OR Nurs* NEAR/3 Junior* OR Nurs* NEAR/3 Undergrad* OR Nurs* NEAR/3 Preregistra* OR Nurs* NEAR/3 Pre-registra*)	ProQuest Dissertations & Theses Global	8647
S3	[S1] OR [S2]	ProQuest Dissertations & Theses Global These databases are searched for part of your query.	8680
S4	diskw.Exact("Nursing academic leadership" OR "Future of nursing leadership" OR "Nursing leadership" OR "Nursing leadership education" OR "Clinical nursing leadership" OR "Nursing leadership styles" OR "Nursing education leadership" OR "Leadership competence" OR "Nursing program leadership" OR "Influence of nursing leadership" OR "Nursing leadership standards" OR "Nursing leadership development" OR "Effects of transformational leadership in nursing" OR "Mentoring and leadership")	ProQuest Dissertations & Theses Global	115
S5	title(leadership N/3 nurs* OR leadership N/3 "nursing education" OR leadership N/3 Educat* OR leadership NEAR/3 reason* OR leadership NEAR/3 think* OR Leadership NEAR/3 peer* OR leadership NEAR/3 judg* OR leadership NEAR/3 Mentor* OR leadership NEAR/3 Compet* OR Leadership N/3 innovat*) OR abstract(leadership N/3 nurs* OR leadership N/3 "nursing education" OR leadership N/3 Educat* OR leadership NEAR/3 reason* OR leadership NEAR/3 think* OR Leadership NEAR/3 peer* OR leadership NEAR/3 judg* OR leadership NEAR/3 Mentor* OR leadership NEAR/3 Compet* OR Leadership N/3 innovat*)	ProQuest Dissertations & Theses Global	12831

S6	[S4] OR [S5]	ProQuest Dissertations & Theses Global These databases are searched for part of your query.	12866
S7	diskw.Exact("Analysis and Evaluation" OR "Academic evaluation" OR "Analysis and evaluation system" OR "evaluation" OR "analysis evaluation" OR "Academic Competence Evaluation Scales" OR "Affective evaluation" OR "Analysis Design Development Implementation Evaluation" OR "achievement evaluation" OR "Analytical evaluation" OR "Competence assessment" OR "clinical competence assessment" OR "Competence" OR "clinical competence" OR "Academic competence" OR "Assigning competence" OR "Competence and knowledge" OR "Clinical competence evaluation" OR "Behavioral competence" OR "Assessing competence" OR "Assessment competence" OR "Competence and incompetence" OR "Academic assessment" OR "Academic achievement and assessment" OR "Achievement assessment" OR "Access skill assessment" OR "evaluation criteria" OR "Student assessment performance" OR "Criteria evaluation" OR "Student assessment practices" OR "Student learning outcome assessment" OR "Outcome indicators" OR "Educational outcomes" OR "student assessment" OR "Positive educational outcomes" OR "Faculty involvement in student learning outcomes assessment" OR "Assessment of Student Functioning" OR "Student assessments" OR "Current outcome performance indicators" OR "Evaluation criteria and standards" OR "outcome assessment" OR "Evaluation Criteria" OR "Clinical outcome assessment" OR "Assessment of student achievement" OR "Assessment of student learning" OR "Faculty attitudes toward student learning outcomes assessment" OR "Criteria of Evaluation" OR "Criteria for success-evaluation" OR "Formative student assessment" OR "Program-level student learning outcomes assessment" OR "Student assessment outcomes" OR	ProQuest Dissertations & Theses Global	4772

	"Comprehensive Clinical Outcome and Assessment System" OR "Student assessment in the laboratory" OR "Outcome assessments" OR "Outcomes of educational leadership preparation" OR "Student educational outcomes" OR "Self-assessment of competency" OR "peer mentoring" OR "service learning" OR "Self-assessment strategies" OR "self-assessment" OR "Nurses self-assessment of communication skills" OR "Service learning experience" OR "Peer mentors" OR "Peer mentoring practices and effects" OR "Student self-assessment" OR "Clinical service learning" OR "Formative self-assessment" OR "Peer mentor" OR "Self-assessment practices" OR "Self-assessment leadership" OR "Service learning in nursing" OR "Self-assessment questionnaires" OR "informal peer mentor" OR "Peer mentorship" OR "Peer-mentoring" OR "Peer mentoring model" OR "Self-assessment measure" OR "Mentor-peer assistance" OR "Undergraduate Research Student Self-Assessment")		
S8	title(evaluat* N/3 qualitative OR evaluat* N/3 co-construc* OR evaluat* N/3 coconstruc* OR evaluat* N/3 educat* OR evaluat* N/3 intervention* OR Evaluat* N/3 approach* OR Evaluat* N/3 practice* OR Evaluat* N/3 inventor* OR Evaluat* N/3 instrument* OR Evaluat* N/3 scale* OR Evaluat* N/3 measure* OR Evaluat* N/3 analy* OR Evaluat* N/3 pre-test* OR evaluat* N/3 post-test* OR Evaluat* N/3 rating* OR Evaluat* N/3 self OR Evaluat* N/3 peer* OR Evaluat* N/3 model* OR Evaluat* N/3 tool* OR Evaluat* N/3 observer* OR Evaluat* N/3 Summative OR Evaluat* N/3 Formative) OR abstract(evaluat* N/3 qualitative OR evaluat* N/3 co-construc* OR evaluat* N/3 coconstruc* OR evaluat* N/3 educat* OR evaluat* N/3 intervention* OR Evaluat* N/3 approach* OR Evaluat* N/3 practice* OR Evaluat* N/3 inventor* OR Evaluat* N/3 instrument* OR Evaluat* N/3 scale* OR Evaluat* N/3 measure* OR Evaluat* N/3 analy* OR Evaluat* N/3 pre-test* OR evaluat* N/3 post-test* OR Evaluat* N/3 rating* OR Evaluat* N/3 self OR Evaluat* N/3	ProQuest Dissertations & Theses Global	135694

	peer* OR Evaluat* N/3 model* OR Evaluat* N/3 tool* OR Evaluat* N/3 observer* OR Evaluat* N/3 Summative OR Evaluat* N/3 Formative)		
S9	[S7] OR [S8]	ProQuest Dissertations & Theses Global These databases are searched for part of your query.	139452
S10	[S3] AND [S6] AND [S9]	ProQuest Dissertations & Theses Global These databases are searched for part of your query.	18
S11	([S3] AND [S6] AND [S9]) AND pd (20140101-20240312)	ProQuest Dissertations & Theses Global These databases are searched for part of your query.	11

Note. Searches were retrieved from the EBSCO host platform for CINAHL Plus with Full Text, MEDLINE, APA PsycINFO,

Academic Search Complete, and ProQuest Dissertations and Theses – Full Text databases.

Table 4.2

Citation Search

#	Citation	Source Derived	Include/Exclude	Rationale
1	Brown et al. 2015	Unsworth et al. 2021	Exclude	Papers listed in the literature review are greater than 10 years old and, thus, not relevant to the search.
2	De Juan Pardo et al. 2021	De Juan Pardo et al. 2022	Exclude	Wrong context. Examines the impact of the student-led conferences not in clinical practice.
3	Nilsson et al. 2014	Unsworth et al. 2021	Exclude	Wrong population: newly graduated nurse students.
4	Unsworth et al. 2020	Unsworth et al. 2021	Exclude	The Total Client Care assessment tool measures general client care, not leadership
5	White 2014	Dimino et al. 2022	Exclude	The quantitative tool assesses self-confidence and anxiety during clinical decision-making, not leadership competency.

Note. Sources derived from the reference lists of the twelve sources included in the search.

Appendix D: Extraction, Charting and Presentation of Results

Table 4.3

Presentation of Sources

Parameter	Results	
Number of publications	• Total number of sources of evidence	12
	• Total numbers between 2014 to 2024	12
Format	• Journal	11
	• Peer-reviewed	11
	• Thesis Document	1
Country of Origin	• USA	5
	• Spain	2
	• Jordan	1
	• Iran	1
	• Italy	1
	• Turkey	1
	• United Kingdom	1
Source Types	• Cross-sectional studies	2
	• Quasi-experimental studies	1
	• Mixed methods	1
	• Pretest - post-test studies	1
	• Systematic Review	1
	• Validation studies	1
	• Randomized control trial studies	1
	• Feasibility study	1
	• Methodology studies	1
	• Tool validation study	1
	• Quality improvement study	1
Population(s)	• 1st year nursing students	2
	• 2nd year nursing students	1

• **Undergraduate nursing students**	• 3rd year nursing students	5
	• 4th year nursing students	8
	• Year not identified	1
	• Other	1
Concept	• Evaluative Process	12
	• Leadership Competency	12
Context	• Nursing Program (General)	4
	• Dedicated Education Unit	3
	• Medical-surgical unit	2
	• Service Learning	2
	• Operating Room	1
	• Adult, children's and mental health units	1

Note: Adapted from *Table 11.3: Example tabular presentation of data for a scoping review* in *JBI Manual for Evidence Synthesis* by Peters et al. (2020a).

Table 4.4

Key Findings Evidence Comparison

Author/Date	Source Origin	Population	Evaluative Processes	Nursing Leadership Competencies		Recommendations
Campbell (2018)	USA	Fifth-semester undergraduate nursing students	Youth Leadership Life Skills Development Scale (YLLSDS)	Self-reported: -Communication -Decision-making -Interpersonal harmony -Learning -Management -Understanding yourself -Working with groups		The tool relies on students' self-reported gains in leadership skills, which may not translate to observable or measurable outcomes. Through self-reflection, students can improve their leadership skills before the final evaluation.
De Juan Pardo, M. et al. (2022)	Spain	Senior (third or fourth year) Bachelor of Science in Nursing (BSN) students	Spanish version of the Self-Assessment Leadership Instrument (SALI)	Mentor ratings: -Strategic thinking (evaluation and decision-making) -Emotional intelligence -Communication (impact and influence) -Teamwork skills	Self-rated: -Strategic thinking (evaluation and decision-making) -Emotional intelligence -Communication (impact and influence)	Using the SALI, students' self-perceptions of leadership skills may not align with their actual competence in practice. More studies are needed to develop objective measures of leadership competence among nursing students.

				-Teamwork skills		
Dimino et al. (2022)	USA	Senior nursing students (Galuska, 2015)- the only article in the review that met the criteria.	Student Leadership Practices Inventory (LPI)	Self-reported: -Professional role development -Evidence-based practice -Clinical judgement -Collaboration -Teamwork -"Thinking like a nurse" (p. 193).		Self-reporting is considered the lowest level of learning evaluation from an academic standpoint. Additional objective data is needed to assess nursing students' learning outcomes. To ensure best practices in undergraduate clinical nursing education, valid and reliable measures must be identified to generate evidence to guide and standardize practice.
Foli et al. (2014)	USA	Senior-level baccalaureate nursing students	Student Leadership Practices Inventory (SLPI)-Self & Leadership Practices Inventory (LPI)- Observer	Peer evaluation: -Modelling the way -Inspiring a shared vision -Challenging the process -Enabling others to act -Encouraging the heart.	Self-evaluation: -Modelling the way -Inspiring a shared vision -Challenging the process -Enabling others to act -Encouraging the heart.	The implications for education include semester-long group projects, faculty role-modeling, and encouraged discussions to enhance leadership development. The student self and peer evaluations were similar in the post-test results.

Fuster Linares et al. (2020)	Spain	Undergraduate nursing students (years 1-4)	The Spanish version of the Self-Assessment Leadership Instrument (Es-SALI)	Self-reported: -Strategic thinking (evaluation and decision-making) -Emotional intelligence -Communication (impact and influence) -Teamwork skills		More research is needed to explore the relationship between nurse education and leadership abilities in clinical settings, and their impact on nursing students' leadership development. Identifying and understanding these dimensions can lead to more targeted teaching methods in nursing programs.
Galuska (2015)	USA	Senior baccalaureate nursing students	Student Leadership Practices Inventory (LPI)	Clinical instructor assessed: -Modelling the way -Inspiring a shared vision -Challenging the process-Enabling others to act -Encouraging the heart	Self-assessed: -Modelling the way -Inspiring a shared vision -Challenging the process-Enabling others to act -Encouraging the heart	The self-assessed scores of the students did not differ significantly from the observed Student LPI scores of the Clinical Instructors. The Student LPI is a reliable and valid tool for students' self-assessed leadership development and for observed development by clinical instructors.
Karaman et al. (2023)	Turkey	Bachelor's degree level nursing students	Educational Leadership Scale (ELS) for Nursing Students	Self-reported: Behaviours to encompass visionary, instructional, and scientific leadership: -Preventive nursing		Further studies are needed to confirm the reliability and validity of the ELS across different nursing groups and countries. The tool will assess nursing students' leadership skills and identify areas for improvement, as

|				-Patient education -Professional ethics -Clear communication -Interpersonal skills -Role modelling -Educational environment creation -Support democracy -Seek help -Provide supervision	well as aid in curriculum development through educational leadership activities.
McQuiston & Hanna (2015)	USA	Senior leadership and junior medical/surgical nursing students	Lasater Clinical Judgment Rubric (LCJR)	Self-assessed: Behaviours based on Tanner's (2006) noticing, interpreting, responding, and reflecting model: -Interpreting client deviations -Asking for information -Prioritization -Data discernment -Maintain calmness and confidence -Flexibility -Self-assessment and improvement -Observation, communication, organization, and technical skills.	Both junior and senior nursing students reported improvements in critical thinking, reasoning, and clinical judgment after participating in peer coaching. LCJR was not mentioned as a validated tool.

Mirbagher Ajorpaz et al. (2016)	Iran	Final-semester Bachelor of Nursing operating room students	Persian version of the Perceived Perioperative Competence Scale-Revised (PPCS-R)	Faculty member evaluated: -Foundational knowledge and skills -Leadership -Collegiality -Proficiency -Empathy -Professional development -Overall perceived clinical competence.	The low leadership scores may be due to the mentoring program's focus on building a friendly relationship rather than on leadership development. Traditional design programs need to devise more creative strategies for leadership development in the operating room (OR) curriculum. Further research with a larger student sample is necessary.
Notarnicola et al. (2018)	Italy	Third-year Bachelor of Nursing Students	Italian version of the Nurse Competence Scale (INCS)	Self-assessed: -Tutoring -Professional leadership -Educational interventions -Care management -Research -Professional awareness -Ethical values -Guiding staff -Being autonomous -Directing the situation -Self-care	The INCS needs further improvement, including the assessment of clinical incompetence or errors. Additional research is needed to determine whether the INCS appropriately assesses student competency. It is recommended that further analysis of the INCS be conducted to confirm its validity.

				-Delegation -Providing expertise and feedback -Coordinating care -Multidisciplinary care	
Suliman et al. (2023)	Jordan	Third and fourth-year Bachelor of Nursing students.	Nursing Professional Competencies Scale-Short Form (NPC-SF)	Self-reported: -Value-based nursing care -Values and beliefs -Medical and technical care -Pedagogic care -Documentation -Administration and development of nursing care -Leadership -Organization	The study recommends integrating leadership and management education into nursing schools and adopting a competency-based approach to nursing education. It also highlights the need for observational studies to evaluate clinical competence objectively and cautions against overestimating competence based on a student's perspective.
Unsworth et al. (2021)	United Kingdom	Master of Nursing students*	Leading and Managing Care (LMC) assessment tool	Practice educator assessed: -Communication -Resource management and coordination -Risk assessment and control -Care prioritization -Delegation	The LMC helps newly graduated nurses transition to managing and prioritizing care. Further research is required to assess nursing student competence by nursing instructors for the LMC's global rating.

* The tool was tested on Master of Nursing Students but is intended for undergraduate nursing students.

☐ Mentor/Peer Observer/Faculty/Clinical Instructor

■ Self-Assessment

Note. Key findings extracted from the 12 included sources.

Table 4.5

Leadership Competency Skills and Behaviours

Number	Skill and Behaviours	Study	Instrument
1	Communication; clear communication; open communication	Campbell, 2018; De Juan Pardo et al., 2022; Fuster Linares et al., 2020; Galuska, 2015; Karaman et al., 2023; McQuiston & Hanna, 2015; Unsworth et al., 2021	YLLSDS, SALI, LPI, ELS, LCJR, LMC
2	Working with groups, Teamwork, Leading discussions, Multidisciplinary care	Campbell, 2018; De Juan Pardo et al., 2022; Dimino et al., 2022; Fuster Linares et al., 2020; Galuska, 2015; Notarnicola et al., 2018	YLLSDS, SALI, LPI, NCS
3	Management/ management of care, Charge nurse activities, directing the situation, resource management and coordination	Campbell, 2018; Galuska, 2015; Notarnicola et al., 2018; Unsworth et al., 2021	YLLSDS, LPI, NCS, LMC
4	Leadership role development, Leadership, Professional Leadership	Dimino et al., 2022; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018; Suliman et al., 2023	LPI, PPCS-R, NCS, NPC-SF
5	Organization, coordination of care, administration and development of nursing care, care prioritization	McQuiston & Hanna, 2015; Notarnicola et al., 2018; Suliman et al., 2023; Unsworth et al., 2021	LCJR, NCS, NPC-SR, LMC
6	Understanding yourself, Self-assessment and improvement, Self-care	Campbell, 2018; McQuiston & Hanna, 2015; Notarnicola et al., 2018	YLLSDS, LCJR, NCS
7	Professional role development, Professional Awareness	Dimino et al., 2022; Mirbagher Ajorpaz et al., 2016; Notarnicola et al., 2018	LPI, PPCS-R, NCS
8	Delegation	Galuska, 2015; Notarnicola et al., 2018; Unsworth et al., 2021	LPI, NCS, LMC
9	Patient and family education, educational environment creation, tutoring, educational interventions, providing expertise and feedback	Karaman et al., 2023; Notarnicola et al., 2018; Suliman et al., 2023	ELS, NCS, NPC-SF
10	Clinical judgement, interpreting client deviations, Data Discernment	Dimino et al., 2022; McQuiston & Hanna, 2015	LPI, LCJR

11	Collaboration, Collegiality	Dimino et al., 2022; Galuska, 2015; Mirbagher Ajorpaz et al., 2016	LPI, PPCS-R
12	"Modelling the way", Role Modelling	Foli et al., 2014; Galuska, 2015; Karaman et al., 2023	LPI, ELS
13	Professional ethics, ethical values	Karaman et al., 2023; Notarnicola et al., 2018	ELS, NCS
14	Seek Help, Asking for information	Karaman et al., 2023; McQuiston & Hanna, 2015	ELS, LCJR
15	Provides supervision, Guidance	Karaman et al., 2023; Notarnicola et al., 2018	ELS, NCS
16	Technical skills, Medical and Technical Care	McQuiston & Hanna, 2015; Suliman et al., 2023	LCJR, NPC-SF
17	Empathy, Value-based care, Values and Beliefs	Mirbagher Ajorpaz et al., 2016; Suliman et al., 2023	PPCS-R, NPC-SF
18	Decision-making	Campbell, 2018	YLLSDS
19	Interpersonal harmony	Campbell, 2018	YLLSDS
20	Learning	Campbell, 2018	YLLSDS
21	Strategic thinking	De Juan Pardo et al., 2022; Fuster Linares et al., 2020	SALI
22	Emotional intelligence	De Juan Pardo et al., 2022; Fuster Linares et al., 2020	SALI
23	Evidenced-based practice	Dimino et al., 2022	LPI
24	"Thinking like a nurse"	Dimino et al., 2022	LPI
25	"Inspire a shared vision"	Foli et al., 2014; Galuska, 2015	LPI
26	"Challenge the process"	Foli et al., 2014; Galuska, 2015	LPI
27	"Enable others to act"	Foli et al., 2014; Galuska, 2015	LPI
28	"Encourage the heart"	Foli et al., 2014; Galuska, 2015	LPI
29	Shared Governance	Galuska, 2015	LPI
30	Preventative nursing	Karaman et al., 2023	ELS
31	Democracy	Karaman et al., 2023	ELS
32	Calmness and Confidence	McQuiston & Hanna, 2015	LCJR
33	Flexibility	McQuiston & Hanna, 2015	LCJR
34	Observation	McQuiston & Hanna, 2015	LCJR
35	Clinical Competence	Mirbagher Ajorpaz et al., 2016	PPCS-R
36	Proficiency	Mirbagher Ajorpaz et al., 2016	PPCS-R
37	Research	Notarnicola et al., 2018	NCS

38	Autonomous	Notarnicola et al., 2018	NCS
39	Documentation	Suliman et al., 2023	NPC-SF
40	Risk assessment and control	Unsworth et al., 2021	LMC

Note. Leadership Competency Skills and Behaviours extracted from the 12 sources.