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Evaluation of Best Practice Guidelines Implementation in an Undergraduate Nursing Curriculum

by

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Abstract

This mixed methods study sought to understand the implementation of Registered Nurses Association of Ontario's (RNAO) Best Practice Guidelines (BPGs) in the undergraduate nursing program in the State of Qatar. The RNAO has disseminated over 50 BPGs on clinical topics and on healthy work environment topics (Melnyk, 2015). All BPGs whether clinical or related to a healthy work environment, are developed to improve patient care and provide easy access to evidence-based research to students, instructors, and practicing nurses (Edwards et al., 2005).

For this research, Yrjö Engeström's (1987) Cultural Historic Activity Theory (CHAT) was selected due to its explanation of the interactions among various participants and factors within the activity system (or environment) towards the achievement of a common goal (Greig et al., 2012). The implementation and evaluation of the RNAO BPGs in the undergraduate nursing program in Qatar required an understanding of interactions and relationships among the various participants. CHAT enabled the researcher to examine these complex relationships.

The participants' experiences with the teaching and learning of RNAO BPGs were explored using a mixed methods approach. Quantitative methods included questionnaires, while qualitative methods consisted of interviews and document analyses. Both methods enabled the triangulation of the findings to gain an in-depth understanding of the RNAO BPGs implementation process.

The findings showed that the integration of RNAO BPGs into the undergraduate nursing program successfully strengthened the curriculum through the intentional incorporation of evidence-based guidelines, though there were areas for improvement. Students and instructors were aware of the BPGs but needed more education to incorporate them efficiently and effectively. Moreover, the use of BPGs in courses as evidence-based tools was evident but

lacked depth. The guidelines were perceived as lengthy, somewhat outdated, and not inclusive of all topics. However, there was also a lack of awareness among students and instructors regarding the status of updates to the guidelines. There was a perception of bias, with a focus on RNAO guidelines over other evidence-based guidelines and resources. Additionally, there were reports of actual and perceived cultural barriers due to the Western-based examples in some of the guidelines. On the other hand, the review of the guidelines revealed that it was explicitly mentioned to "use the guidelines if culturally appropriate". The statements by students and some of the experiences shared by the instructors about cultural appropriateness could be interpreted as a sense of being "othered" and the need for the guidelines to be "read" as culturally appropriate.

Due to time constraints, an evaluation of the impact of the BPGs on students' application of guidelines in clinical practice could not be conducted. It is proposed to include an evidence-based practice (EBP) course and a scaffolded approach to integrate EBP teaching, learning, and assessment strategies. This approach is recommended to improve the integration, monitoring, and application of EBP in clinical practice courses using outcome indicators.

While the findings are limited to students who participated in the research study, the recommendations will help the participating academic institution refine its strategies as it continues to monitor the implementation process. The findings may also benefit other academic institutions aiming to incorporate RNAO BPGs into their nursing curricula.

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CHAPTER ONE: INTRODUCTION

In this chapter, I present an overview of the background and context of this mixed-methods study, which investigated Evidence-Based Practice (EBP) in nursing education, and the role of Academic Best Practice Spotlight Organizations (AcBPSOs) in promoting evidence-based teaching, learning, and clinical practices by incorporating the Registered Nurses Association of Ontario's (RNAO) Best Practice Guidelines (BPGs) into the undergraduate nursing curriculum. Additionally, an introduction to the Cultural Historical Activity Theory (CHAT) is presented, along with the rationale for using this framework in the current research. After that, the description of the research problem, research questions, the significance of conducting this research, a brief introduction to the researcher, and the definition of key terms used in this research are presented.

Background

Nursing education has transitioned from an apprenticeship model of training in hospital settings to a formal education model in universities and colleges, which began to emerge in the 1960s (Baker et al., 2012; Canadian Association of Schools of Nursing [CASN], 2011). While the entry-to-practice preparedness of nursing students has been a topic of discussion for decades, it became a major topic of debate in the late 1970s due to the growing complexities of patient population in hospital settings and the expanding role of nurses in community settings (Baker et al., 2012; CASN, 2011). CASN (2011) notes that nurses must be lifelong learners who can adapt to changes in knowledge and technology. They must also keep up with the rapid expansion of health-related information by engaging in ongoing professional development, research, and scholarship. CASN has developed a framework outlining expectations for baccalaureate, master's, and doctoral nursing programs, with one key domain being "research, methodologies,

critical inquiry, and evidence," which "includes the thinking and inquiry skills, and the processes used to appraise, generate, synthesize, translate, and implement knowledge" (CASN, 2011, p. 2).

Knowledge acquired in nursing schools may evolve based on new research and emerging information. On the practice side, the patient-related problems faced by nursing students in the clinical practice are ill-structured problems for which nursing students must use their knowledge and judgment to tailor the solution to individualized patients' needs. A standardized approach to solving problems may result in compromising patient's safety and the quality of care been provided (Aglen, 2016). Nurses must develop the skills and appreciation to update their knowledge and skills necessary to provide the best available care. For the provision of quality care, nursing students must be taught not only to acquire knowledge and skills (Kalb et al., 2015) but also to develop an attitude of practicing nursing based on current evidence from recent research and best practices to provide safe and competent care (Song et al., 2021). For instructors to promote EBP among nursing students, emphasis should be given to guiding them towards the role of knowledge creator and using discretion while applying knowledge to ill-structured, real-world problems by collecting evidence from all relevant sources of evidence, and not just from research findings (Aglen, 2016). EBP is based on current research which may be different from practices that health care practitioners including practicing nurses and nursing instructors would have learned and practiced in their long nursing careers.

EBP provides nursing students and educators with current information and research, which, when applied in practice, results in individualized patient care, faster recovery, and shorter hospital stays. However, EBP concepts cannot be taught as a separate, one-time entity. For EBP to be embedded in routine practice, it must be incorporated throughout the curriculum, including all courses, across all years of education, and in the clinical settings (Ciliska, 2005).

EBP is a seven-step process which includes, ‘cultivate a spirit of inquiry’, ‘formulate an answerable question’, ‘systematic search for the research evidence’, ‘appraisal of the validity, relevance, and applicability of the evidence’, ‘integration of the research evidence with the clinical expertise of the practitioner and the wishes of the patients and families’, ‘implementation of the evidence-based decision and evaluation of the outcomes’, and ‘dissemination of the results’ (Melnyk & Fineout-Overholt as cited in Reid et al., 2017). These steps can be carefully embedded in the curriculum and reinforced in the clinical settings to strengthen the learning of EBP.

Nursing curricula should equip students with knowledge and skills necessary for EBP and foster an attitude towards embracing EBP (Ruzafa-Martinez et al., 2013). Furthermore, nursing instructors should model the evidence-based nursing process by demonstrating how to integrate patients’ values and preferences, resources, clinician expertise, and research evidence in clinical decision making (Ciliska, 2005). However, nursing students often find it difficult to connect classroom theory with clinical practice (Aglen, 2016). One tool that can help bridge the gap between research and practice is the use of clinical guidelines developed by professional and government organizations, which provide credible research summaries and recommendations for best practice (Davies et al., 2008).

Role of Registered Nurses Association of Ontario’s Best Practice Guidelines

The RNAO is a voluntary professional body representing over 48,000 registered nurses, nurse practitioners, and nursing students in Ontario. With funding from the Ontario Ministry of Health and Long-Term Care, RNAO launched a multi-year initiative in 1999 to develop, implement, evaluate, and disseminate BPGs related to clinical practice and healthy work environments (Edwards et al., 2005; RNAO, 2015b). This flagship program, which has been

implemented nationally and internationally, provides leadership in the development, implementation, and evaluation of BPGs in nursing education (RNAO, 2015b).

Clinical guidelines are examples of evidence-based tools that improve patient outcomes (Melnyk, 2015). After a rigorous development process, RNAO has published over 50 BPGs on clinical and on work environment-related topics (see Appendix A). Each guideline is developed following these detailed processes:

(1) A comprehensive and critical review of the literature based on set criteria.

(2) Recommendations for each best practice guideline is evidence-based. The pieces of evidence typically came from randomized controlled trials (RCT) and where RCTs were not available, qualitative studies, patient experiences, clinician expertise, and consensus served as alternatives of evidence.

(3) A diverse group of stakeholders including patients, families, multidisciplinary health team members, and policymakers review the draft BPGs (RNAO, 2005).

BPGs are deemed to be useful tools in providing good foundational skills for students to learn about key aspects of EBP, which include how to identify evidence, how to assess the level of evidence, how to select relevant information, how to apply relevant research recommendations, and how to evaluate evidence of best practice (RNAO, 2005). Through BPGs, students see how evidence learned in the classroom is applied in practice. The use of RNAO BPGs has led to significant improvements in clinical and system-related outcomes (Virani & Grinspun, 2007). However, RNAO cautions users to consider patient preferences, choice, and feasibility in terms of environment and culture when using BPGs; they should not be applied blindly without considering individual preferences and circumstances (RNAO, 2005).

Best Practice Spotlight Organization (BPSO)

The designation for BPSO was first initiated in 2003 with nine health care organizations in the provinces of Ontario and Quebec (RNAO, 2015b). It is an organizational knowledge transfer strategy, through which the academic and practice organizations form a formal partnership with RNAO to systematically create a plan of implementing RNAO clinical BPGs as well as healthy work environment BPGs (Bajnok et al., 2018; RNAO, 2017). This program aims to foster an evidence-based culture in healthcare and educational organizations, with the ultimate goal of improving patient and organizational outcomes using RNAO BPGs (Cable-Williams et al., 2014; RNAO, 2017). Globally. Over 950 healthcare and academic sites have received the RNAO BPSO designation (RNAO, 2005).

BPSOs fall into two categories, service BPSOs, which are clinical settings, and AcBPSOs, which are colleges and universities offering nursing education programs. The creation of service BPSOs have resulted in practice changes and improved work environment, health outcomes, and quality of life of patients, as well as saved healthcare cost (Bajnok et al., 2018). Currently, there are over 1000 designated BPSOs and 14 of them are AcBPSOs (RNAO, 2017). AcBPSOs commit to integrating RNAO BPGs throughout the curriculum (Bajnok et al., 2018) to prepare nursing students to become evidence-based practitioners which improves person and family care outcomes (MacDonald et al., 2018). For academic settings, the inclusion of guideline implementation within the overall EBP curriculum allows for the delivery of EBP curriculum (Ewers et al., 2008). AcBPSOs are required to implement and evaluate multiple BPGs over a three-year qualifying period. At the end of the three-year qualifying period, BPSO organizations become the designated BPSO sites provided they have met the criteria and have shown a commitment to continuing to work on developing a culture which is committed to enhancing the evidence-based nursing and decision-making practices (Cable-Williams et al., 2014; RNAO,

2017). The main premise is the commitment from the applying organizations to implement and evaluate RNAO BPGs in their institutions (Moreno-Casbas et al., 2019).

Context of the Study

Access and ethics approval was obtained to conduct the study in a Canadian undergraduate nursing school located in Qatar. The participating academic institution is the only provider of a Canadian-accredited bachelor's degree in nursing and previously offered a master's degrees as well. One of the goals of the participating academic institution's strategic plan is to deliver an evidence-based nursing program in English that prepares skilled nurses to meet the health and human resource needs of the Qatari population (UCQ nd). During the study, two undergraduate nursing programs were operational at the research site. The first program was the Bachelor of Nursing Regular Track (BNRT), a four-year degree program, enrolling students after high school. The second was the Post-Diploma Bachelor of Nursing (PDBN) program, which recruited diploma-prepared nurses from practice settings and was a three-year, part-time program. As of June 2022, the PDBN program was discontinued due to lack of funding. In the academic year 2021-2022, the participating academic institution had 424 students enrolled in its undergraduate nursing programs (335 in BNRT and 89 in PDBN). Demographic data from the institution's Board of Trustees report (UCQ, Nov 2021) indicated that 23 students in the BNRT program were local Qataris, and 175 were born and raised in Qatar but held other nationalities. Of the students born outside Qatar, 67 were from the Philippines and 48 from Sudan. The remaining students were from various countries, including Somalia, Pakistan, Iran, Jordon, Palestine, Bangladesh, Yemen and Other. In the PDBN program, most students were born outside Qatar, with 60 coming from India. This demographic data reflects the diversity in languages and cultures among the students. All Qatari nationals and students born in Qatar were

fluent in Arabic. All students, however, must pass an English language proficiency exam to register in the nursing program.

The participating academic institution applied for AcBPSO candidacy in early 2018 and achieved designation in 2021. “Academic BPSOs focus on evidence-based education, to impact instructor teaching, student learning, and patient/client outcomes” (RNAO, 2023, p.g.3). Since its candidacy as an AcBPSO in 2018, the participating academic institution has revised course objectives for all its undergraduate courses, created a BPG steering committee (later renamed the BPSO committee), and formed BPG instructor and student champions to advocate for BPG integration. The BPSO designation requires not only integration of RNAO BPGs across the curriculum in all courses taught during the three-year qualifying period, but also requires formal evaluation and research of the implementation process (MacDonald et al., 2018). The participating academic institution submits an annual report to RNAO summarizing BPG integration and its impact. However, no formal evaluation of the BPG integration in the curriculum has been conducted to date.

Evaluation of BPG Implementation

For service BPSOs, RNAO has a robust database system of outcome indicators called NQuIRE (Nursing Quality Indicators for Reporting and Evaluation) for organizations to effectively monitor and evaluate the impact of BPG (RNAO, 2015b). NQuIRE is an electronic reporting system that highlights the nursing quality improvement initiatives by providing comprehensive data on nursing care that has resulted in positive patient outcomes by comparing national and international data that have been entered into this software (VanDeVelde-Coke et al., 2012). AcBPSOs, on the other hand, do not use NQuIRE. They report using key indicators

such as influences of BPGs on curriculum, course objectives, content related to BPGs, and nursing students' knowledge and practice skills around BPGs (Bajnok et al., 2018).

There is a wealth of literature on the application and utilization of EBP including implementation of BPGs in clinical settings (e.g., Ewers et al., 2008; Higuchi et al., 2010; Ploeg et al., 2007; & Ritchie & Prentice, 2009). However, the utilization of RNAO BPGs in academic institutions has not been extensively studied (Estabrooks et al., 2007). Malik et al. (2016) also stated that, the integration of EBP in nursing education, specifically the teaching approaches, engagement of academics with EBP, and how it is linked with course objectives and students' learning outcomes has not been studied widely. Despite the success of the RNAO BPG integration in Canada and globally, little has been published about its integration in nursing education (Ewers et al., 2022; Malik et al., 2016).

Purpose and Rationale for the Study

This research enabled the collection of data beyond what the BPSO committee reported to RNAO annually. By understanding the experiences of nursing students and instructors with BPG implementation, the institution could be further guided on how best to improve the implementation of RNAO BPGs. This, in turn, could enhance the quality of teaching and learning by utilizing Evidence based teaching (EBT) practices, ultimately producing graduates with strong EBP knowledge and skills.

To date, few empirical studies have explored nursing instructors' and students' experiences of incorporating BPGs into undergraduate nursing curricula (Ewers et al., 2022; Mitchell et al., 2015; Ritchie et al., 2010). Moreover, there is also a scarcity of literature citing experiences of implementation of guidelines in the undergraduate nursing program (Gomez-Diaz et al., 2020). No formal evaluation has been conducted to understand the experiences of

instructors and students with BPGs implementation in Qatar. A formal evaluation of academic staff members' understandings and engagement with the RNAO BPGs, as well as their commitment to teaching EBP, is essential for successful integration of EBP into the nursing curriculum (Malik et al., 2016). The BPGs studied were developed in North America, which differs socioculturally from Qatar. This study was designed to explore the experiences of both students and instructors in a BPSO designated university in Qatar.

Cultural Historic Activity Theory (CHAT) Framework

A theoretical framework was used to guide this research in understanding the complexities involved in the RNAO BPGs' implementation process. Theory is defined as "a plausible or scientifically acceptable general principle or body of principles offered to explain phenomena" (Merriam-Webster.com). An axiological question is, what is the value of having a learning theory (Bleakley et al., 2011)? The researcher must be cognizant of the relationship between the theoretical frameworks and the research practices so connections can be made to their theoretical stance, methods, data collection, analysis, and interpretation of findings for them to link their research outcomes to the problem in a meaningful way (Postholm, 2008).

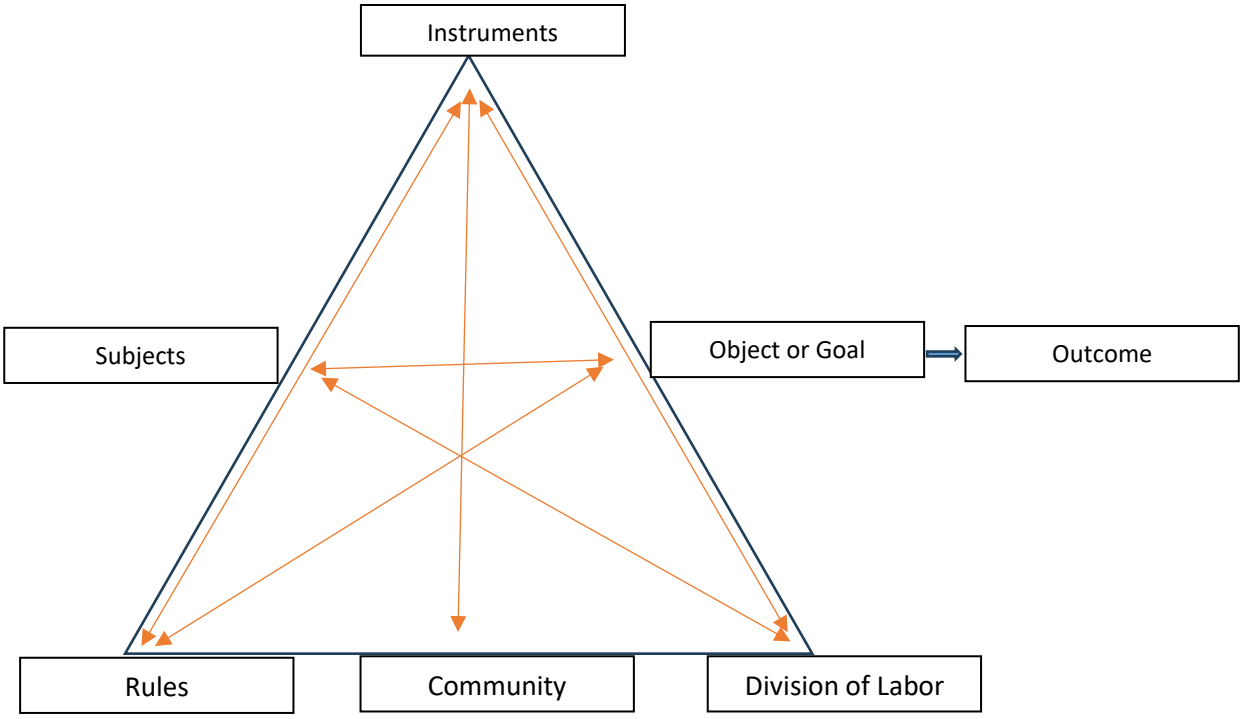
For this research, CHAT, as proposed by Yrjö Engeström (Engeström, 1987; Greig et al., 2012) was selected. CHAT was appropriate in understanding the implementation process of RNAO BPGs integration in the nursing curriculum as well as for the evaluation of this process. As shown in Figure 1.1, the activity system of the CHAT framework consists of five key elements: the *object* (the goal of the learning activity or an initiative), *subjects* (participants working towards the goal), *the instruments* (material or tools used to accomplish the work, task or an activity), the *rules* (guidelines for the work), the *community of practitioners* (the stakeholders or the partners that influence or work alongside the subjects), and *division of labor*

(which describes the expectations of the work and how it is distributed) (Engeström, 2014; Greig et al., 2012; Postholm, 2008).

The activity system does not work in a linear format; rather, it is an iterative process that attempts to focus on understanding the way things are or how they are the way they are; hence the activity system does not directly relate a policy to practice, instead, examination of the five essential elements provides a different insight into how various subjects work to achieve a mutually determined goal (Greig et al., 2012). The activity theory links back to the ideas of Vygotsky (1978), an influential cognitive psychologist who understood that learning is crucially a social process. The first-generation CHAT was around Vygotsky's ideas of mediation hat included subject, object, and mediating artifacts (Engeström, 1987, 2014). Vygotsky's ideas were further developed and inspired by the work of Leont'eve and a second-generation activity theory came about (Engeström, 1987, 2014). It included aspects of culture and society (Eilam, 2003; Stetsenko as cited in Roth & Lee, 2007) in which individual and collective actions (i.e. division of labor) could not be understood without their cultural and social interactions and vice versa (Engeström, 1987, 2014; Engeström et al., 2005). The third-generation activity theory which was inspired by the previous two generations included the aspect of community (Engeström, 1987, 2014) and it is used in my research to understand the activity of implementation of RNAO BPGs in the undergraduate curriculum.

Figure 1. 1

Cultural Historic Activity System (CHAT) Model



Note. Conceptual Model of an Activity System (Engeström, 1987).

For *subjects* to work towards a goal or achieve a common goal within an activity system, they can activate or represent many overlapping activity systems (Greig et al., 2012). The *object or the goal* can be shared by various team members (subjects) of the activity system (Bleakley et al., 2011). Similarly, the *object* in the CHAT is deliberately kept vague and several objects of an activity system can have a similar outcome but go through different approaches to accomplish that task, hence can have a different *division of labor* (Bleakley et al., 2011). When an overall goal (*object*) is reached, it is replaced by another goal towards which the activity is now focused on, and the *subjects* then start working towards the new goal. This way the activity system keeps working (Postholm, 2008).

Activity theory determines how learning occurs across people who share a common 'boundary object' or have a similar goal (Bleakley et al., 2011). It can also involve 'boundary-crossing', which requires other members or teams to understand each other's activities; an example of a boundary object can be a piece of equipment, a protocol, or an individual who works with all other teams (Bleakley et al., 2011).

Activity within the CHAT triangle is a complex and collective action and so is the process of learning (Roth & Lee, 2007). Learning is an activity in which the participants perform concrete actions that lead to fulfillment of established goals; however, interaction with the environment is key to reaching those outcomes (Roth & Lee, 2007). CHAT focuses on the environment which includes the culture and the context where the activity is taking place. In CHAT, the epistemological viewpoint is the interaction between the individuals and the environment is essential for knowledge creation (Postholm, 2008). Culture, language, and norms are part of the environment, subjects, community as well as rules that guide the interaction and the activity that is occurring at the time. The *instruments* depicted at the top of the CHAT triangle are the mediating devices, such as language or other symbols through which individuals interact with the environment and with each other; hence social interaction, culture, and history are important aspects of CHAT (Gee, 2008).

CHAT is discussed in detail in chapter two, explaining the interaction of various components of the activity system for the RNAO BPG implementation in the undergraduate nursing curriculum. For this research, the activity is the implementation of the RNAO BPGs in the undergraduate nursing program and to evaluate the implementation process, it is important to understand it from the perspectives of various actors or subjects, culture, context, and environment. CHAT was appropriate to not only understand the successes and challenges

encountered by the participants in the teaching and learning of RNAO BPGs, but CHAT also enabled the researcher to consider the historical and cultural contexts. It provided a framework through which to examine the interactions among the various components in this unique activity system where evidence-based BPGs are incorporated and scaffolded throughout the curriculum.

Research Problem

Studies show that nursing students find it difficult to understand how research findings can benefit nursing practice (Aglen, 2016; Fiset et al., 2017). The literature reviewed by Aglen (2016) on pedagogical strategies to teach EBP to nursing students revealed that many students were not motivated to gather, evaluate, and use relevant information while dealing with real patient problems. They expected to get the correct answers from their instructors, other experienced nurses, or even physicians. They also did not see themselves as knowledge creators and often found it hard to make a connection between research and practice. One of the reasons was the lack of role models; students seldom saw practicing nurses actively participating in, and using research in their clinical practice (Aglen, 2016). Neither did they encounter practicing nurses demonstrating accountability to EBP (Ciliska, 2005). Staff nurses or practicing nurses, on the other hand, often found it difficult to obtain evidence-based solutions to a problem due to various reasons including, inability to find the best evidence, lack of time to search for relevant information, and inadequate knowledge and skills to evaluate and critique the usefulness of multiple sources of evidence (Ciliska, 2005; Estabrooks et al., 2007). RNAO BPGs are developed to be evidenced-based tools that are easily accessible and free to download and use.

Since the guidelines were and are being developed and mostly implemented in context and culture, which are different from those of Qatar, it is important to understand how the

recipients in this study contextualize and utilize RNAO BPGs. It is also important to understand how they perceive RNAO BPGs as evidence-based tools.

Research Questions

The research aimed to understand the implementation of RNAO BPGs in the undergraduate nursing program by engaging with eleven instructors and 103 students. The main areas of examination were: 1) experiences of instructors with RNAO BPGs, and 2) experiences of students with RNAO BPGs.

The overarching research question was: How the integration of RNAO BPGs into an undergraduate nursing program in the state of Qatar promoted an evidence-based nursing curriculum, teaching practices, and student learning experiences?

Sub-questions targeting both nursing instructors' and students' perspectives of their experiences included:

(1) What were students' and instructors' levels of knowledge about, and attitude toward RNAO BPGs in the undergraduate nursing program?

(2) How did nursing students and instructors perceive RNAO BPGs as evidence-based tools?

(3) What strategies were utilized by the nursing instructors to integrate RNAO BPGs into their course design and teaching to raise students' awareness about the usefulness of RNAO BPGs?

(4) What were the facilitators and barriers in integrating RNAO BPGs into the course design, teaching practices, and student learning within the undergraduate nursing program in the state of Qatar?

Significance of the Study

The underlying assumption was that embracing and incorporating BPGs allows for the preparation of nursing students who would develop an appreciation and understanding for EBP when they graduated from nursing programs. However, as per the literature, it appears that students often find it difficult to understand the relevance of BPGs to their actual clinical practice (Aglen, 2016; Fiset et al., 2017). Additionally, prior research showed that nursing instructors might be resistant to adopt the RNAO BPGs and change their pedagogical approaches to be aligned with the guidelines (Ciliska, 2005). The curriculum design at the participating research site was built on an assumption that the inclusion of RNAO BPGs in the undergraduate curriculum would minimize the theory-practice gap and strengthen the knowledge of nursing students about best practices in nursing. There was a belief that it would also help students in transferring theoretical knowledge to clinical practice as they would be more aware of recent research, would seek to find answers, and would not follow old ways of nursing practice (RNAO, 2005). There is lack of research methodologies and evaluation tools to assess the teaching-learning process and education-related outcomes in nursing education to measure the implementation and impact of EBP in the nursing curriculum (Fiset et al., 2017). There is also a need to add to the nursing education literature not only the experience of students with the utilization of EBP but the perceptions of instructors and the practicing nurses at clinical sites as well (Fiset et al., 2017). A more robust literature might strengthen instructors' beliefs and mindsets about the importance of highlighting current evidence embedded in policies and guidelines in their habits of teaching.

The findings of this research will help refine the implementation strategies utilized by the participating academic institution as they continue to monitor the implementation process. The

examples of useful teaching and learning strategies shared by the participants will assist other instructors to strategically include them in their courses and include specific learning outcomes to obtain a meaningful outcome. The lack of evaluation methods to assess the impact of BPG integration as one of the outcomes of this study will allow for a more expanded study using practice settings to assess students' application of the learning about EBP. The perceptions shared by the participating instructors about being biased towards RNAO BPGs as a focus in the curriculum will help the participating academic institution to provide means of clarification and intentionally focus on other evidence-based tools in addition to RNAO BPGs.

This study adds to the body of nursing education and research by assisting nurse educators and researchers to replicate this research to the broader community. It can be replicated to compare RNAO BPG implementation process among different education institutions internationally and by expanding the scope of this research to include participants from practice settings to further understand the impact of RNAO BPG teaching on the quality of care provided by graduating nurses in improving systems and patient-related outcomes. This study will also add to the utilization of CHAT as a theoretical framework in understanding a phenomenon at a nursing organization.

The Researcher

I have over 10 years of teaching experience in undergraduate nursing programs. In my role as an associate dean academic and in my previous role as an undergraduate program coordinator at a branch campus of a Canadian nursing university, I have always been curious about the teaching, assessment, and learning practices with second language learners, especially in a Middle Eastern cultural context. I have been actively involved in scholarship activities related to assessment and learning in higher education. Additionally, I have worked on designing

engaging learning experiences through innovative pedagogical and assessment strategies for second or third language learners. Nursing students in the undergraduate nursing program face enormous challenges because of language barriers and the need to adapt themselves to a learning environment that employs adult learning principles. My research interest became stronger in understanding how learners and their instructors in the Middle Eastern context adopt the RNAO BPGs that are developed and used to prepare future nurses in a Western context. The topic of evaluating the integration of RNAO's BPGs into the local nursing curriculum was very close to my heart as a nursing educator cum researcher. Such a mixed methods research study will enable me to be more reflective in my teaching and practice. It also contributes to the improvement of future undergraduate nursing programs through an in-depth understanding of nursing students' and instructors' perceptions of RNAO's BPGs. Ultimately, I hope that my research will benefit the professional organizations that help prepare the next generations of nurses across cultures.

Definitions of Key Terms

Academic BPSOs: Academic BPSOs is a group of health and/or academic settings within a country, region, community, or particular specialty. They focus on evidence-based nursing education and the integration of BPGs into the curriculum to impact student learning and patient outcomes.

Best Practice Guidelines: "Best practice guidelines are systematically developed statements based on best available evidence to assist nurses, other health care providers, and patients make decisions about patient care" (RNAO, 2005, p. 92).

Best Practice Spotlight Organization (BPSOs): BPSOs are selected organizations that develop a long-term partnership with RNAO to plan, implement, and evaluate multiple guidelines (RNAO, 2005).

BPSO Committee: This is an internal committee of the participating educational institution to spearhead the implementation of RNAO BPGs in the undergraduate nursing curriculum. This committee is responsible for educating nursing instructors, preparing BPG champions, and reporting on the utilizing of BPGs to RNAO.

CHAT (Cultural-Historical Activity Theory): According to activity theory, learning of the collective activity system and learning of the individual are intertwined. One cannot be understood without analysing the other. Collective activity system is mediated by cultural artifacts (tools and signs). Learning is mediated by instruments, rules and division of labor and is an object-oriented activity (Engeström et. al., 2005, p. 32).

Evidence-based Practice: Is the process of evidence-based nursing practice that involves, asking a clinical question, searching the literature for relevant research, critically appraising what has been found, and evaluating the change in practice (Ciliska, 2005, p. 345).

Evidence-based Teaching: Evidence-based teaching (EBT) involves making decisions that incorporate the best available evidence regarding learning, teaching strategies, assessment, and other related areas, along with the expertise and judgment of the teacher and the preferences and goals of the learners. Successful EBT relies on the commitment and competence of educators, as well as the resources needed to integrate evidence-based information into their practices. (Saaranen & Vauhkonen, 2021).

Undergraduate Nursing Program: Undergraduate nursing program is a program that would provide a degree in nursing after a student completes all required courses successfully.

Summary and Outline of the Dissertation

This research dissertation is organized into six chapters. The first chapter provided background and contextual information about the emergence of this study. It also discussed the

anticipated contribution of this study to the existing body of literature on the BPG implementation in academic settings. The relevance of CHAT as the theoretical framework in understanding the RNAO BPG implementation process was described as well. Chapter one also described research problem, research questions, and the significance of this study in the Qatar context along with the definition of key terms used in this dissertation.

Chapter two includes a literature review on implementing EBP, the role and significance of RNAO BPGs as evidence-based tools, and facilitators and barriers to the implementation of EBP in nursing education and practice. A brief discussion of research gaps is also presented in the literature review chapter along with a discussion of CHAT, and its utilization in understanding the research questions.

Chapter three describes the mixed-method study design selected for this research, various data collection methods, integrated data analysis methods, and legitimization issues in mixed-methods research. Important ethical considerations that were attended to in the conduct of this study are discussed in detail.

Chapter four presents the qualitative and quantitative findings followed by a joint display to integrate the findings. This is aligned with the research questions and analyzes the findings as they are presented.

Chapter five includes a discussion of the findings and my analysis of the similarities and differences of the findings in view of the existing research.

Chapter six, the final chapter, includes the conclusions drawn from the research and makes recommendations for curriculum redesign, teaching practices, clinical practice, policy, RNAO, and future research.

CHAPTER TWO: LITERATURE REVIEW

Although the focus of this mixed methods research (MMR) was to understand the implementation of RNAO BPGs in the undergraduate nursing program in Qatar, this literature review goes beyond the education settings to include the impact of BPG implementation in the clinical practice settings as well. This is because, for our students to translate knowledge into practice, they need to understand the impact of BPGs on patient care outcomes when they go to the practice sites for their clinical practice courses.

Since RNAO BPGs come under the umbrella term of EBP as described in the previous chapter, this literature review first explored EBP in broad terms, followed by a description of the use of RNAO BPGs as a method by which EBP could be incorporated in educational institutions and in clinical practice settings. The chapter provides a discussion of EBP along with the facilitators and barriers of implementing EBP within nursing education. Then, it focuses on the role of RNAO BPGs in nursing education while also exploring most helpful teaching and learning strategies in incorporating RNAO BPGs in nursing education and practice. Finally, the chapter concludes with a discussion of how CHAT was used to understand the implementation of RNAO BPGs at the participating academic institution.

The Search Strategy

The keywords used for this literature review included, “evidence-based practice” and ‘Nurs* education” and “stud* experience; “evidence-based practice” and “nurs* education” and “instru* experience”; “best practice guidelines” and registered nurses association of Ontario” and “nurs* educ* and “undergrad* program”; “barriers” and “facilitators” and implementation of evidence-based practice”, “barriers” and “facilitators” and “implementation of best practice guidelines” . The search engines included: CINAHL, Medline, Academic Search Complete, and

Google Scholar, which are relevant search engines for nursing literature. The initial literature search was limited to articles from scholarly publications, including peer-reviewed journal articles, published between 2005-2018. The abstracts of all the articles that were retrieved using these terms were reviewed to select the ones that were close to the research questions and purpose. Other articles were selected using a snowball technique by reviewing the reference list of the articles. Another search was conducted close to the final dissertation submission time to include other recent articles which were relevant to the topic.

Implementing Evidence-based Practice in Nursing Education

There was a wide range of similarities and differences in the findings identified by researchers in implementing EBP in education and practice. Research was conducted in a variety of settings and populations to understand the facilitators and barriers to implementing EBP from the instructors' and students' perspectives (Aglen, 2016; Fiset et al., 2017; Malik et al., 2016; Mthiyane & Habed, 2018).

Instructors' Perspectives of Facilitators and Barriers to Implementing EBP

The literature on instructors' perspectives of the facilitators and barriers to EBP revealed three main categories: (1) readiness and preparedness of instructors, (2) personal motivation, and (3) availability of time, resources, and support.

The main facilitator of the implementation of EBP in nursing education was related to the readiness and preparedness of the instructors. A scoping review by Fiset et al. (2017) of 37 studies to learn about the utilization of EBP in the clinical practice settings described the facilitators and barriers to EBP from the students' and instructors' perspectives. From the instructors' perspectives, instructors' skills, confidence, and positive attitude towards EBP were the most common facilitators to promote EBP in the clinical setting. The barriers from the

instructors' perspectives to integrate EBP in clinical courses included lack of power of students to influence changes in clinical practice, lack of resources for faculty training, and weak infrastructure for EBP in the academic settings (Fiset et al., 2017). Similar problems were identified in the study by Malik et al. (2016) in Australia. On the other hand, lack of preparedness, abilities, and competencies of instructors in the teaching of EBP were identified as a major challenge in the implementation of EBP curriculum (Fiset et al., 2017).

Lack of understanding by instructors about the meaning of EBP was mentioned by some authors as a factor contributing to inadequate teaching of EBP. Malik et al.'s (2016) study in Australian universities and colleges with 23 instructors teaching in an undergraduate nursing program found that it was challenging to understand and teach, and to ensure that students understood the concept of EBP well. There were also some misconceptions among the faculty about the meaning of EBP where some of them assumed that teaching students to critique a research article was like preparing them for being evidence-based practitioners (Malik et al., 2016). Ryan (2016) mentioned that in addition to the instructor's knowledge and skills, inadequate knowledge and skills of registered nurses or preceptors in the clinical setting to provide sufficient support and encouragement to students in EBP implementation was also a barrier in EBP in clinical settings.

Besides, the commitment of faculty to utilize EBP in the implementation of EBP curriculum (Malik et al., 2016), taking a course or participation in educational activities related to EBP (Ryan, 2016), and having an interest in a particular area of research and participation in scientific activities (Fiset et al., 2017) were identified as personal motivating factors that fostered EBP among instructors.

The instructors teaching in an undergraduate nursing program highlighted lack of time, resources, workload, availability of extensive information to scan through, and lack of organizational supports as major barriers for them as well for students in the implementation of EBP in the beginning phases of the implementation of EBP curricula (Malik et al., 2016).

Students' Perspectives of Facilitators and Barriers to Implementing EBP

The literature that focused on the students' perspectives revealed that the major facilitators and barriers related to the utilization of research and evidence in clinical practice were linked with: (1) knowledge and motivation, (2) relevance of research to practice, (3) role modelling, and (4) teaching of EBP (Aglen, 2016; Fiset et al., 2017; Ryan, 2016; Song et al., 2021).

Students mentioned having increased knowledge about EBP, having a positive attitude and interest in selected research areas, support from other professional, colleagues, and nursing managers in the clinical setting, and having access to high quality research in easy, user-friendly format in the language of students' choice as major facilitators for utilizing EBP in clinical practice. The most common barriers identified from the scoping review by Fiset et al. (2017) from the students' perspective were lack of knowledge, staff, and managers resistance to the use of research findings by students in the clinical setting, lack of time, and difficulty navigating evidence-based information due to lack of understanding the research findings.

Availability and knowledge of using technology was another aspect that adds to the complexities related to educating students around EBP. Mthiyane and Habed (2018) undertook a study in South Africa to understand the experiences of nurse educators in the implementation of EBP in teaching and learning. Students' lack of computer skills and lack of resources and access to EBP material as technological limitations were further exacerbated by the prevalence of

traditional teaching approaches by the instructors which focused more on mastery of skills, hindered the development of critical thinking skills, and application of EBP.

Students also struggled when there were barriers to the application of EBP learning from classroom to clinical settings. Lack of opportunity in the clinical setting for EBP despite having positive attitude was mentioned by Ryan (2016) as barriers to EBP in the clinical setting. Students felt more supported in the university or classroom setting than the clinical setting with regards to utilization of research and EBP skills in an integrated literature review done by Ryan (2016) to identify undergraduate nursing students' attitudes towards the use of research and EBP. In the practice area, students found it hard to understand how research findings could benefit nursing practice (Aglen, 2016; Fiset et al., 2017, Ryan, 2016; Song et al., 2021). Lack of power to influence clinical circumstances (Aglen, 2016), too much information, and accessing research reports were other hindrances in students' applying research to practice (Fiset et al., 2017). Some of the reasons behind these challenges were identified as, students expected to get the correct answer from their instructors, from nurses, and from the physicians; they did not see themselves as active participants in the clinical placements in the creation of knowledge and evidence (Aglen, 2016).

Lack of role models or the positive experience of witnessing application of EBP in clinical setting was a major barrier for students in the application of EBP. Students did not see other nurses around them who were actively involved in using research in their clinical practice. Students also did not have opportunities to work with or observe the role of nurse researchers and nurse educators who were in a position to demonstrate good role modeling by utilizing current research in clinical settings (Aglen, 2016; Ryan, 2016).

Another reason for nursing students' inability to make connections between evidence-based theory and practice was how information literacy was taught to bachelor students. Students need support and ongoing education to completely understand and articulate the application of EBP. The students do not yet have the intellectual maturity to apply evidence in different situations in comparison to more mature practicing nurses (Aglen, 2016; Ryan, 2016). They need gradual scaffolding of this learning (Ryan, 2016).

Major facilitators and barriers to incorporate and teach EBP for both the instructors and students included readiness, preparedness, knowledge of the instructors about EBP, availability of the resources and supportive infrastructure to utilize EBP, and positive role modeling in education and practice settings. Students also needed to see a connection between theory and practice, which was possible if there was a continuity of teaching and application of EBP from education institutions to practice settings.

Engagement of Instructors with EBT Practices

Nursing instructors embraced EBP by participating in research, sharing research findings, and by incorporating new evidence in their teaching and learning practice, hence demonstrated good role modeling for students and other faculty (Malik et al., 2016). A descriptive study by Kalb et al. (2015) to explore EBT practices of faculty across all graduate and undergraduate education in nursing programs, responses from 551 participants suggested that faculty and administrators included several sources of EBPs in their teaching. The EBT practices included use of academic, accreditation, and professional standards. They also incorporated research appraisal and research findings in their teaching. The respondents used student course evaluations of faculty as evidence to change practice. Respondents also mentioned using

evidence to revise courses, design curriculum, develop course content but did not use evidence to select evaluation methods.

Strategies instructors used to stay current and learn about new information included, using Joanna Briggs institute resources on EBP, becoming members of professional organizations, incorporating current evidence in teaching, linking it to practice, getting involved in hospitals' quality assurance and other committees (Malik et al., 2016). In Kalb et al.'s (2015) study, some respondents indicated that the availability of mentors, colleagues, and librarians who used and supported EBT practices was influential in promoting engagement of instructors with EBT practices. Other strategies that were most useful in the teaching and learning of EBP included journal clubs, clinical rounds, case discussions, EBP projects, presence of champions or specialists in the clinical area, and improvement of the partnership between academic and clinical placement (Khan & Cooarasamy as cited in Fiset et al., 2017).

Interventions that Facilitate Learning of Evidence-based Practice

The underlying premise of EBP is the improvement of students' knowledge, skills, and attitudes, which will eventually improve patient-related outcomes. An important aspect that influences outcomes is the quality of education about EBP. A systematic review by Wong et al. (2013) comprising eight studies (five with medical students, one with nursing students, one with physiotherapy students, and one with physiotherapy and occupational therapy students combined) was conducted to determine the magnitude of change (effect size) in outcomes (knowledge, attitudes, behaviors, skills, and confidence) following EBP training in entry-level health professional students. The authors summarized that various EBP interventions were utilized in the studies and most studies employed a mix of lecture-based and clinically integrated EBP training. The duration of training ranged from four days to one and a half years, and the

effect size ranged from 0.33 to 5.42, indicating moderate to large effects. Considerable and varied improvements were found in students' EBP knowledge, skills, and confidence after training. The change in the students' attitude toward EBP was small and there was also a variable change in EBP behaviors. In this study, no patient-related outcomes were measured. Wong et al. (2013) concluded that limited improvement in students' attitudes towards EBP can be due to the theoretical nature of EBP training which lacked strategies to engage or develop students' attitudes and sympathy towards EBP (Wong et al., 2013). Since the training period ranged from four days to one and a half years for different disciplines, the duration of the training could also have an impact on the attitude and behavior of the students towards EBP.

The way research and EBP are taught in educational settings has an impact on what the students can do when it comes to the application of knowledge. An argument in the literature posits that undergraduate students are not cognitively able to understand the relevance of EBP to actual nursing practice (Aglen, 2016; Ryan, 2016). However, Aglen (2016) suggested that if the approach to teaching EBP changes from an emphasis on retrieval of information, evaluation, and summary of the research findings to that of providing training on how to implement change in clinical settings, then the cognitive limitation of the application of knowledge will be reduced.

A cross-sectional study by Vasques et al. (2023) revealed the results of curriculum adjustments made at an undergraduate nursing program in Columbia to include the evidence-based training course as part of the curriculum. The study compared nursing students' EBP (attitude, knowledge, and skills) who were part of one of the three curriculum types. Curriculum 1 had no research training, curriculum 2 had research training, and curriculum 3 had EBP training. There was no statistically significant difference between the collective scores of students in each curriculum group. However, students in curriculum 3 scored significantly higher

in the knowledge competency for EBP. The authors emphasized the importance of working on effective pedagogical strategies to strengthen the implementation of EBT practices.

Reid et al. (2017) examined the introduction of a core module (i.e., Evidence Based Nursing 1) developed and implemented in an undergraduate nursing program. The authors had conducted a pilot pre and post-test study utilizing validated tools (EBP Beliefs Scale and EBP Implementation Scale). They found statistically significant results before and after implementing the core module alongside three six-week clinical placements throughout year one. These results suggested that the undergraduate education of EBP needs to be revised. Aglen's (2016) research concurs with recommendation that emphasis should be given in guiding nursing students towards the role of knowledge creators and using discretion while applying knowledge by collecting evidence from all relevant sources of evidence, and not just from research findings. If students are not taught evidence-based nursing processes, they will not be able to continue to practice which is based on evidence (Ciliska, 2005).

Another study that investigated a course that explicitly integrated theory and practical application of EBP was by Mena-Tudela (2018). It was a quasi-experimental study among second-year nursing students in an undergraduate nursing program in Spain. The educational intervention to teach about EBP consisted of two hours of theory, two hours of online session and assignments during clinical practice. Students were asked to select at least eight critical incidents in their practice which was related to what they had learned in theory and document the critical incident information followed by development of a PICO (problem/population, intervention, comparison, outcome) question on that incident and then try to resolve the issue through a literature search. The study evaluated the effectiveness of the integrated EBP theory with practice components on students' knowledge, skills, and attitude towards EBP. The study

revealed statistically significant differences in students' knowledge and attitude after participating in the program but not in skills that were measured across three time points, that is, baseline, intermediate, and final. The authors concluded that this approach enhanced evidence-based competence among second-year nursing students. However, measures should be taken to strengthen the educational approach during clinical practice for the students by looking at factors like clinical tutors, use of technology, and utilization of research in the clinical sites.

The teaching of EBP should be done in practical settings or via simulations and case studies for it to be more meaningful and relevant to the students rather than in traditional classroom settings using didactic approaches (Ryan, 2016). Aglen (2016) emphasized the importance of ensuring that the guidelines are current, with strategies for monitoring that align with best practices for policy reviews.

Among some strategies that were useful in the implementation of EBT practices in clinical courses, project work in collaboration with the clinical placement site was of great benefit. As described by Kruzewski et al. (2009), students in two clinical courses developed an EBP project in collaboration with the clinical nursing staff of their assigned clinical placement with the support and guidance from their nursing faculty. Each student group then prepared a poster presentation to share their findings and practice recommendations with the nursing staff. Instructors shared a high level of satisfaction with students learning of knowledge and skills for EBP and highly rated their collaborative teaching experiences with the clinical staff. The nursing staff felt more connected with the students' clinical learning experiences and appreciated the work that students did around the topics that were of interest to the staff as well as for students. Students reported an increased level of satisfaction with this shared project where they felt that it was meaningful and allowed them to connect classroom learning into clinical practice. Students

also reported increased ability in the application of all stages of EBP. However, they rated themselves lower in their ability to influence change in existing practice.

The synthesis of this literature points to the importance of instructors to stay motivated and engaged with EBP, EBT practices, and that they have the knowledge and skill in helping students to make connection between theory and practice by utilizing technology like simulations in addition to actual clinical settings.

RNAO BPG Implementation in Nursing Education and Healthcare Settings

Based on my review of the literature, I was not able to find many studies that evaluated the implementation of RNAO BPGs in education institutions as compared to healthcare settings among practicing nurses. Most of the research has been done in hospitals and other health care settings. In health care organizations, application of BPGs has shown improvement in patient and organizational level outcomes which could be assessed in the clinical setting by measuring certain indicators such as infection rates, patient satisfaction, self-reported quality of life, and other BPG specific indicators (e.g., pain management, smoking cessation, breastfeeding rates, and wound healing). They could also be reported on the NQuIRE databases as described earlier for RNAO to compare national and international indicators (RNAO, 2015b). However, the impact of BPG implementation in education settings requires a different set of indicators and outcome measures. For example, measurable outcomes for the impact of BPGs on students' knowledge, attitudes, and skills about RNAO BPGs throughout the education experience as well as in the clinical practice after graduation.

Impact of RNAO BPG Implementation in Healthcare Settings

The overall aim of RNAO PBGs is to improve the quality of care that nurses and other health care professionals provide to the public. Specifically, the RNAO BPG program aims to:

(1) encourage consistency in high-quality care which is rooted in best available knowledge, (2) discourage interventions that have little effect and/or cause harm, (3) transfer research to practice, (4) promote the nursing knowledge base, (5) assist clinicians and patients with health care decision-making, (6) inform organizational and policy decision-making, (7) improve practice, system, and health care outcomes, (8) identify research gaps, and (9) reduce costs through the achievement of better outcomes (RNAO, 2005). The design and implementation of clinical practice guidelines are practical ways to apply research to practice. This holds true for students and fully qualified staff (Ryan, 2016).

Davies et al. (2008) have described the experience of real-time implementation of six nursing BPGs (asthma, breastfeeding, delirium-dementia-depression, foot complications in diabetes, smoking cessation, and venous leg ulcers) during 2002–2004 in 11 health care organizations. It was a pre- and post-study. Implementation included the provision of a toolkit and training session to the clinical resource nurses at each hospital describing strategies for implementation of clinical practice guidelines, educational sessions provided by the clinical resource nurses (CRNs) for nurses and other health care providers, and monthly problem-solving teleconferences with all CRNs to discuss ongoing facilitators and barriers to guideline implementation. Statistically significant improvements were found in more than 50% of indicators for asthma (53%), diabetes foot care (83%), and venous leg ulcers (60%) post-implementation. No statistically significant difference was found in more than 80% of the indicators for three guidelines (breastfeeding, delirium, depression and dementia, and smoking cessation). Implementation strategies that were utilized by the organizations that demonstrated significant improvement in more than 50% of their indicators utilized hands-on skill practice sessions for nurses and the development of new patient education materials (Davies et al., 2008).

RNAO BPG Implementation in Education Settings

One BPG study conducted in an educational setting was a study by Ritchie et al. (2010). This study was conducted in a Canadian university on the implementation of smoking cessation BPGs among third-year nursing students. The students were tasked to provide health promotion education about smoking cessation in their assigned clinical units. It was identified that students were not well prepared to talk about smoking cessation as their knowledge about this health promotion aspect was not sufficient. Nursing students struggled to transfer their BPG smoking cessation knowledge into their patient care practices despite participating in a three-hour training in a workshop about smoking cessation from experts in the field. Clinical instructors reported that students lacked confidence in talking about smoking cessation with patients. They speculated that this was because aspects of health promotion were not introduced early on in their training, whereas more emphasis was given to the teaching of skills in the first two years of their training. It can be concluded that implementation of recommendations from RNAO BPGs requires a pre-requisite knowledge about health promotion and patient teaching which should be taken into consideration while planning such learning activities for students. Ewer et al. (2022) also described strategies that they had utilized while integrating select BPGs in their courses at Nipissing University's undergraduate nursing program. They had included five RNAO BPGs and provided examples of their use in two of their courses. The strategies to include BPGs in the curriculum included, intentionally emphasizing guidelines throughout the course, including evidence-based tools and RNAO guidelines as part of assignments, posting links to the guidelines for students, including the guideline summary in lectures, performing gap analysis, and critical reflection of guidelines related to case studies and patient care scenarios where the care was lacking or exemplary.

RNAO has periodically undertaken the evaluation of the uptake of guideline implementations at education institutions. Edwards et al. (2005) provided an overview of evaluation that was done in Ontario to assess how the implementation of RNAO BPG was done; however, the authors only described the process of evaluation with challenges and lessons learned in the evaluation process, no results were shared in the review. The authors described how their BPG evaluation efforts were hampered due to lack of resources and time constraints. Their data collection was constrained by the short time assigned for the evaluation. Moreover, there was lack of existing indicators to evaluate BPG implementation in the clinical practice areas. The evaluation team developed the indicators and matched them to specific RNAO BPG recommendations which could be used by organizations to evaluate the impacts of BPG implementation at their facilities (Edwards et al., 2005).

Facilitators and Barriers to Implementing RNAO BPGs

In a study by Daves et al. (2008), they found that the key facilitators in the implementation of RNAO BPG in the practice settings (i.e., acute care teaching hospital, community hospitals, chronic care hospital, mental health teaching hospital, home visiting agencies, and regional public health unit) included education sessions, support from the champions and managers, the involvement of multiple stakeholders, teamwork and collaboration, RNAO support, specific resources, availability of supplies, and availability of equipment (Davies et al., 2008). Key challenges in the same settings included lack of time, workload pressure and staff resistance, short patient stays, lack of support from physicians, and lack of documentation that described change in outcomes. Various reasons were reported by the authors for the facilities to not been able to fully implement the recommendations provided by the guidelines. These included lack of personnel, cost, discrepancy among other guidelines, the population mentioned

in the guidelines did not match the actual population of the organization being evaluated, and others including community-related factors which were out of control of the hospital personnel (Davies et al., 2008).

Ploeg et al. (2007) undertook a study to understand the perceptions of administrators (n=57), staff (n=58), and project leaders (n=8) about the factors that influenced the implementation of seven nursing best practice guidelines in twenty-two organizations across Ontario. They aimed to understand the personal, organizational, and environmental factors that could influence the implementation of the guidelines. Facilitators to guideline implementation included learning about guidelines in a group setting; positive attitudes of staff (a belief that implementation of recommendations will improve patient-related outcomes), support from leadership in providing staffing and resources and in embedding guidelines in policies and vision of the organization. Ploeg et al. (2007) reported that the availability of "champions" who were dedicated individuals that provided leadership and support to staff during the change process and teamwork and collaboration were key factors. Also, the research found that support from the professional association in terms of financial support and inter-organization collaboration were a part of the successful implementation of BPGs (Ploeg et al., 2007).

At the academic settings, similar challenges were identified by the instructors for not being able to effectively teach about BPGs. Ewer et.al. (2022) described the integration of five BPGs in their courses at Nipissing University's undergraduate nursing program. They shared that in their experience of integration of guidelines, students focused more on the content that was to be included in exams and tests. They elaborated that heavy reliance on graded assessments for summative purposes hindered their attempt at creating a culture where students engage in learning for the purpose of learning and improving safe care (formative assessment) rather than

for the purpose of being successful in exams. Ewers et.al. (2022) also faced the challenge of not having enough time in the class to have a fulsome discussion due to teaching of other competing priority content in each class time and timeframe.

Reasons posited in the literature with regards to the inability of nursing students to apply BPGs included, generally nurses were not valued as equal contributors when it came to providing health promotion teaching and nurses themselves did not take a leadership role when it came to providing patient teaching which did not provide positive role modeling for students who worked alongside nurses in their clinical practice experience (Ritchie et al., 2010). In the same study, students also felt that despite having a good understanding of and appreciation of the usefulness of RNAO guidelines on smoking cessation, they were not prepared to provide the health promotion teaching. This was because of lack of their counselling abilities and lack of confidence in talking to an older patient about quitting smoking since they believed that their age, being too young was a limitation in providing health promotion teaching (Ritchi et al., 2010). Higuchi et al. (2006) point out, it is important that the teaching of clinical practice guidelines is emphasized in practice settings after being introduced in the theory classes for students to integrate evidence as a normal part of their practice; currently the performance of nursing tasks and learning of skills is given more priority than the integration of scholarly evidence in the clinical practice. Also, students and instructors found it time consuming and considered it a low priority over the completion of assigned nursing tasks (Higuchi et al., 2006).

Higuchi et al. (2006) also discussed the implementation and evaluation of a faculty development project with an overall aim of creating a culture where BPGs were implemented and valued in clinical practice throughout the undergraduate nursing program in a university in Ottawa. The recommendations from this report included the importance of project planning,

faculty needs' assessment, and workshops. The evaluation of the initiative suggests that it is important to have professional development activities for the instructors working at elbow with students in practice. Both the clinical instructors and students reported increased understanding and utilization of clinical practice guidelines in the practice setting after the clinical instructors went through professional development training about best practice guidelines implementation (Higuchi et al., 2006).

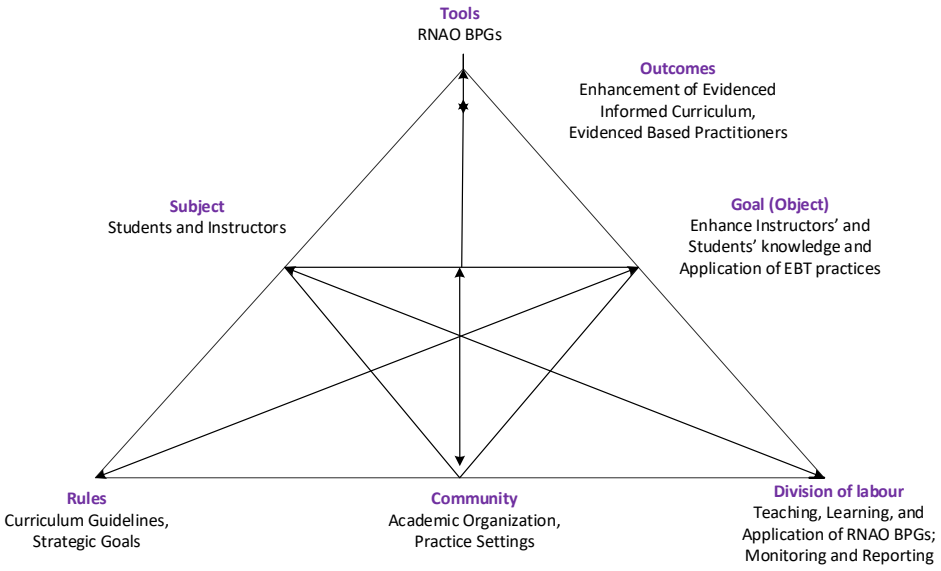
Based on the discussion above, the facilitators and barriers to effective utilization and implementation of RNAO BPGs during students' educational practicum are, (or lack of) education for clinical instructors that support their ability to link between theory to application, infrastructure which enables or (discourages) nurses and nursing students to apply the guidelines, and level of empowerment and confidence (or lack of same) modelled by nurses in the clinical setting that influence patient care. There is also a need to conduct more research in the academic settings to understand how BPGs are taught, and where there is gap in bringing theory teaching to its practical application.

Theoretical Framework: Cultural Historic Activity Theory (CHAT)

As discussed in chapter one, CHAT was used in this research due to its ability to help the researcher understand the implementation of the RNAO BPGs in an undergraduate nursing program in a unique context and culture, that is, in the state of Qatar where this research was conducted.

Figure 2. 1

CHAT for Implementation



Note. RNAO BPG-Registered Nurse Association of Ontario, best practice guidelines; EBT-evidence-based teaching

Figure 2.1 depicts the implementation process that was initiated in February 2018 when the participating academic organization became the candidate for AcBPSO. Although the implementation team did not utilize CHAT when they introduced BPGs in the curriculum, it is useful to understand and analyze the implementation process through the CHAT triangle, to more clearly see the various elements impacting or interacting within the implementation system. The *subjects* were the instructors and the students in the undergraduate nursing program. The *instruments* included RNAO BPGs. The *rules* referred to the directions given by the undergraduate curriculum committee and the deliverables as expected from BPSO. The *community* was the participating academic institution and the practice partners where students

undertake their clinical practice. The *division of labor* referred to the teaching and learning activities, curriculum review, and the monitoring and reporting carried out by the BPSO committee. The *object* was the goal of enhancing instructors' and students' knowledge and application of EBT practices by integrating RNAO BPGs in the nursing curriculum to reach the *outcome* of enhancing an evidence-informed curriculum, which in turn leads to the development of graduates who appreciate and are knowledgeable about EBP. As per the CHAT philosophy, these components or elements are not bound to their shells. Rather, they interact and communicate with each other. They are expected to influence each other and there could be several other influences as each part goes through interactions within their surroundings, context, environment, and culture. Any influence on the goal or outcome is a result of various interactions within each activity system. The implementation process informed the basis to explore the impact of RNAO BPGs on the promotion of evidence-based nursing curriculum, teaching practices, and student learning experiences.

Summary

Understanding the factors and experiences in the implementation of EBP in nursing education particularly with guidelines implementation is crucial to understand to plan effective strategies that are sustainable in the implementation process (Ploeg et al., 2007). This chapter described the facilitators and barriers to implementing EBP in classroom and in the clinical settings from both the students as well as from instructors' perspective and shed some light on the challenges and supports that allowed for the integration of RNAO BPG guidelines in the curriculum. Attention needs to be given to factors that can impact guideline implementation at individual, organizational, and social levels as they are all interconnected at times (Ploeg et al., 2007). Education settings should not only focus on strengthening the teaching and

implementation of EBP in the classroom but in view of the challenges that students and instructors face in the clinical settings when they initiate the implementation of EBP, effective partnerships with clinical partners are necessary so they can be involved in professional development activities designed for educators for the continuous development of the EBP culture (Higuchi et al., 2006). More research needs to be done in understanding the integration of RNAO BPG in the curriculum as the current body of literature mostly describes the integration of select RNAO Guidelines as compared to the implementation of RNAO BPG program as a whole.

CHAPTER THREE: RESEARCH DESIGN

This research was designed as an MMR study to explore and investigate the BPG implementation at an academic institution. For this research, a purely quantitative or a purely qualitative study would not have answered the specific research questions. Being pragmatic, I believe that the research methods should align with the questions under consideration and the phenomenon that a researcher strives to explore. Choosing an MMR design allowed me to integrate qualitative and quantitative data collection methods to optimally understand the research problem and to answer my specific research questions.

As outlined in the previous two chapters, the purpose of this research was to explore nursing instructors' and students' experiences with teaching and learning of the RNAO BPGs in the undergraduate nursing program at an academic institution. The intent was to explore the overall experience along with the facilitators and barriers to teaching and learning of RNAO BPGs and investigate effective teaching and learning strategies that enhance the application of BPGs among nursing students. The theoretical framework that guided this research was CHAT. It not only helped understand the BPG implementation as it is, but it also facilitated the exploration of the impact of implementation process at the participating academic institution with its successes and challenges. Using CHAT as a synthesis tool, the findings offer insights to the broader education community and other academic institutions in implementing a new initiative in general, and RNAO BPGs in particular.

In this chapter, I first discuss the paradigmatic orientation describing my worldview. I then discuss the rationale for choosing MMR as a methodology for the current study. This is followed by details of the research design overview, data collection and sampling methods, types of data that were collected, phases of data collection, development of instruments, and the

reasons for choosing the population and purposeful sampling for the two data collection methods in this research. After this, I provide a discussion on MMR data analysis and synthesis, followed by my explanation on legitimation, reliability, and validity of the instruments, issues with trustworthiness and limitations and delimitations in this MMR.

Paradigmatic Orientation

A researcher's worldview or paradigm influences how the research is conducted and analyzed (Creswell & Creswell, 2018). For a researcher, the worldview arises from various factors such as researcher's past experiences, the discipline to which they belong, and their mentor's inclinations (Creswell & Creswell, 2018). Here I outlined the four predominant and commonly discussed worldviews or paradigms to provide the context for the worldview that informed this doctoral research.

First, is positivism, which later evolved into postpositivism (Onwuegbuzie, Johnson, & Collins, 2009). The positivism/postpositivism worldview is sometimes called the scientific method where the researcher tries to identify the cause of an outcome by using quantitative methods including objective measures such as numbers and the study of behaviors of individuals (Creswell & Creswell, 2018). Positivism also includes testing a theory or hypothesis and for that, being objective is extremely important to establishing standards of reliability and validity of research methods and tools (Creswell & Creswell, 2018).

Second, is the constructivist or the interpretivist worldview, which in contrast to positivism disrupts beliefs about objective and subjective knowledge. It is most commonly linked with qualitative research, where researchers aim to understand participants' subjective views of the situation, or the phenomenon being studied rather than exploring direct causal relationships (Creswell & Creswell, 2018). The constructivist paradigm assumes that in a given

study, multiple realities or viewpoints exist, and all are valid even if they are contradictory to each other (Onwuegbuzie, Bustamante, & Collins, 2009).

A third common paradigm is the transformative worldview that came about during the 1980s and 1990s to include voices of marginalized people and talk about the issues of power, discrimination, ethnicity, gender, sexual orientation, and oppression (Creswell & Creswell, 2018). The transformists believe that the research inquiry should include a political agenda to bring reform and help the participants come out of their oppressed or marginalized situations (Creswell & Creswell, 2018). Transformative epistemologies further disrupt ideas about truth, bias, objectivity, personal knowledge, reflexivity, and so forth.

The fourth and final worldview, I have chosen to discuss is the pragmatist view, which does not align with any one type of epistemological tradition but, rather is the researchers' choice to select research methods that best suit their needs and purposes of the research (Creswell & Creswell, 2018). "A pragmatist would reject the incompatibility thesis that qualitative and quantitative research are fully incompatible and cannot, in any useful way, be used in combination in social or behavioral research" (Onwuegbuzie, Johnson, & Collins, 2009, p. 128). Just like constructivists, pragmatists also believe that social, historical, cultural, and political contexts have a role to play in conducting research (Creswell & Creswell, 2018). According to Creswell and Creswell (2018), "Pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis" (p. 48).

Given the discussion above about the worldviews or paradigms, it is clear to me that the researcher must carefully identify which worldview best aligns with their research problem or questions, which approach is best suited to answer the research questions, and which paradigm is

close to the researchers' personal values and beliefs. My worldview aligns with a method that best answers the research questions or addresses the research problem at hand. It is flexible, realistic, and practical. I do believe that the answers vary from person to person, from context to context, and from time to time. I am a pragmatist whose aim is to find the answers by considering multiple paradigms. Conducted as a piece of pragmatist research, my study allowed me to understand the phenomenon in-depth by having a close interaction with the participants.

Alignment of Theoretical Framework with Pragmatism

The pragmatists' worldview also aligns well with CHAT in which the relationship between various components of the activity system is important to understand. Within the CHAT triangle, as discussed in chapter two, there are several relationships between various components as described in the CHAT framework (Gee, 2008). By utilizing multiple data collection methods including questionnaires, interviews, and document analysis, this MMR approach helped me understand the context, culture, and the environment of the study setting and its participants. The context and culture of participating organization in the current study are different from the originating place of BPGs. Being pragmatic, I am open to understanding how other environmental factors including language, culture, norms, and practices impact the uptake of BPGs. Both quantitative and qualitative perspectives helped me in understanding the experiences of instructors' and students' experiences with the implementation of RNAO BPGs.

Research Methodology

The MMR design includes a combination of quantitative and qualitative research which tends to strengthen the research by complementing the strengths and neutralizing the weaknesses of both research approaches (Creswell & Creswell, 2018). The choice of MMR aligns well with the pragmatic worldview where I believe that diversity in data collection will provide a more

complete understanding of the research questions, which would not otherwise be answered by utilizing a single qualitative or a quantitative approach on its own (Creswell & Creswell, 2018; Onwuegbuzie & Leech, 2005). Pragmatists strongly advocate that purpose drives the selection of research methods (Creamer, 2016). Creswell and Creswell (2018) suggested that MMR is used when a quantitative or a qualitative study by itself is not sufficient to completely understand the phenomenon, or when the researchers wish to generalize the findings to the entire population, or when there is need to obtain a detailed overview of the phenomenon under study which has not been adequately researched in the past.

Why Mixed Methods is Appropriate for this Study

As per Greene et al. (1989), there are five broad purposes of conducting MMR, for triangulation so that multiple methods counteract the biases and strengthen the validity of results, for complimenting the data being collected from both the qualitative and quantitative research methods to have a deep understanding of the phenomenon, for developing the research by using the results of one method to develop other methods, for initiating which helps in refining the research questions, and for expanding the range of breath of the research study by using multiple data collection methods.

I intended to understand the experiences of instructors and students with the implementation of RNAO BPGs. For this research, I believe that experiences of the participants were based on various factors including their own beliefs, experiences, and the cultural and environmental contexts in which they lived and worked. Based on this assumption a constructivist approach seemed appropriate. However, there was value to add some quantitative measures like questionnaires and to study documents to quantify which RNAO PBGs were used in courses, or how instructors and students rated their preferences on how they were being

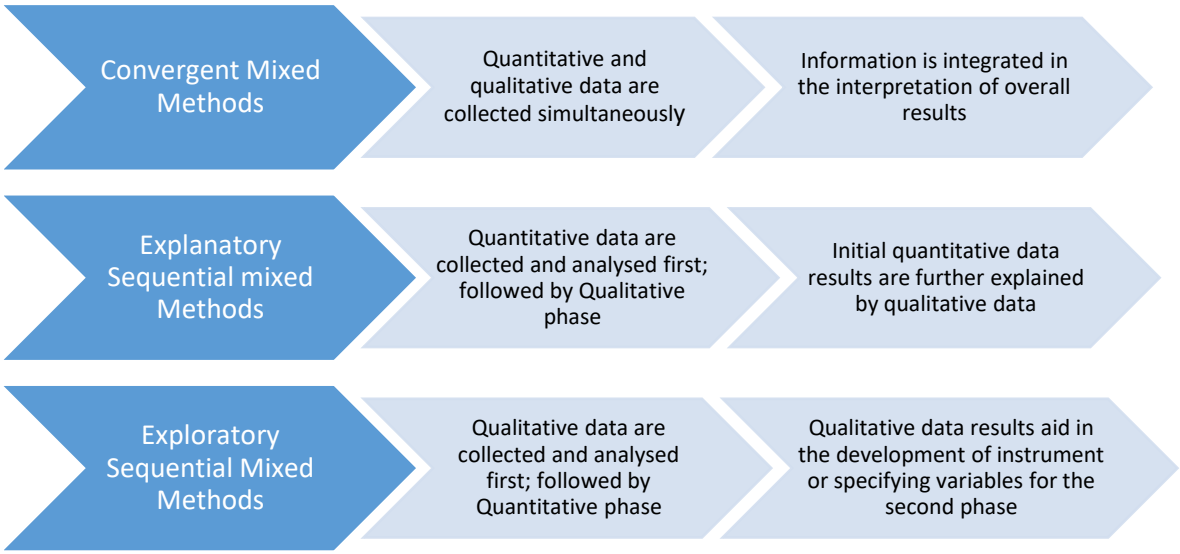
taught. Quantitative methods also allowed for many participants to share their views about the utilization of RNAO PBGs as EBP tools in the undergraduate nursing program. Hence, I chose an MMR design with quantitative and qualitative measures. Mixed methods data collection and analysis allowed me to triangulate, to understand the strengths and weaknesses of knowledge generated by both metrics and languages; it increased the depth of the knowledge about the implementation of BPGs in an undergraduate nursing curriculum in the state of Qatar, whose culture and demography is different from North America where the BPGs were developed and first implemented. Although the question about ethnic background was not included in the questionnaire, report from the institutions' Board of Trustees report (UCQ, Nov 2021) verified that during the Winter 2022 term, enrollment included students from various ethnic backgrounds including, local Qatari students, students from Sudan, Somalia, Pakistan, Iran, Jordan, Palestine, Bangladesh, Yemen, Philippines and there were many students who were born in Qatar as indicated in chapter one.

About Mixed Methods

Within the MMR design, there are three main models that researchers can use as discussed by Creswell and Creswell (2018). They are convergent mixed methods, explanatory sequential mixed methods, and exploratory sequential mixed methods. These methods are further explained in Figure 3.1. For my research, convergent MMR design was used with the aim of mixing at both the sampling as well as at the data analysis phase. Both qualitative and quantitative data were collected simultaneously.

Figure 3. 1

Types of Mixed Method Research Designs



Note. Content is from Creswell and Creswell (2018).

One issue with MMR is to ensure that the concepts being studied are similar for both data collection methods (Creswell & Creswell, 2018). Another issue is the sample size for both data collection processes (Creswell & Creswell, 2018). For my convergence MMR, the constructs or concepts were the same in both forms of data collection, however, the sample sizes were different. Every attempt was made to include the sample of qualitative participants in the quantitative sample as while comparing the results of databases, similarities of the participants are important for a better comparison of outcomes (Creswell & Creswell, 2018).

Study Timeline

The project timeline is explained in Table 3.1. An ethics application was completed during winter 2021 for submission to the University of Calgary Research Ethics Board as well as to the country's Ethics Approval Body. While the ethics approval was in process, the instrument was refined using other information related to the courses being offered and the number of

students being finalized from the student and enrollment services department. The Qualtrics platform was piloted, and questionnaires were created.

Table 3. 1

Project timeline

Dec 2021	Pilot testing of instrument to establish the validity of the questionnaires
Dec 2021-Jan 2022	Designed the templates for joint data collection, analysis, and reporting. Finalized the instruments on Qualtrics
Jan to Apr 2022	Participant recruitment and data collection
Feb to Apr 2022	Completion of interviews Simultaneous data entry and transcription of interviews
June & Aug 2022	Member checking of interview transcripts
Dec-Jan 2023	Completed data entry
Jan 2023-June Dec 2023	Completed data analysis Writing of dissertation chapters seeking feedback from the supervisor
Jan to August 2024	Finalized dissertation to be sent to the supervisor and committee members Revised dissertation based on supervisory committee members' feedback
Sep/Oct 2024	Final Defense Draft manuscript for Journals

Data Collection Methods

With the approval of both the review boards, the University of Calgary institutional review board and Qatar's institutional review board, department of clinical research through the Primnay health Corporation, instructors and students of the Winter 2022 term were approached to participate in this study. Three data collections methods were utilized, instructor and student questionnaires, semi-structured interviews, and document analysis. This section describes how each of these methods unfolded and outlines the instrument design validity.

Questionnaires

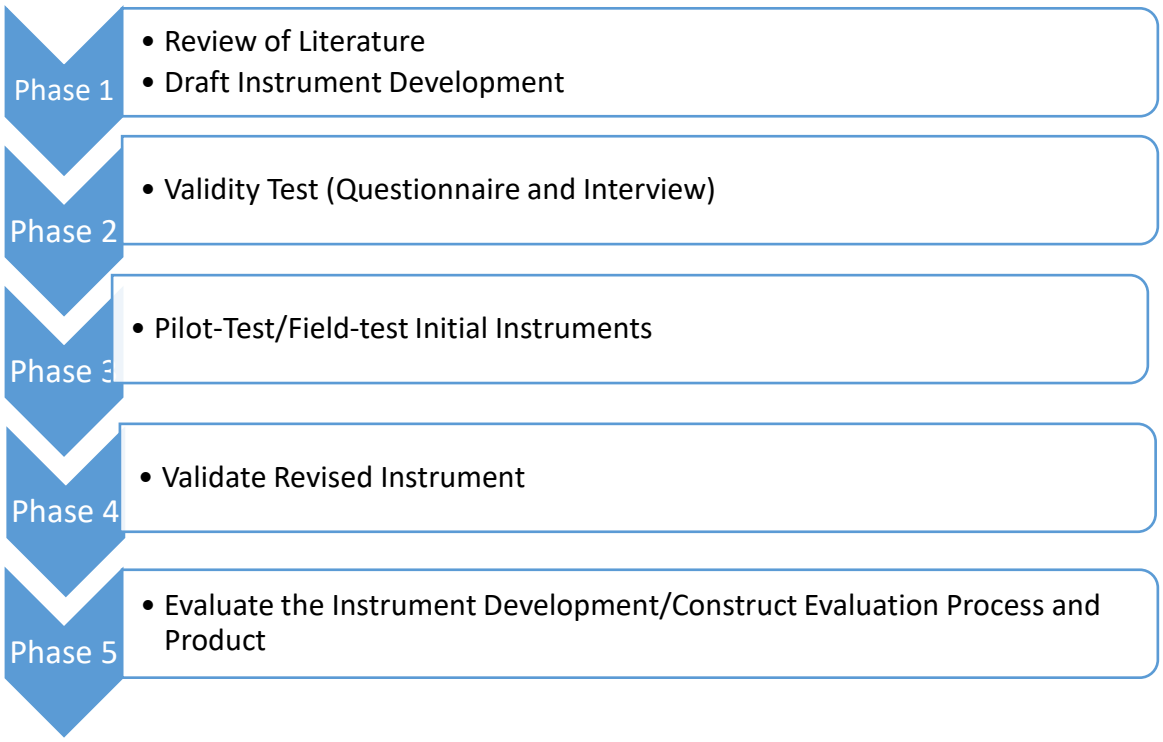
Two questionnaires were designed and developed, one for students and one for instructors. A five-point Likert scale from was used (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree) as the response format. A questionnaire design helped in achieving the description of trends, attitudes, and opinions of participants quantitatively; and assisted with establishing associations among the variables of a sample derived from a population (Creswell & Creswell, 2018). Using a questionnaire as a data collection method also allowed for some degree of generalization to a broad and representative sample (Harrell & Bradley, 2009; Smith, 1997). Both the questionnaires were administered using the Qualtrics software platform. Qualtrics platform is secure and provides data security as the data at rest is encrypted, and the servers are protected by web application firewalls. It also employs an intrusion detection system to prevent access by unauthorized users.

Design and Validity of Questionnaire and Interview Instruments

The modified version of the meta-framework for instrument development and design, Instrument Development and Construct Validation (IDCV) as suggested by Onwuegbuzie, Johnson, and Collins (2009) was used to design the questionnaire instruments for this study. This modified IDVC instrument design framework is presented in Figure 3.2.

Figure 3. 2

Modified Instrument Development and Construct Validation Framework



The modified IDVC instrument design framework was an iterative process that allowed me to develop the instruments that would help answer the research questions and would be easy to analyze and draw conclusions from both the quantitative and qualitative data collection methods. In phase one, the content of the questionnaires was informed by my literature review. The next step was to access the questionnaires used in studies like mine. A literature search also helped in determining the content of the instrument. However, when instruments are merged or modified, the original validity and reliability are lost, and it requires the researcher to re-establish the validity and reliability of the new instrument during the data analysis phase (Creswell & Creswell, 2018).

Phases two and three included the establishment of the content validity of the instruments by sending the drafts to the BPSO committee as well as to the language experts to seek feedback

on the content and language of questionnaire items in terms of their representations of the construct of interest and their cultural sensitivity in the context of Qatar. To enhance the process of receiving good feedback from the pilot-testing of the questionnaire, as suggested by Onwuegbuzie, Johnson, and Collins (2009) to include an open-ended question after each item for the individuals (students and instructors) who agreed to comment on the quality of each question and provide suggestions, open ended questions were included in the pilot-testing tool. The questionnaires were also pilot tested on instructors and students. This pilot test helped establish the content validity of the score and improved the format, scale, and language of the instrument (Onwuegbuzie, Johnson, & Collins, 2009). In addition, the internal consistency reliability of each subscale of the questionnaires was analyzed using the Cronbach alpha coefficients (α) in IBM SPSS version 28.

Phases four and five comprised revising the questionnaire based on the feedback from the pilot testing. Additionally, reflection on this process and feedback received from the supervisor allowed for revising the instruments before finalizing them.

The student questionnaire (see Appendix B) was divided into three sections followed by five open-ended questions. The first section collected demographic information about the participants, such as age, gender, year of study, current courses being enrolled in, type of admission (direct entry or through the Foundations program), and a snapshot of their awareness about RNAO BPGs. The second section sought information about their knowledge and attitude towards RNAO BPGs by exploring methods being utilized by the student in current courses about BPG utilization with the use of nine questions to be answered on a Likert scale. The third section sought information about the facilitators and barriers to learning about RNAO BPG. This section included 10 questions requiring responses on the Likert scale. The five open-ended

questions were about participants views on the facilitators and barriers of using RNAO BPGs in course work and in clinical practice.

The instructor questionnaire (see Appendix C) also had three sections followed by five open ended questions. The first section collected demographic information about the participants, such as courses taught in the previous term, courses currently teaching, number of years teaching at the participating institution, previous experience with teaching BPGs, and membership of BPSO committee. The second section sought information about instructors' knowledge and attitude towards RNAO BPGs by including 12 questions to be answered using the Likert scale. The third section sought information regarding the facilitators and barriers to teaching RNAO BPG. This section had six questions requiring responses on the Likert scale. The open-ended questions sought information about the strategies that were most successful in integrating RNAO BPGs into courses and invited them to expand on the facilitators and barriers.

A research administrative officer from the research department at the participating academic organization was requested to assist with the recruitment of the participant. Students' and instructors' university emails were used by the research administrator to recruit participants. The university emails were secure and accurate and were made available to the recruiter through the Student and Enrollment Services department. However, the response rate while using on-line questionnaire methods emerged as an issue. Low response rates are a common problem in quantitative research. Two reminder emails were sent by the research administrator to help increase the rate of participant recruitment.

Interviews

Semi-structured one-on-one interviews were conducted with students and instructors to gain detailed understanding of the research questions. Some interviews were in-person, and some

were conducted on-line on zoom based on participants' preferences. The interviews Interview protocols were developed for asking questions and recording answers (see Appendix D-student interview guide and Appendix E-instructor interview guide). All interviews were audiotaped but handwritten notes were also taken in case the audiotape equipment failed (Creswell, 2015). With semi-structured interviews, the agenda is pre-set, however, as per the guidance about interviews in the literature, I followed the interviewees' thoughts and asked them to elaborate (Bolderston, 2012). Briggs (2001) cautioned the interviewer to be mindful of certain aspects, which do come into play when a researcher uses the interview as a data collection method. My position as a nursing leader in the school being studied and being an active member of the teaching faculty could have generated power differentials. Measures taken to overcome the power differentials included recruitment emails to students and instructors were sent by an administrative assistant. Also, at the time of consent, it was made explicit to all the participants about the purpose of the research and that their participation or non-participation had nothing to do with their grades or an expectation to participate.

The interviews with the students continued until the data saturation occurred (Miles et al., 2019). Data saturation refers to the point when gathering more data does not provide any more insight or add to the creation of any more themes (Creswell & Creswell, 2018). Initially I had eight students who volunteered but there were no volunteers from year-three of the BNRT program and no one volunteered from either years of the PDBN Program. Another call for recruitment was sent by the research administrator. Until this time, I continued to conduct the interviews. With the second recruitment call, I was able to get another five students and one of them was from year-three. However, no PDBN student volunteered to participate.

For the instructor interviews, after the first call for recruitment was sent out, I received interest to participate from six instructors who were mostly teaching theory courses. However, I also wanted to include instructors who were teaching lab and clinical courses. With the second call, I was able to get three additional instructor volunteers and once interviews were completed, I had enough data and perspectives of the instructors across all course types (theory, lab, and clinical). If I had additional volunteers, I would have continued interviews because the instructors had unique perspectives on certain aspects like 'how they had used the BPGs'. But for some questions like the 'perceptions of RNAO BPGs as evidence-based tools' and 'facilitators and barriers to utilizing RNAO BPGs', no additional information was being shared by the instructor participants.

Document Analysis

Document analysis in this research was a strategy to obtain quantitative and qualitative data from the two documents that were selected to be included for analysis. The documents included, course outlines and instructors' course reports of all courses taught in the Fall 2021 term. Course outlines are finalized in the beginning of the term and the instructors follow the plans as mentioned in course outlines which are also approved by the curriculum committee for that term. At the end of the teaching term, instructors are required to reflect on their course and submit a course report to the curriculum committee. This report is helpful for the members of the curriculum committee to review the recommendations to improve the course for future offerings. The report also informs other instructors who would be teaching the same course in future about the successes, challenges, successful and challenging teaching, learning and assessment strategies, and the suggestions for the future offering of the courses. Documents from the Winter 2022 term were not included in the review because the course reports were not available at the

time of data collection. The course reports are submitted after the course is completed and then they are compiled by the administrative staff which usually takes a couple of weeks after course completion. Course outlines and course reports were reviewed by me to obtain information about: (1) RNAO PBGs included in undergraduate courses, (2) BPGs taught explicitly and included in an assignment, and (3) instructors' comments on their integration of BPGs into courses. A log was maintained, and relevant information was included in the log.

The advantages of this data source included: it was easily accessible data because all course outlines must include RNAO BPGs in their course outlines, and the instructors were mandated by the curriculum committee to comment on the use of BPGs in their course reports. The document analysis was helpful to probe for missing or unclear information during the instructor interviews. However, some course reports were not detailed enough to extract relevant data from those. As per Creswell and Cresswell (2018), documents can be accessed at a time convenient for the researcher and since they are written pieces of evidence, it saves time and expense of transcribing. If the documents were incomplete (Creswell & Creswell, 2018) or did not contain the information the researcher is looking for, then their use was limited for the research. The missing information from the document analysis was a limitation in my research as for some course outlines and course reports, it was not specified as to how the BPGs were incorporated and evaluated.

Sampling Frame

The sampling process in the MMR is still an underdeveloped area and lacks the availability of published work in this area (Onwuegbuzie & Collins, 2017). The quality of inferences or conclusions that are derived from the MMR is dependent on the meaning-making process that the researcher goes through, which in turn is highly dependent on the quality of

sampling design that the researcher undertakes (Onwuegbuzie & Collins, 2017). Regardless of how well the researcher has planned and designed the research, questions, and data collection methods, if sampling design is not given proper attention, the results will lack legitimization (Onwuegbuzie & Collins, 2017). The following section includes a discussion on sampling frame, population, and reasons for the selected sampling frame.

To select a sample for the study, the researcher first must identify the sampling design, population-wide sampling, or cluster sampling. Cluster sampling is considered when the researcher does not have the information or names of the participants in a population; in that case, the researcher might identify a cluster or a group and then samples within that group (Creswell & Creswell, 2018). With my study, the population was identifiable. The participating academic institution had 424 students and 30 nursing instructors at the time of data collection. Population sampling was considered with the assumption that not everyone would choose to participate. Obtaining both quantitative and qualitative data from the same number of participants was not feasible. The purpose of obtaining qualitative data was to obtain extensive and in-depth information (Creswell & Creswell, 2018); hence a smaller sample size would serve the purpose of collecting rich and extensive data. In contrast, a large number of participants are needed for quantitative methods to achieve meaningful statistical results (Creswell & Creswell, 2018).

For the student interviews, purposeful clustering sampling was done. Purposeful sampling involves the selection of representative participants from a group to include a reasonable cross-section of people or population (Bolderton, 2012). These selected individuals might have knowledge and insight into the study who could provide in-depth information about the topic of study (Bolderston, 2012). Instructors were asked to nominate students from their

classes who could be a good fit for the research. The nominated students were approached by the research administrator to invite them to participate in the research. Those students who consented were included in the interviews. For instructor interviews all instructors were sent an email by the research administrator inviting them to participate in the study.

As per Onwuegbuzie and Collins (2017), the sampling method for MMR is even more complex because the researcher must choose the sampling design for both the qualitative as well as quantitative components of the study. The participants in my study who participated in the interviews had also completed the questionnaires. Hence, the purpose of obtaining a smaller sample for the interviews among the large sample for the quantitative data was accomplished.

Research Site

The research site was a university offering undergraduate nursing program in the state of Qatar. The research site had agreed to become the BPSO site for RNAO by agreeing to incorporate BPGs into all relevant courses in the undergraduate program.

Participants

The population for my study was the total number of students and instructors in the undergraduate nursing program at the time of data collection (424 students and 30 nursing instructors during Winter 2022 term). For the quantitative phase, the entire student and instructor population was invited to participate. For the student interviews, purposeful clustering sampling was done. Since the number of instructor teaching in the nursing program during Winter 2022 term was only 30, for instructor interviews all instructors were sent an email by the research administrator inviting them to participate in the study.

After receiving the information and the link to Qualtrics questionnaire, 146 students completed the questionnaire. The questionnaires with missing data or incomplete responses were

removed from the final analysis. The number of student participants included in the final analysis of the questionnaire was 103. Thirteen students also participated in the one-on-one, semi-structured interviews. Among those, five students were from year 1, four from year 2, one from year 3, and three students were from year 4 of the undergraduate nursing program. There were no participants for the interviews from the PDBN program. The one-on-one, semi-structured interviews lasted approximately 20-40 minutes. Each student participant signed the consent form and selected a pseudonym that has been used for reporting the qualitative findings in the research study.

Eighteen instructors began the questionnaire. Only 11 questionnaires were completed. Nine instructors participated in the semi structured interviews. Each interview lasted about 30–40 minutes. It was hoped that comparable data would be available since the student and instructor participants who were interviewed were all part of the quantitative data collection phase. Hence the subjects were similar in both methods.

Data Analysis and Synthesis

This section outlines how the data was processed including any software packages that were used to support the data processing processes. It also includes the description of my approach to developing themes or other key components that emerged from the data.

One of the considerations that I had to constantly be mindful of, was to ensure that I thoroughly review the data to extract meaningful and adequate results from the various data collection methods in this research which comprised numbers and narratives. This could be a challenge in MMR as per Collins et al. (2012). In MMR, data could be analyzed using crossover or non-crossover mixed analysis. The cross-over data analysis method is a more integrated approach to combine qualitative and quantitative data analysis at various times during the data

analysis phase. However, to integrate the data, both the qualitative and the quantitative findings were weighed equally with the assumption that they both add value to inform the results.

Since the purpose of choosing MMR for my research was to triangulate the findings, complement the strengths and weaknesses of each method, and expand the depth and breadth of the research (Greene et.al, 1989), crossover analysis was chosen. In contrast to other MMR approaches (sequentially conducting analysis of the qual and quant; called sequential mixed) or parallel mixed analysis, the crossover technique allowed for a more-in-depth analysis of the data and to achieve its three purposes. Crossover analysis represents the highest form of combining qualitative and quantitative data analysis techniques and involves using either a qualitative analysis to analyze or understand the quantitative or vice versa (Onwuegbuzie, Johnson, & Collins, 2009). For my research, the joint display of data presenting the crossover analysis helped me in understanding and analysing the findings of the quantitative and qualitative data more in depth. It also verified the findings from the questionnaire and the interviews.

In addition to selecting a data analysis method, it was important to develop a strategy to deal with contradictory results, where there is divergence or a difference in the themes from the quantitative and qualitative analysis. In this research, there were no major divergences in the data or the themes from the quantitative and qualitative analysis. The qualitative analysis explained the responses from the questionnaires and contributed to additional themes. Ideally, follow-up steps should be taken to explain or understand the differences (Creswell, 2015). For my research, this was not required.

Quantitative Data Processing and Analysis

Inferential statistics to make internal or statistical generalization can be used by pragmatic mixed methods researchers (Frels & Onwuegbuzie, 2013). The two questionnaire

instruments were analyzed using descriptive statistical analysis (i.e. percentage) of the participants. Due to the small sample size (N =103), a comparison of first-year students to other years was not feasible. In this study, descriptive statistics were used. As per Onwuegbuzie, Johnson, and Collins (2009), the descriptive and inferential statistics can be used to enhance the validity and reliability of both quantitative and qualitative studies in terms of dependability, transferability, and authenticity in addition to providing a detailed description of the data numerically.

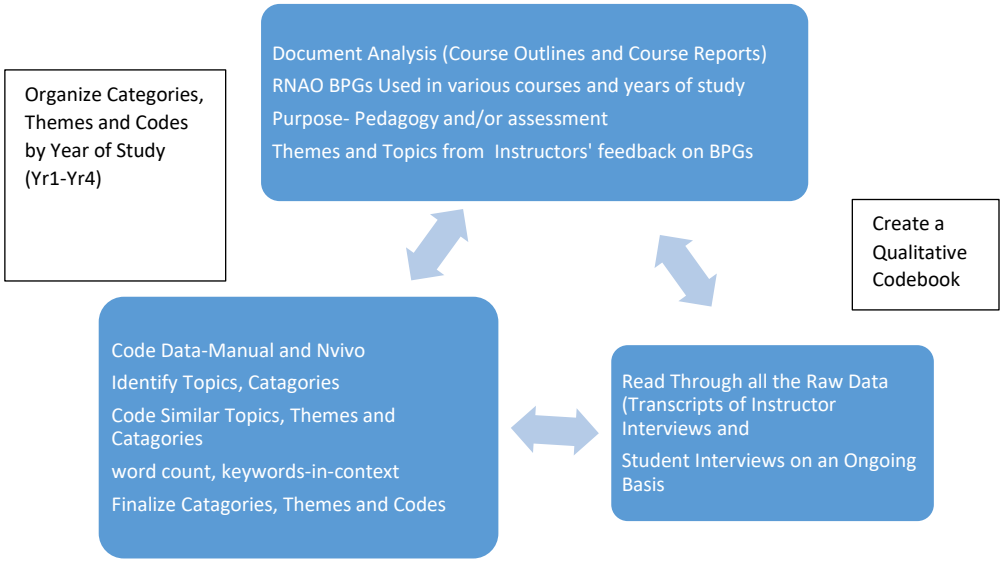
Qualitative Data Processing and Analysis

The interviews were transcribed and analyzed on an on-going basis. Manual coding of interviews as well as NVivo software was used for the analysis of interview data. The advantage of using NVivo for qualitative data analysis allowed for storing, organizing, and locating text associated with specific codes, making connections with other codes, and importing and exporting data to spreadsheets, etc. (Creswell & Creswell 2018). Despite these advantages, I also went through all the transcripts and notes line by line to understand the data, language, and tone, and to independently assess codes and themes. As per Miles and Huberman (1984), qualitative data can produce logical causality and fruitful explanation but not necessarily replicable. They further elaborate that the researcher should be confident that the conclusions are reasonable and another researcher interpreting the same data will have conclusions in the same general 'truth space'. I wanted to ensure that I read the scripts and code them in a way that finding of similar codes and ideas could be categorized into themes for sharing of findings and discussions (Braun & Clarke, 2006).

For this research, a more general procedure in analyzing the data was used. The process in Figure 3.3 describes a general approach to analyzing the interviews and documents that comprise qualitative data collection tools.

Figure 3. 3

Qualitative Data Analysis Procedure



Integrated Data Analysis/Mixed Data Analysis

Applying crossover analysis required me to simultaneously examine multiple pieces of evidence from interviews, document analysis, and questionnaires (Onwuegbuzie, Johnson, & Collins, 2009). The goal was to gain an overall understanding of the how each data component informed understanding about the integration of BPGs in both theory and practice and could offer a different perspective on it (Smith, 1997).

One of the reasons for performing a crossover analysis as explained by Frels and Onwuegbuzie (2013) is to visually present the quantitative and qualitative data in a single display, which is called a joint display of data using a table or a graph (Creswell, 2015; Frels &

Onwuegbuzie, 2013). This visualization allows for jointly presenting both types of data as one single chart and graph for easy interpretation of findings (Creswell & Creswell, 2018). The mixed analysis allowed me to view the data and extract meaningful insights from switching back and forth from qualitative to quantitative data, called the 'Gestalt switch' (Kuhn, 1962 as cited in Onwuegbuzie, Johnson, & Collins, 2009) allowing for meta-inferences by reviewing all qualitative and quantitative data together (Frels & Onwuegbuzie, 2013). Side by side display is also useful for the reporting of the results. Crossover analysis can also be used to merge different data sources to create new or consolidated data sets (Frels & Onwuegbuzie, 2013).

For my research, I chose to visually present the data in a joint display and the table of joint display will be presented in the 'findings' chapter. In an MMR, "the power of the study must lie in the integration of data" (Smith, 1997, p. 80). I found this approach very useful in understanding the themes and this also allowed me to validate the qualitative or the quantitative findings.

Validity and Reliability

There are four major types of validity in quantitative research, statistical conclusion validity, internal validity, construct validity, and external validity (Shadish et al., 2001 as cited in Onwuegbuzie & Johnson, 2006). In qualitative research, the term validity has been replaced by trustworthiness. The criteria to establish validity in qualitative research include credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985 as cited in Onwuegbuzie & Johnson 2006).

In MMR, both the quantitative validity (construct) as well as the qualitative validity (triangulation) should be taken into consideration (Creswell, 2015). Unequal sample sizes, use of different variables for qualitative and quantitative data collection may show incomparable results

which may not be easy to merge, and lack of follow up of results which diverge from the actual purpose all pose threats to validity in convergent MMR study (Creswell, 2015).

Triangulation

Triangulation refers to the designed use of multiple methods, with offsetting or counteracting biases, in investigations of the same phenomenon to strengthen the validity of inquiry results. Triangulation involves using more than one method to collect data on the same topic. This approach is a way of assuring the validity of research using a variety of methods to collect data on the same topic, which involves different types of samples as well as methods of data collection. The core premise of triangulation as a design strategy is that all methods have inherent biases and limitations, so the use of only one method to assess a given phenomenon will inevitably yield biased and limited results (Greene et al., 1989).

The MMR data in this study were collected using questionnaires, interviews, and document analysis. The data triangulation was done by examining the themes and topics identified by converging different sources of data which aided in establishing the validity of the findings (Creswell, 2015). This is one of the strengths of MMR studies.

Reliability and Validity of the Interviews

In my research, the following approaches were taken to ensure the quality and validity/credibility of the interview data: multiple methods of data collection were included to check for the accuracy of interviewees', probing was done to include questions from general to specific, member checking of transcriptions was performed, and through the detailed descriptions included in this dissertation, the research process was made transparent and accessible with the inclusion of interview guide in the appendices (Roulston, 2010). All student and instructor interviews were audiotaped and transcribed verbatim. Member checking is

important to ensure the credibility of interview data (Merriam, 1998). As such, the interview transcripts were sent to all participants for member checking between June and August 2022. All the feedback received from the participants after member checking was incorporated before data coding and analysis.

Reliability and Validity of the Questionnaires

With regards to the quantitative questionnaires, pilot testing of the instrument was done, and exploratory factor analysis was performed to determine the construct validity of the instruments.

Pilot Testing of Questionnaire Instruments

Both the student and instructor questionnaires were pilot tested in December 2021. Four students and three instructors completed the online questionnaires. Their feedback was used to help refine the questions. For example, the terminology in the demographic information section was changed from BPG steering committee to BPSO working group. The sequence of the questions was adjusted, and the question stems were modified for clarity. In final versions of the questionnaires, the terms such as" "mostly" and "always" were removed to allow more responses if the participants wanted to respond instances that occurred 'sometimes' while using the Likert scale. Also, a couple of leading questions and negatively phrased questions were modified. A drop-down menu was added to include the commonly used BPGs in the curriculum so the instructors and students could select the exact names of the BPGs. For the student questionnaire there was a question about including BPGs in the assignment which was modified to make it a two-fold question that included asking students about their practices of including BPGs in the assignments when required and including BPGs even if it was not required in the rubric. A short

version of the consent form was added at the beginning of the questionnaire as suggested by students rather than having two separate documents (see Appendix B and Appendix C).

Psychometric Properties of Student Questionnaire Data

To ensure the quality of the questionnaire data, Cronbach's Alpha was computed using IBM SPSS version 28. The Cronbach's Alpha Coefficients for students' questionnaire were 0.95 and 0.92 for the knowledge and attitude items, respectively (see Table 3.2). These coefficients indicate excellent internal consistency reliability. According to Nunnally (1978), a value of 0.70 or above is acceptable for exploratory research. For questionnaire development, Cronbach's Alpha value needs to fall between 0.90 and 0.95. For the instructor questionnaire data, Cronbach's Alpha Coefficients were not computed due to a small sample size.

Table 3. 2

Reliability Statistics

Cronbach's Alpha	Number of Items
.945	13
.913	6

Legitimization

Legitimization refers to obtaining reliable findings from the qualitative and quantitative methods included in the MMR (Collins et al., 2012). In MMR, the strengths and weaknesses of both quantitative and qualitative methods are combined to complement each other; however, the validity of findings is difficult to establish which causes an issue of integration (Onwuegbuzie & Johnson 2006). For this study, a measure to maintain legitimization was to include a crossover analysis which allowed for the presentation of findings from both the qualitative and quantitative sources, strengthening the validity of the results.

Onwuegbuzie and Johnson (2006) have described nine legitimation types for MMR, which are: (1) sample integration legitimization, (2) insider-outsider legitimization, (3) weakness minimization legitimization, (4) sequential legitimization, (5) conversion legitimization, (6) paradigmatic mixing legitimization, (7) commensurability legitimization, (8) multiple validities legitimization, and (9) political legitimization. Out of these nine, three relevant legitimization types apply to my study, and these are explained along with measures to minimize the threats to validity.

Sample integration legitimization applies in situations when the researcher attempts to generalize the statistical findings of the research to the entire population based on the data extracted from the participants of both the qualitative and quantitative phases of the study (Onwuegbuzie & Johnson 2006). Sample integration legitimization becomes more problematic if the sample for quantitative and qualitative parts of the study is either not the same or is not randomized. In that case, the meta interferences which are the inferences made from the combined analysis of the qualitative and quantitative data analysis will not correctly justify that the findings can be generalized because the samples in both phases were either entirely different individuals or the sample size for one of the phases was too small. This issue was minimized in my study by using purposeful cluster sampling for the student interviews and inviting the entire student and instructor population to participate in the quantitative study. In addition, the interview participants also participated in the quantitative study.

Inside-outside legitimization "refers to the degree to which the researcher accurately presents and utilizes the insider's view and the observer's view" (Onwuegbuzie & Johnson 2006, p. 58). To minimize this threat, the researcher should consider obtaining both the insider view as well as the outsider view while collecting data, analyzing, and interpreting data at all phases

including the data combination phased when the researcher is combining the data from both phases of the research to collectively present the findings (meta-inferences). For the current study, I conducted all the interviews to have a close interaction with the participants to have an insider view. In addition, member checking was done where participants were asked to review the interpretations (Onwuegbuzie & Johnson 2006), and integrated data analysis and interpretation method was utilized.

Conversion legitimization means the extent to which the qualitative and quantitative data is converted or analyzed with appropriate care and revision to have a high inference quality of data from both approaches (Onwuegbuzie & Johnson, 2006). For my study, thematic analysis was done for qualitative data. Obvious errors in coding were minimized by regularly checking data with the codes being assigned to ensure proper statements and themes are aligned with appropriate codes.

Ethical Considerations

Ethics approval for the study was obtained from the University of Calgary, Conjoint Faculties Research Ethics Board (REB20-2097) and from the country's Primary Health Corporation, Institutional Review Board-Department of Clinical Research (PHCC/DCR/2021/06/040). This section includes a theoretical and pragmatic discussion of the ethical considerations in my study. This includes the steps that were taken to mitigate any potential harm to participants or any actions that may endanger the validity of the study.

Relationship to participants

Since I have worked very closely with all the instructors in my administrative role, I had to take this into consideration as I intended to include instructors as participants in this study. It was made clear that this research was towards my Doctoral study but would benefit the institution at large. Having said that, some degree of power dynamic with the instructors and

students required addressing due to my administrative role. This risk was mitigated through a clear explanation of the research purpose, through ensuring that no one felt coerced to participate by ensuing that the recruitment was done by the research administrative assistant.

Confidentiality

For questionnaire data, anonymity was maintained, as the tool was sent via Qualtrics. No identifiable information was asked. The interviews were transcribed by an external agency. In addition to the transcription company, access to data and transcriptions was only available to me and my supervisor. Data was stored on a password protected computer and would be deleted as per the research data storage policy.

Informed Consent

Potential participants who responded to the recruitment email were provided information about the aim and purpose of the research. Informed consent was obtained from all participating students and instructors. Participants were allowed to ask any questions that they had before participating in interviews. Participants were also given a copy of the consent form to keep for their reference.

Participants were informed through the consent process as well as at the time of one-on-one interview that their participation was voluntary, and they may choose to withdraw their interview up until the data analysis phase. Participants were asked to keep their unique pseudonyms available to them should they choose to withdraw so the researcher could remove their interview transcripts from the study.

Limitations and Delimitations of the Study

One of the limitations of this study was the duration of the study. The time for data collection was one term rather than a full academic year. The duration of data collection could not be extended due to the timeline within which data collection needed to be completed. Also,

the data was rich enough to understand the experiences of BPG implementation at the research site as students' and instructors' responses were not limited to their experience of Winter 2022 term only.

Another limitation was the response rate and incomplete questionnaires. A total of 146 students participated, but only 103 questionnaires were included in the analysis as the rest were incomplete. Despite this, this study had representation from students across all years of study in the BNRT program. Unfortunately, no student from the PDBN program chose to participate in the interviews, so their perceptions could not be captured. Having PDBN participation would have been beneficial. However, PDBNs who had a rich prior experience in practice might have complicated the findings but at the same time, could have provided a different perspective on the utilization of RNAO BPGs. For the participating academic organization, non-participation from the PDBN students was not as relevant because soon after the data collection was completed, the academic institution stopped enrolling students for the PDBN program due to program closure.

A major delimitation was not being able to include participants from the practice settings which could include buddy nurses and preceptors who work closely with our students during their clinical practice time. To have a complete understanding of the learning of RNAO BPGs, its application in the practice setting is important to understand. Due to the limited timeline and scope, this study did not include data generated from talking directly to the preceptors and nurses about their views and understanding of the application of RNAO BPGs. The application of RNAO BPGs in the practice settings was indirectly understood by gaining input from students and instructors about their experiences of the application of BPGs in practice-based courses. In the practice courses, students were able to apply RNAO BPGs while providing care to patients or while practicing skills in the laboratory settings, which they shared during the interviews.

Summary

To understand how the RNAO BPGs were used to promote evidence-based nursing curriculum, teaching, and learning in an undergraduate nursing program in the state of Qatar, a MMR design was chosen as the method for the strength of having quantitative and qualitative perspectives to have a broad and in-depth understanding of the phenomenon. The pragmatist viewpoint as well as the CHAT framework aligned well with the MMR study. All aspects of legitimization and validity and reliability were taken care of from study design to sampling, to data collection and analysis. The instruments were designed using a modified Instrument Development, Design, and Construct framework to ensure the highest level of quality and validity. Description of the joint display of table was presented as a means to present the crossover analysis for this MMR study.

CHAPTER FOUR: FINDINGS

In this chapter I present both the quantitative and qualitative findings pertaining to students and instructor participants. I follow this up by discussing the integration of data presented as a joint display of the findings based on the students' and instructors' online questionnaires, interviews, and the analysis of the documents (course outlines and course reports).

Quantitative Findings: Students' Data

Demographic Information

Most of the students were from the BNRT program (95.5%). BNRT is a four-year undergraduate nursing degree program, enrolling students after high school completion. More than 80% of the participants were young adults who were aged between 18 and 25 years old. Most of them were females and came through the foundations program to the BNRT program. Foundation program is a one-year program that was required for students who lacked certain requirements for admission to the BNRT program. They would take course like English and Sciences to be eligible to enter the BNRT program.

Knowledge of and Attitude towards RNAO BPGs

RNAO site has over 50 BPGs that could be freely downloaded (https://rnao.ca/bpg/guidelines). The list of guidelines from RNAO is being updated as they either revise or retire previously established guidelines. Appendix A provides a list of all RNAO guidelines with their creation and revision dates. From that complete list of the guidelines, I included commonly used BPGs in the questionnaires for the participants to choose to answer the question on their familiarity with the BPGs. The option to add additional BPGs was also provided if a BPG that the participants might have used was not listed. The list was created based on my knowledge of the course outlines and my review of the course reports where instructors

report which BPGs were used and how were they included in the teaching of the course. In addition, participants were asked to identify the number of BPGs they were aware of. Thirty-two percent of participants reported that they were aware of 4–6 BPGs from the options. When asked about the specific RNAO BPGs, students had reviewed for completion of learning tasks and classroom activities, students selected at least more than one BPG. The percentage of students who were aware of the specific BPGs ranged from 15.5% (prevention of childhood obesity BPG) to 78.6% (patient and family centered care BPG) (see Table 4.1).

Table 4. 1

Students' Awareness of RNAO BPGs by BPG Name

RNAO BPG	Student Knowledge (%)
Person and family-centered care	78.6
Falls reduction	55.3
Delirium, depression, and dementia	40.8
Assessment and management of pain	56.3
Assessment and management of pressure injuries	43.7
Breastfeeding	21.4
Developing and sustaining nursing leadership	28.2
Establishing therapeutic relationships	55.3
Preventing and addressing abuse and neglect of older adults	19.4
Primary prevention of childhood obesity	15.5
Strategies to support self-management in chronic conditions	22.3
Women abuse	16.5
Workplace health, safety, and well-being of the nurse	32
Smoking cessation	25.2
Assessment and management of foot ulcers for people with diabetes	23.3
Enhancing capacity for interprofessional practice	16.5
Perinatal depression	20.4
Embracing cultural diversity in health care: developing cultural competence	31.1

According to the student questionnaire data (Figure 4.1), the major source of learning for students about RNAO BPGs was the instructors (93%). Approximately 27% of students reported that they learned about RNAO BPGs from their classmates. About 17% of students learned from

the BPG champions whereas 18% went to workshops organized by instructors as well as championship workshops organized by the BPSO committee members.

Figure 4. 1

Source of Learning about the RNAO BPGs

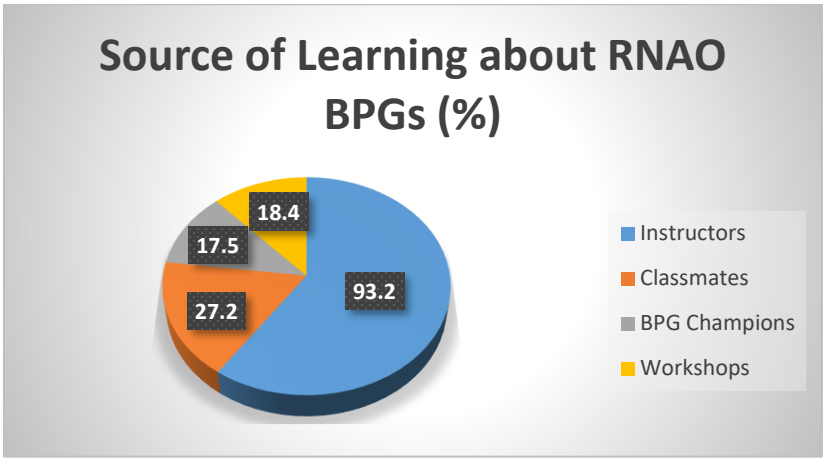


Table 4.2 provides responses of the students about their knowledge and attitudes towards RNAO BPGs. Over 60% of student participants reported that they knew how to access BPGs (question 1). Fifty-six percent of participants had downloaded the RNAO Application on their mobile phones (question 2). The comments on the questionnaire talked about the usefulness of the RNAO Mobile Application. For instance, a student's comment was, "The app really helps me in easily accessing the RNAO BPGs. I can read it wherever I am which helps me write my papers". Hence, the convenience of the Mobile Application seemed relevant to students' scholarship. Many student participants (61.4%) agreed or strongly agreed that they included RNAO BPGs in all their assignments when required (question 3), the corresponding comment in the questionnaire was, "It (the guidelines) helps me a lot with the course assignments and papers that we do because it has all the information I need". Fewer (29%) participants include RNAO BPGs in their assignments if it is not a requirement (question 4). This could be because of the limitations of the BPG topic areas that may not be directly relevant to their course content. For

example, one student commented, “It’s not easy to find the exact topic that I’m looking for”. Notably, only 45% of student participants were able to incorporate RNAO BPG recommendations while planning care of their patients (question 6). This finding indicates that students might have the knowledge of RNAO BPGS and hold favorable attitudes towards BPGs, but they did not know how to implement RNAO BPGs in their clinical practice.

Table 4. 2

Student’ Knowledge and Attitudes Towards RNAO BPGs

Knowledge and Attitude	1	2	3	4	5	M	SD
			%				
(1) I am knowledgeable about how to access RNAO BPGs	9.5	7.0	15.8	23.7	39.5	3.76	1.346
(2) I have downloaded the RNAO BPG application on my phone	17.5	13.2	8.8	14.9	41.2	3.50	1.596
(3) I include RNAO BPGs in all my assignments when required	9.6	8.8	15.8	21.9	39.5	3.77	1.366
(4) I include RNAO BPGs in all my assignments even if it is not required	22.8	14.9	28.9	16.7	12.3	2.78	1.335
(5) I look up RNAO BPGs while developing care plans or concept maps	11.4	11.4	34.2	21.1	17.5	3.28	1.248
(6) I am able to incorporate RNAO BPG recommendations while planning the care of my patients	10.5	14.0	25.4	24.6	21.1	3.35	1.281
(7) I find RNAO BPGS useful in all the courses that I am currently taking	6.1	8.8	21.1	31.5	28.1	3.73	1.190
(8) I believe that the quality of client care can improve through the implementation of BPG recommendations	5.3	7.0	18.4	22.3	42.1	3.97	1.208
(9) I often defer to RNAO BPGs when looking for evidence-based recommendations	4.4	14.0	30.7	21.9	24.6	3.55	1.152

Note. Percentage proportion responding 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; M=mean; SD= standard deviation; M = mean; SD = standard deviation.

Perceptions of RNAO BPGs as Evidence-Based Tools

Student participants mostly perceived RNAO BPGs as good evidenced based tools as seen in their responses presented in Table 4.2. About 60% or more participants found RNAO BPGs useful in all courses they were taking (question 7). One of the comments in the open-ended or free text section stated that "RNAO BPG has EBP resources which are good material to trust and use in course work". Sixty-four percent of student participants agreed or strongly agreed that the quality of care improves through the implementation of BPGs (question 8). Thirty-eight percent of participants reported that they looked up RNAO BPGs while developing care plans or concept maps (question 5), and 46.5% deferred to RNAO BPGs when looking for evidence-based recommendations (question 9). These results indicate that RNAO BPGs, where relevant, are considered good evidence-based tools.

Facilitators and Barriers to Learning About RNAO BPGs

With regards to the facilitators and barriers to learning and integration of BPGs (see Table 4.3), 50–53% of student participants agreed or strongly agreed that they found RNAO BPGs easy to understand (question 12), saw a connection between theory and application of RNAO BPGs in clinical practice (question 3), easy to find BPG recommendations using the Mobile Application or the desktop version (questions 14 & 15), and could find recommendations that could be applied in clinical practice (question 16). However, some students did not find it easy and stated that "it is complicated. It has a lot of information that is not related to the theory. They are so long". One student commented about its relevance in clinical practice by saying, "It helps to give more information about the assessment that I want to do in the patient and how to deal with the patient in a professional way. It helps me understand the reasons for some patient care interventions".

Table 4. 3

Students' Facilitators and Barriers to Learning about RNAO BPGs

	Facilitators and Barriers	1	2	3	4	5	M	SD
				%				
(10)	I have increased my knowledge of BPG by including them in my assignments.	10.5	7.9	18.4	28.9	24.6	3.54	1.297
(11)	I find RNAO BPGs easy to understand	7.0	12.3	19.3	24.6	27.2	3.58	1.264
(12)	RNAO BPGs are appropriate to be applied in all settings regardless of cultural differences	6.1	7.9	28.9	22.8	24.5	3.57	1.177
(13)	I see a connection between the theory and application of RNAO BPGs in clinical practice	7.0	5.3	24.6	20.2	33.3	3.75	1.234
(14)	It is easy to find BPG recommendations using the mobile (iPhone, tablet, iPad) application	7.9	7.9	21.1	22.8	30.7	3.67	1.271
(15)	It is easy to find BPG recommendations using the full desktop version	5.3	9.6	24.6	26.3	24.6	3.61	1.165
(16)	It is easy to find BPG recommendations that I can apply in clinical practice	7.0	9.6	23.7	24.6	25.4	3.57	1.226
(17)	There is enough time to apply evidence-based interventions including RNAO BPGs in clinical practice	8.8	9.6	32.5	20.2	19.3	3.35	1.210
(18)	There is enough support available to assist students to learn about RNAO BPGs in theory courses	8.8	7.9	23.7	27.2	22.8	3.52	1.235
(19)	There is enough support available to assist students in the application of RNAO BPGs in clinical courses	11.4	10.5	24.6	24.6	19.3	3.33	1.286

Note. Percentage proportion responding 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree; M = mean; SD = standard deviation.

Included in Table 4.3, with regards to the level of support available for students to learn about RNAO BPGs, 50.1% of student participants reported that there was enough support

available to assist them in learning about RNAO BPGs in theory courses (question 18) and 43.9% participants agreed or strongly agreed that there was enough support available to assist them in the application of RNAO BPGs in clinical courses (question 19), which shows that almost 50% or more participants did not find the required support to learn about RNAO BPGs in theory and clinical courses. Fewer participants (39%) reported that there was enough time to apply evidence-based interventions including RNAO BPGs in clinical practice (question 17). One of the reasons mentioned by the students was the length of the guidelines. For instance, one student commented, “Too many steps to keep in mind and less time. There’s not enough time to look through it during the clinical shift or even after”.

Cultural Relevance

About 29% of the student participants remained neutral on item 12 (RNAO BPGs are appropriate to be applied in all settings regardless of cultural differences). 47.3% of participants agreed or strongly agreed that the RNAO BPGs were appropriate to be applied to all settings regardless of cultural differences. For example, one student commented, “Culture and religious beliefs when the patient disagrees with BPG. Sometimes it is hard to relate some RNAO BPGs here in Qatar”. Cultural relevance and barriers were explored further during the one-on-one interviews with the students.

From the questionnaire findings, it was evident that students were able to learn, understand, and extract evidence-based interventions more readily in the theory courses but found it challenging to apply BPG recommendations in clinical practice. Although most of them believed that the quality of client care could improve through the implementation of BPG recommendations, the application in clinical practice might be limited due to time restrictions.

The cultural relevance of the application of RNAO BPG recommendations was agreed upon by half of the participating students and needed further exploration through qualitative interviews.

Qualitative Findings: Students' Data

Manual coding, as well as NVIVO software, was used to extract codes and themes from the interview transcripts. The interview transcripts were read and re-read, and student quotes were classified as per the keywords and topics that aligned with the research questions. Those codes and topics were further categorized and were grouped under themes. Five themes were extracted from my coding of student interview data: (1) integration of RNAO BPGs in courses, (2) perceptions of RNAO BPGs, (3) facilitators to using RNAO BPGs, (4) barriers of integrating RNAO BPGs in courses, and (5) recommendations to enhance the curriculum design and teaching practices about RNAO BPGs. While reviewing the research purpose and the research questions, the themes were aligned according to the research questions. For example, the first two research question, level of knowledge and attitude of participants towards RNAO BPGs and perceptions of participants about RNAO BPGs as evidence-based tools aligned with the themes-integration of RNAO BPGs in courses and perceptions of RNAO BPGs. Each of the themes are presented below.

Integration of RNAO BPGs in Courses

All the students in the interview mentioned that they were aware of RNAO BPGs, and how to access them either on their mobile devices or via the full desktop version and reported that they had accessed RNAO BPGs during their coursework. However, their levels of understanding, their usage, and the extent to which they had read the guidelines varied.

Table 4.4 lists all the BPGs that were mentioned by the students during the interviews. The "X' indicates the number of times a BPG was mentioned by students in a particular year.

Students used a short name or a reference to BPGs as they remembered. For clarity purposes, a column was added to specify the actual BPG name.

Table 4. 4

Names of the RNAO BPGs Mentioned by Students in Each Year

BPGs Mentioned	Actual RNAO BPGs	Yr 1	Yr 2	Yr 3	Yr 4
		Frequency			
Breastfeeding	Breastfeeding-Promoting and supporting....		X		XX
Burnout; Workload	Developing and sustaining safe, staffing and workload practices				X
Leadership	Developing and sustaining nursing leadership			X	X
Cultural competency	Embracing cultural diversity in health care	X	XX		
Diabetes management; Foot care	Assessment and management of foot ulcers for patients with diabetes		X		XX
DVT	Assessment and management of venous leg ulcers			X	
Elimination	A proactive approach to bladder and bowel management in adults		X		X
Sleep; Nutrition; Selfcare; Fatigue	Preventing and mitigating nurse fatigue in health care	XXX			X
Pain	Assessment and management of pain				X
Patient cantered care	Person and family cantered care	XX	X	X	X
Skin care; Braden scale; Pressure ulcers	Prevention of pressure ulcers	X	X	X	
Professionalism	Professionalism in nursing	X		X	XX
Restraints; Safety	Promoting safety: Alternative approaches to the use of restraints	X		X	
Suicide	Assessment and care of adults at risk for suicidal ideation and behaviour		X		
Conflict	Managing and mitigating conflict in health care teams				X
Communication	Establishing therapeutic relationships	X		X	XX
Palliative care	Palliative care				X
Transition	Care transition		X		
Elder abuse	Preventing and addressing abuse and neglect of older adults				X
Elder care; Chronic illness management	Strategies to support self-management in chronic conditions				XX
Antenatal depression	Assessment and interventions for perinatal depression				X

Note. X =mentioned once; XX =mentioned twice; XXX=mentioned three times

As seen in Table 4.4, ‘patient and family-centered care’, ‘professionalism in nursing’, ‘prevention of pressure ulcers’, and ‘establishing therapeutic communication’ BPGs were mentioned by students across most years of study whereas certain BPGs including ‘developing and sustaining nursing leadership’, and ‘managing and mitigating conflict in health care teams’, were mentioned by the third and the fourth-year students.

Examples of Learning Activities Utilizing RNAO BPGs

Students provided various examples of learning activities during which they were directed to look up a BPG related to the topic of discussion or aspect of care either in the classroom, lab, or in clinical practice areas. For example, Qin, a second-year student described the use of BPG related to suicide in one of her classes to enhance the understanding of approaching patients with suicidal ideation. She stated,

> We used actually in our course 314. We use it when we talked about how some patients might think about suicide. So, we linked the suicide by what the nurse can do based on their RNAO. I remember there was so many guidance. One of them, the nurse should take everything serious from the patient, especially when they talk about killing, killing another people, like the homicidal and the suicidal and how we as a nurse should provide for those patient the care but not only the medical care but more mentally care and reduce the idea-- or not reduce but clear up the idea of the shame. So, I remember we used that in a classroom.

At times students accessed the guidelines during class activities to answer the questions presented by the instructor. Hange-Zoe, a fourth-year student gave an example of a class activity where they used RNAO BPGs. She mentioned, “We just had an activity where the instructor divided a couple of best practice guidelines…, and we just had to pull out some recommendations in these guidelines.” The above examples support the inclusion of BPGs to

facilitate classroom discussions and as part of classroom activity in the learning of specific content.

Students also talked about referring to BPG recommendations while in clinical practice. Six out of thirteen students mentioned referring to RNAO BPGs during clinical practice, either to look up practice recommendations related to their patients' care or during clinical conferences. A fourth-year student Shoug stated,

> I have the application on my phone. Because we used to do this mini discussion at the end of the shift. So, when I was confused about something during my shift, I would look at the BPG and then we'll discuss it in the end.

Likewise, a first-year student Isra commented,

> Yeah, because you can also find some-- the information, you can apply it on the case scenarios. They give you examples on, for example, how to communicate with the patient, or how to determine the risk factors and, yeah. It is really useful in clinical.

All six students who talked about referring to BPGs during clinical practice provided examples of specific BPGs. For example, a first-year student Hannah mentioned BPG on 'professionalism'. She commented,

> I think (I applied the learning from RNAO guidelines on professionalism), because we've tackled it so much in our last semester, I think remaining courteous, thinking about the principles of professionalism, and applying it or having it in my mind all throughout that clinical, was really helpful. How do we remain respectful and courteous with the patients without crossing the boundaries.

Students also provided examples related to use of BPGs in the maternity clinical while providing patient teaching related to breast feeding (Hang Zoe, fourth year) and using BPG

recommendations to prevent venous ulcers in the care of post operative patients (Sara, third year).

In addition to using BPGs for classroom and during clinical, eight out of 13 students mentioned that they used RNAO BPGs for their assignments including presentations, scholarly papers, position papers, clinical reflections, case scenarios, and for creating nursing care plans. Five students mentioned that they would only refer to BPGs if it was a requirement in an assignment or was intentionally brought up by an instructor in class for a classroom activity. For example, Asiyah, a second-year student stated,

> Actually, more what of has happened at times when there is assignment, then we go up and search for the Best Practice guidelines. Until now, I haven't really looked up something specifically as far as I remember, but the ones just that are in our textbooks or in the courses that are given to us …, I use those, but not specifically going ahead and looking for it and then finding that information.

Another fourth-year student emphasized that the only motivation to refer to RNAO BPGs was when it was mandated by the instructors. She said,

> Only if we had an assignment that-- usually, our assignment requires let's say five resources that are peer-reviewed and scholarly. Immediately, the first thing I would go to, I want any trusted source as RNAO guideline. I would try to pick a guideline that suits whatever assignment I'm working on (Hange Zoe).

The above quotes and examples suggest that students included RNAO BPGs in discussions, class activities, in clinical practice, and for completing assignments. However, students referred to RNAO BPGs for their assignments mostly when mandated by the instructors.

When students consulted a BPG, it seemed that, most often they did not read the entire BPG document. They mostly scanned the BPG document to review the purpose and scope, read the recommendations, and refer to patient education section of the guidelines. For example, Fatima, a first-year student mentioned, “I think I would look into background information, practice recommendations, plan, and family education. It looks catchy and the most important.” Another student stated, “We just open up, see a couple of recommendations, then that's it” (Hange Zoe, fourth-year). Isra, a 1st-year student stated, “I search for background and family education”. Similarly, Hoppa from 1st year commented, “I really didn't go deep on these documents. But whenever I searched, in my two experiences I've mentioned earlier, both are-- I just had the highlights and the just definition and one to three, but not the whole document”.

About the use of RNAO BPGs in courses, from the above data, it can be concluded that students were aware of several RNAO BPGs and knew how to access the guidelines. All participating students talked about various learning activities where they had accessed the guidelines that included, class discussions, group activities, in assignments, and in the clinical settings which demonstrates their knowledge of a variety of guidelines on several topics. However, their synthesis of the information from the guidelines was limited to certain sections of the guidelines including background, scope, patient education, and recommendations. They used the guidelines to the extent which was deemed necessary by the class activity or requirements in the assessments. It seemed as though they were using the guideline to “tick” particular expectations of the task an instructor had set. They were not reading them as comprehensive documents that provided in-depth knowledge about complex topics in nursing practice. English being the second language for most students studying at the participating academic organization can contribute to students not being able to synthesize the complex material within the BPG document.

Students' Perceptions of RNAO BPGs

Student participants were asked to share their views about RNAO BPGs and more specifically to comment about their perceptions of them being one of the evidence-based tools. Students' comments are presented under the following sub-themes: (a) accessibility, language, and format of the guidelines, (b) RNAO guidelines as evidence-based tools, and (c) impact on health outcomes with the application of RNAO BPGs.

Accessibility, Language, and Format

All students generally found BPGs useful, informative, and easy to access. For example, Laiya, a second-year student stated,

> The thing that it's very easy to access, and if you go to the website, we have an option to look it online. Also, there is a download option, which doesn't take much of the time. So that was one of the easy ways. So, we don't have to ask someone else or verify.

With regards to the ease of language, Mays, a second-year student commented,

> The information that is described in the paper is very helpful. The considered recommendations, the explanations that they explain it, it's really very well. Let's say the language that they use also is really so good to understand, so simple. It can reach to our minds.

For some, the format made it hard to extract information. Concerning the length of the document, five out of thirteen students commented that the guidelines were too long. For example, Sara, a third-year student mentioned,

> In some cases, when I open a BPG, there will be a lot of information which I need to skim. In some cases, it will direct me to my point, and in some cases, I need to think more, or I will not understand it. What does it really mean? Because when we open the

> BPGs, there are a lot of things that we need to read about. Some are direct. But some we really need to read the files, the PDFs for it.

Only a few students found the document easy to use. For example, Fatima, a first-year student commented, “The documents are easy to use. The diagrams or graphics are catchy and can sometimes summarize the whole topic, but a bit long sometimes.”

There were mixed comments from students with regards to the accessibility, language, and format of the RNAO guidelines. It was easy to access and download, the language seemed to be easy, but the length and the format was a concern for some students making it difficult to extract relevant information.

Evidenced-Based Tools

All thirteen participating students commented that the RNAO guidelines were evidence-based tools and contained useful information. A first-year student connected the RNAO BPGs to providing evidence-based, safe, and quality care to patients. For example,

> I believe they're important, especially important in nursing because we've learned that, in giving care to the patients, we can't just give any type of care, it has to be evidence-based. And so, these guidelines would somehow help us maintain safe and quality care to give to our patients (Hannah, first-year student).

Another first-year student Hoppa agreed that the RNAO BPGs served as an evidence-based tool. She elaborated,

> It's more of reality, how to really do this. When I searched about culture, actually, I like this RNAO or this practice guideline more than the book because the book, it was just a definition according to WHO (definition of) cultures, whatever, and just information, but in the Best Practice Guideline, RNAO, there was how a nurse should apply this and how to understand it in terms of clinical practice and what exactly in the clinical setting that

face the nurse according to this culture concept. It was really more-- reflects the reality more than just giving information. I think if finding anything reliable to use in my clinical practice, I would go there, not the book or any other source.

A fourth-year student Ayesha commented, “They're evidence based. At the end of the documents, they always share their evidence. ….So yeah, I have read some of them. They're really good research, big scale research”.

Students’ prior knowledge of critiquing a source from their academic writing course completed in the first year of the undergraduate nursing program allowed them to comment on the evidential rigor of the guidelines. Hannah, a first-year student said,

> The guidelines are evidence-based because, first, my first thought would be when I look through them, I could see their authors. …and that gives me a hint about their qualifications to write about these things plus their experience. And it's also backed by research. So, we talked about it in our academic writing, that everything you say has to be backed by a journal, so we see in the references, how they've used past research to support these guidelines.

The use of guidelines in theory and practice courses was a source of comfort for one student as she commented,

> Actually, I consider them a very useful tool for nurses. As the name implies, there are guidelines for best-known actions for certain situations or care…. It makes me feel more confident of my care knowing that what I'm doing is actually what is best out there at the time (Hange Zoe, fourth-year).

Students across all years of study considered RNAO BPGs to be evidence-based tools based on their understanding of evidence. Students relied on the information they were told,

relied on their reading of the document with a reference list and their understanding of the credibility of the authors mentioned on the document.

Impact on Health Outcomes with the Application RNAO BPGs

Six out of thirteen students discussed the impact of having a positive patient outcome with the use of RNAO BPGs in theory and clinical courses and the benefits of having a positive patient outcome when they utilized the recommendations in the clinical settings. For example, Sara, a third-year student commented,

> I learned about something which is called therapeutic communication, which is when you go to a patient room, we need to introduce ourselves. We need to ask about his situation, and his problem, even though we know about it, but we still need to ask about it so that we will create a connection with a patient so that he will trust us. And whenever we come back to the patient, he will know that we know his information. It's not only taking it from the Cerner and just writing about it, but we really know about the patient. So, this was like-- which really makes sense because I saw the difference when the nurse will go to a patient room, and she will just do her stuff and not even talk to a patient. And when I went to a patient room and I introduced myself, I would say, 'I'm a nursing student, 'and I'll just try to get information. How did it happen? And how are you feeling about the problem'? And it really touched-- the patient was really opening up more things which her nurse even didn't know. And I went to her and I'm telling her, 'The patient said this, this, this, this.' So, then she was shocked. And she said, 'Okay, let's go and ask the patient.' So, I think this is really the best practice.

Three participating students also commented on the diversity of BPGs, as some of the guidelines could be applied to their own and their families' situations. One first-year student

commented that she found the guidelines useful in her personal life as well. She mentioned utilizing RNAO recommendations related to nutrition and sleep (Isra).

Students provided good examples of their understanding of recommendations from the RNAO guidelines impacting lives of patients and their own family members in a positive way.

Regarding the students' perceptions of RNAO BPGs, there were mixed views about the ease of understanding of the guidelines. Some students found them easy to read and find the relevant information, whereas others found them lengthy and complicated to extract information. All participating students considered RNAO guidelines evidenced-based and reliable based on their knowledge of research and critique of evidence. Students provided several examples of their use in clinical practice and the importance of providing evidence-based care. Students generally had good experiences from the learnings from the RNAO guidelines and found that the recommendations when applied had positive patient outcomes. Students also commented on the usefulness of the recommendations on their personal lives.

Facilitators to Using RNAO BPGs in the Nursing Curriculum

All participating students mentioned a variety of facilitators to using RNAO BPGs in their courses that included: (a) the availability of the Mobile Application, and (b) the role of instructors in facilitating the use of guidelines in classroom activities and their mandatory use in the assignments.

Mobile Application

Nine out of thirteen students mentioned that the availability of the Mobile Application was a facilitator for them to use the guidelines and many were not knowledgeable about how to navigate the desktop version. For example, Hannah, a first-year student commented,

> One would be the application. I think it's not anywhere available. So, I think if there is an application available for us to download, it would really be useful because everyone

> nowadays uses the phone. So, I think that's the number one factor. And yeah, the website was really helpful too, and it's working. So, I think with just proper guidance on how to locate these resources or how to go about the website would be helpful, so we won't have trouble finding our RNAO BGP.

Mobile Application was available to students for the first couple of years of the launch of RNAO BPG program at the research site. After that, RNAO took it down due to some reasons. The students had downloaded the Application on their devices for easy access. The website has all the information, but students mentioned the lack of knowledge about properly locating the guidelines.

Instructors as Facilitators

The instructor's role was highlighted by all participating students not only in educating students about the RNAO guidelines but also in facilitating its use in the classroom and clinical. Shoug, a fourth-year student said,

> Whenever the instructors mention it more in the class, we remember more to use it. Because I remember I used BPG the most with (one instructor) in her classes because she is always mentioning BPG. Whenever we have an assignment or a discussion, she would ask what does BPG say about this.

A second-year student Qin also elaborated on the important role of the instructor in facilitating the use of RNAO BPGs. She said,

> Actually, maybe the instructors because they keep bringing the RNAO in every concept. So, I feel like they helped me a lot to really look at it and to discover it more and start to use it in my clinical practices. So, I feel like the major thing is the instructors.

Another first-year student Hannah said, “I think the instructors, when they're going to discuss about particular lesson and they link it with RNAO BPG, and they kind of explain more

about it and not just mention it, but really go over it, then I think it would encourage students, and it will stick to our minds more."

Guided facilitation by the instructors was the motivating factor for one first-year student. She mentioned that students used the guidelines more in courses where instructors emphasized the use of RNAO guidelines in the class by showing the guidelines and guiding them how to read as compared to course where instructors did not present the guidelines as essential (Isra).

Guided facilitation and emphasis from the instructors about the utility and navigation of guidelines were facilitators from the students' perspectives about the use of RNAO guidelines in course.

Barriers to Using RNAO BPGs in the Curriculum

All participating students identified challenges of using RNAO BPGs in the curriculum which are grouped as: (a) guideline-related challenges, (b) lack of time, knowledge, and motivation to navigate the guidelines, and (c) cultural barriers.

Guideline Related Challenges

It was a general perception shared by all students that since the guidelines were too long, it was time-consuming to read and extract relevant information. Four students found the website too complicated to search for information. Once they opened the documents, they were lost and could not extract the information they were looking for. For example, Hannah, a first-year student commented,

> The main challenge that I'm facing is that with the website, there were a lot of documents, and it's kind of overwhelming. So, I don't know which RNAO BPG should I look to and the amount was overwhelming, so I was like-- I don't know how to say, but it kind of did not encourage me to read more about it because I felt like it was too long.

Similarly, Hange Zoe, a fourth-year student commented,

> Some of them, ...structure-wise, they're easy to use. You can just look up the index and you're like, 'Yeah, the recommendations page'. But some of them, I just don't know what's going on. Their structure is kind of not too easy to understand. Especially, when suddenly, they put a diagram, and there's a lot of circles and just too many things going on, so you're just being caught off guard at first look. I think, not for everyone. Some might be able to look at it, take some time and understand it, but some might need a kind of explanation from someone else.

Isra, a first-year student commented that the perception exists that the BPGs are complicated to read, but once they know how to navigate, they are very useful.

The currency of some of the guidelines was mentioned by one third-year student as a barrier. The instructors encourage the use of current resources to back students' assignments and projects. Since some guidelines are outdated, she did not use those in her assignments. She mentioned that if the BPGs were older than seven years, which some of them were, she could not use them because of the requirement by the instructor to use current evidence (Sara).

Students also mentioned that since the guidelines were very specific to certain topics, they could not find recommendations or supporting evidence related to all the topics. Although there are more than 50 guidelines on various topics, students mentioned that they could not find guidelines on topics that they were studying in their courses. For example, Asiya a second-year student said,

> I don't think it's a negative aspect of it being specific, but it does make it challenging to find what you want because at times you're looking for vague information and that's not available because it's so specific to certain situations. So that is something that is a barrier

> for me. And other resources are much, I think, easily available. Like if I just type in even on Google and then WebMD or something like that, that has a quicker answer or the drug guide. It has a quicker answer than Best Practice.

Students commented on the length, currency, complicated website and lack of guidelines on certain topics of their interest as some of the barriers to using RNAO guidelines

Lack of Time, Knowledge, and Motivation

Some students commented that they did not know how to navigate the website or the application when it was available to extract information from the guidelines. Students also talked about the lack of motivation to access the guidelines if they were not mandated or emphasized by the instructors.

Lack of knowledge about how to access, navigate, and extract information from the website or from the BPG document itself was mentioned as a challenge by seven out of thirteen participants. For example, Shoug, a fourth-year student stated,

> In the beginning, we didn't know how to use BPG. Even in the assignments, we didn't know how we can mention them and how can we talk about BPG. Some instructors just introduced BPG to us as professional rules to follow, and that's it. Sometimes, they don't tell us how to use it.

A second-year student Qin also talked about her lack of knowledge of navigating the Application. She said,

> I use it, but as far as I was so confused how to use it because there were so many things that I actually don't know. I just downloaded it because then I start to-- like, 'This is a good opportunity. And you're going to use it in the clinicals. But to be honest, all the time, I'm literally opening the app, I immediately close it because I don't know where to go in

> it. I don't know how to use the app itself. Yeah, I feel like it's difficult to find the information because I don't really know how to use it, but I downloaded it just in case.

Despite these concerns, three students mentioned that their understanding of RNAO BPGs improved over time as they got more opportunities to learn and navigate the website. The more the students used the guidelines and read them, the more adept they became at navigating the BPG materials and developing an understanding about their importance to practice. Ayesha, a fourth-year student said, “In the first year, it was tough because everything was new. We were still getting used to the university. But by, I think, third semester, first year, it was easy for me to use them.” A second-year student Qin also supported the claim that working with BPGs became easier as she progressed in her studies. She commented that in the first year, she did not know what RNAO BPGs meant but in the second year, she learned about the guidelines in depth.

Lack of knowledge about accessing the guidelines from the Mobile Application and from the website which could become further complicated by the length and format of the document added to the list of barriers to using RNAO BPGs. The lack of knowledge and apprehension about using them seem to ease off for some students as they progressed in their studies.

The presence of RNAO Mobile Application was a motivating factor for some students as it was readily available to students on their phones. For example, Mays, a second-year student said,

> I feel it would be so much useful in clinical. Because imagine you have something to refer to it when you don't find your instructor or you're doubting yourself about this concept and then you have just this app, you can open it and quickly search for your answer or your thing you want to know more about it.

Another motivation mentioned by six participating students was intentional integration of RNAO guidelines in class, lab, or clinical, or in their assignments. For example, Ayesha, a fourth-year student mentioned,

> Because it's part of the assignment criteria, so that facilitates people to use it more. And I think the part that it's graded, so people feel compelled to use it. Yeah, if it's not graded, people wouldn't use it. Unless sometimes, an assignment criterion, they would say 'these many evidence-based articles should be there' so, if they can't find anything in research, they will use BPG.

Lack of motivation from students' perspectives included absence of the Mobile Application and lack of intentional integration of RNAO guidelines in courses and assessments.

Cultural Barriers

Ten participating students commented that although the guidelines could be used in all settings, some recommendations were not appropriate to be implemented in all cultures. Three students did not find any cultural barriers. The others were not sure if cultural barriers existed. These variations could be because of how the students interpreted the recommendations and read them from a cultural lens.

Concern shared by participating students were recommendations from the guideline on 'person and family centered care'. Maintaining eye contact with an opposite-sex patient or family member, and use of touch to show empathy were the two gestures that could not be applied in most settings in the Middle Eastern context. Although while reviewing the RNAO guidelines on 'person and family centered care', it is specified that the guidelines should be used as appropriate based on culture and context (RNAO, 2015a, pg. 26), students might have read the recommendations literally. For example, a third-year student Sara said,

> For example, in the best practices, when I see the therapeutic communication, it says that you need to have eye contact with your patient…So when I just get to know about it more, it will be like a cultural barrier. So that person, for example, it's the opposite sex, like a male patient. So, he will not put eyes into my eyes because I think culturally it's not good for him. Or even in some cases, for me, I will not put my eyes into a patient, like a male. So, it will be like for me also, it's challenging at some point when I see like-- if it's an old man, okay, I can take it as my father. But if I see a patient of a young age, I will not try to maintain my eye contact. It would be a challenge for me, also.

Isra, a first-year student talked about touch. Touching a person from the opposite sex is not appropriate in Middle Eastern Cultures. She said,

> Maybe it's the physical support. Like some, for emotional support, they depend on the physical touch, and some patients that work with them. But before everything, you have to take their consent. I'm not sure if, outside Qatar if they need to take their consent or such thing. Because for them it doesn't make a difference. But here depending on culture, between the two genders it's not really something that we can do.

Another concern shared by the students was about the presence of family members while collecting information from the patients. In the Middle Eastern context, family members are an integral part of the culture and cannot be asked to stay away from the patients while taking health history. For most interactions, men provide information and listen in while a health care provider is either collecting data or sharing information. The presence of family is considered important, valued, and culturally appropriate in Middle Eastern cultures. The review of one guideline related to ‘women abuse’ specifically recommends asking questions in an absence of the family member (RNAO, 2012, pg. 22). Whereas for other guidelines, family is considered as an

important aspect. For example, guidelines on ‘strategies to support self-management in chronic conditions’ (RNAO, 2010) and ‘a palliative approach to care in the last 12 months of life’ (RNAO, 2020). The below example shared by a student most likely is in the context of women abuse. Students shared that the recommendation related to obtaining information from the patient in the absence of family members might not be applicable. For example, Asiyah second-year student said,

> One thing that I keep seeing is probably have privacy without the family or make sure that the patient is the one telling you about their illness, which I’m like-- it is true, it is applicable, but not so much, because in the country that we live in, mainly men are the ones who explain it and women are the ones who accept men saying all that. And then at times, it's like, okay, if the man is saying maybe the woman is abused. So, we get that thinking but then it is a little different to apply this practice. Maybe she’s not abused. Maybe the household is like that. So that is, I think, kind of a barrier over there.

Students also talked about their maternity experience where the presence of a spouse was recommended to provide support to the mother in labor. In many public hospitals, men are not allowed in the labor room. Hence, the facilities' policies do not support the implementation of the guidelines. For example, Shoug, a fourth-year student said,

> The importance for the woman to have her partner in the delivery room. That was mentioned in BPG. So, we should give education to the woman. Right? So that was a challenge because I have to educate the woman that it would be better for her husband to be here, but in real life, it's not allowed for him to be there. So, I would change this because if I was in that situation, I'd be happy if my husband was with me. The BPG

> helps me understand everything in almost a perfect way, but there's always this variation that I can't apply here.

Two students, however, commented that these were perceived cultural barriers, and they could use their discretion and apply the recommendations based on the context. Mays, a second-year student commented on the question about cultural barriers to the use of RNAO BPGs. She stated,

> I think not, no I didn't. I feel and know sometimes when I talk with other students like third year, they face these problems. But actually, I don't know why. Maybe this is …. doesn't familiarize themselves with the concepts or doesn't familiarize themselves with the critical thinking, like how I'm going to apply this concept or this recommendation or anything in this RNAO applied to the patient. Maybe it's a misunderstanding from the students.

One student generally thought about the context of the guidelines as Western and said, “I think it's very much Western. I guess it could be way better if they really take into consideration Middle Eastern culture, it would be better. It would be smoother to apply here” (Shoug, fourth-year). In contrast, another student, Hannah, talked about the understanding of the guideline's recommendations being in English as culturally compatible despite being in the Middle Eastern culture. Hannah, first-year student said,

> I don't think there's-- I mean, as far as I know, I have not experienced any cultural barrier at all. In terms of the language that the file is on, it's in English and we know English, so it's easy for me to understand it as well. And the words used were not that deep, so I can easily understand the guidelines.

To summarize, there were interesting views from the students with regards to the facilitators and barriers of using RNAO guidelines. The presence of Mobile Applications was considered a facilitator, and the discontinuation of application was a barrier. There were mixed views about the language and format of the guidelines. For some students accessing information from the website was easy, whereas for many, the site and the documents were complicated and overwhelming. The role of the instructors in explaining and emphasizing the use of guidelines was considered a main facilitator by many students and contrary to that, if the instructors did not explain or emphasized the guideline's usefulness, it was seen as a barrier. Not surprisingly, students found it easier to use the guidelines as they progressed through the program, but the first impression was, the guidelines were overwhelming for them. Mandatory requirements to reference BPGs in students' graded assessments was a facilitator, and if these were not required, students were less keen to access them. Students' views of using the guideline recommendations in the Middle Eastern cultures and how some students perceived certain BPGs as not culturally friendly might be because the students were importing broader ideas that are part of the cultural differences between Canada and Qatar. Nonetheless, it seemed the students' critique of the cultural barriers were vested in an understanding that the BPGs should be applied as written. The important data that was revealed within the discussion of cultural appropriateness was that some students expressed their understanding that they must use discretion and critical thinking to appropriately apply the guidelines. The discussion section will explore the perception of cultural relevance in depth by comparing guidelines with the statements from the students.

Recommendations to Enhance Integration of RNAO BPGs

All participating students provided recommendations about improving the implementation of integrating RNAO BPGs into the curriculum. The recommendations are

presented under the following sub-themes: (a) providing more education and guidance to students about navigation of guidelines to access relevant information, (b) more visibility in all courses across all years of study, and (c) connecting the gap between theory and practice.

More Education and Guidance

The role of the instructor in teaching students how to extract information from the RNAO guidelines in the first and second year of study could have been improved as suggested by some students. The students recommended having a more structured approach to the teaching of the guidelines. For example, Shoug, a fourth-year student said,

> We need to introduce first- and second-year students more to BPGs, way more, to connect it to everything, practice, assignments, discussions, thoughts about nursing, everything. Because I really just knew the importance of BPG, I guess, in my late third year. And it's really important, so I think they need to learn more about it. I was introduced since the first year, but I just knew the importance of it late third. And it makes just the practice easier, so it would be really helpful for them if they know it and understand it earlier.

Fatima, a first-year student, provided an example of how students in the early years are taught about research skills for selecting articles, similarly, a session on navigating the website for RNAO to access and read a guideline can also be conducted. She said,

> Maybe have more lectures explaining the use of RNAO and how to use it. We have a whole lecture about how to find a suitable article or use a database, so I would find that having the same with RNAO could be helpful.

Three participating students shared various strategies that could be included in the classroom where BPGs could be integrated. Isra, a first-year student, suggested using RNAO BPGs while doing group projects and group discussions. Sara, a third-year student further

elaborated the recommendation to intentionally incorporate in the course, so the students are mandated to read it. Students also talked about having more workshops for teaching them about the guidelines. For example, Zeinab, a first-year student said,

> I feel like if we had more workshops and seminars that introduced more of the RNAO concepts and ideas and stuff, I think it would be beneficial. Again, as a first-year student, I feel like there are a lot of things that we don't understand and do not know about.

Hoppa, another a first-year student, also emphasized having workshops for first year students educating them about navigating the website, going through various sections of the guidelines and extracting relevant information.

Ayesha, a fourth-year student mentioned that although workshops outside of the scheduled lectures are being organized many students do not attend those and if they are incorporated in lectures and within class time, there will be more attendance. Students also need to learn how to critique and compare the guidelines with other resources. A second-year student Laiya commented,

> ….So how are we going to use that skill that we have been practiced in our university or curriculum? So, I wish we were more aware of it that these are the guidelines, and due to the place where you're going to work, they might have different. So, if they have different, how are you going to adapt to those ones? So that's the thing I wish that we had.

Students provided useful recommendations to enhance the teaching of RNAO guidelines especially in the early years. This will ground them and motivate them to keep accessing the guidelines for the future. Intentional integration of BPGs in classroom and clinical was a motivating factor as mentioned by students in the earlier section. Students have shared useful strategies that instructors could use which would motivate students to access and include the

RNAO guidelines in their tasks. This will also educate them about the presence or guidelines, format of the guidelines, and the relevant evidence-based recommendations that they could apply in the clinical settings.

More Visibility of Guidelines in courses and around the campus

Four participating students shared some other strategies outside of the classroom which would allow them to keep informed about the guidelines and remain engaged with them. A third-year student suggested making it more visible by placing information on the poster board. She elaborated,

> I think in the university we could have posters or something so that it will be in front of us …So, for example, if every week there's a new BPG on the board, of course, it will be like giving me new information. And I think this would be helpful, also. Or there could be a scan code. Okay. If there is something, there is a new best practice, I will go and scan it and then I'll just read about it (Sara, third-year).

A first-year student Hannah suggested having an RNAO BPGs club which will allow students to remain engaged and learn from each other. Hange Zoe, a fourth-year student suggested having copies placed in the clinical setting for easy access and reading. She said,

> …I feel like if I had a couple of guidelines, hard copy, in the unit or the nursing station, I would just pull it out, look it up, as easy as that. It would be easier for me rather than pull out my phone, and maybe the charge nurse or the head nurse see me on my phone, then I have to explain myself during the shift.

Students shared ideas about how to make the guidelines more visible for them to see and remind them of their presence. It would also allow them to keep up to date on new and revised guidelines. As some of the guidelines which students might have ignored due to their age might have been revised and students can go back to them and use the revised version.

Application from Theory to Practice

Three participating students felt that the emphasis and the application of guidelines in practice were weak. For example, Laiya, a second-year student found that there was a lack of emphasis or opportunity to apply the recommendations in the lab sessions. She said, “So if we are learning it, apart from the in-theory classes or apart from the assignments, we should also be introduced to it in our lab practices”.

A second-year student Qin commented on expanding the learning of the RNAO BPGs to the practice settings so while the students worked with the buddy nurses, they were able to connect and relate to the recommendations together. She said,

> …But it's going to be so good if, for example, we use it in the clinical there or in the hospital itself. For example, when I sign in, people in the hospital like the nurses, they show us the document that they related to. So, it's going to be clearer like, 'Okay, the nurses related to those guidelines'. So, they're going to be more clear for us where they get or take their information regarding the patient's care. So, it might be so helpful if we can do that.

Students recommended including BPGs for clinical assignments. One example of clinical assignment is creating nursing care plans for the assigned patients. Ayesha, a fourth-year student suggested asking students to use a particular guideline as it related to their patient. She also cautioned that if the instructor asked them to use any guideline for their assignment, students generally select the ‘patient and family-centered care guideline’. Hence, guiding them to a few relevant guidelines will allow students to explore more guidelines.

Student participants shared useful recommendations to improve their understanding and utilization of the RNAO BPGs in courses. They suggested that instructors should use class time to explain how to access guidelines, especially in the first-year courses as the first-year students

find it most challenging to navigate the guidelines. Student participants suggested conducting more workshops to teach them about the guidelines at times suitable for all students to attend. They also emphasized on making the RNAO BPGs more visible by posting the updates and summaries on the noticeboard and other channels around the campus for students to see and creating more opportunities for students to practice the recommendations in lab courses and in clinical practice along with their buddy nurses and preceptors. Students suggested including relevant BPGs in the clinical settings and again emphasized that if the instructors mandated the use of certain guidelines, students would look them up and not default to one or two commonly used guidelines. This way the students would be able to explore and learn about new guidelines.

In summary, data from the student questionnaire and interviews suggested that most students across all four years of study were knowledgeable about how to access RNAO BPGs and had utilized several RNAO BPGs for their classroom activities and in their assignments. However, their utilization of the RNAO BPGs was at a superficial level. Many students learned about RNAO BPGs from their instructors. Students commented that the intentional inclusion of BPGs in classroom activities and course assignments motivated them to look up the guidelines and utilize the recommendations in clinical practice. All students found BPGs to be excellent evidence-based tools, however, many students found the document to be too long and overwhelming to review. Specifically, students in the first and second years lacked the knowledge to navigate the BPG document to extract and understand information. Some students found the recommendations for some BPGs challenging to apply in their culture. Whereas others were either unsure or did not find some of the BPG recommendations culturally inappropriate. In general, students recommended having a more structured approach to teaching and integrating RNAO BPGs into the curriculum. Students also identified a gap from theory to practice missing

opportunities to practice the recommendations learned in the classroom in the clinical settings. They also suggested that sharing the learning with their buddy nurses and seeking buy-in from them so that they can learn together and apply BPGs to clinical problems in their daily practice.

Quantitative Findings: Instructors' Data

Demographic Information

Most of the instructors (about 64%) had been teaching at the participating academic institution for two to five years. Twenty-seven percent of participants had over five years of teaching experience.

Instructors' Knowledge about RNAO BPGs

Sixty-three percent of instructors reported that they were familiar with more than seven best practice guidelines. Table 4.5 illustrates instructors' awareness of BPGs by name. 90% of them were aware of 'person and family-centered care' BPG and more than 50% of the instructor participants were aware of the 'falls reduction', 'delirium, depression, and dementia', 'assessment and management of pain', and 'embracing cultural diversity in health care' guidelines. The following BPGs were less known among the instructor participants: breastfeeding (27.3%), developing and sustaining nursing leadership (27.3%), strategies to support self-management in chronic conditions (27.3%), women abuse (9.1%), smoking cessation (27.3%), assessment and management of foot ulcers for people with diabetes (9.1%), enhancing capacity for interprofessional practice (18.2). This could be because of the courses they were teaching and the relevance of the RNAO BPGs to their course content.

Table 4. 5

Instructors' Knowledge of RNAO BPGs by BPG Name

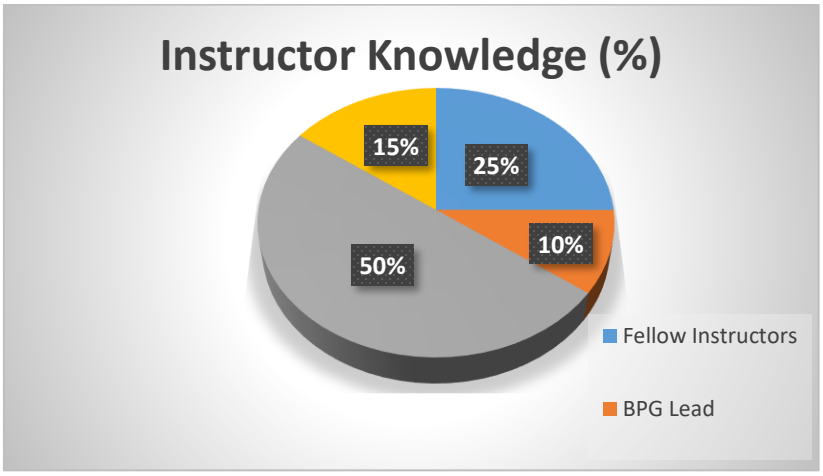
RNAO BPG	Instructor Awareness (%)
Person and family-centered care	90.9
Falls reduction	54.5
Delirium, depression, and dementia	54.5
Assessment and management of pain	63.6
Assessment and management of pressure injuries	45.5
Breastfeeding	27.3
Developing and sustaining nursing leadership	27.3
Preventing and addressing abuse and neglect of older adults	36.4
Strategies to support self-management in chronic conditions	27.3
Women abuse	9.1
Workplace health, safety, and well-being of the nurse	36.4
Smoking cessation	27.3
Assessment and management of foot ulcers for people with diabetes	9.1
Enhancing capacity for interprofessional practice	18.2
Embracing cultural diversity in health Care: Developing cultural competence	54.5
Others (Reported in the free text section)	
Conflict (1 instructor)	
End of life care (1 instructor)	
Facilitating client-centered learning (1 instructor)	
Facilitating cultural diversity in health care (1 instructor)	
Palliative approach to care (1 instructor)	
Care transitions (1 instructor)	
Interprofessional collaboration (1 instructor)	

Some other BPGs not included in the drop-down menu on the questionnaire were also mentioned by participating instructors under the 'other' section as free text, as presented in Table 4.5.

Figure 4.2 shows that half of the instructor participants reported that the major source of their learning about the RNAO BPGs was through workshops. And 25% of the participating instructors reported that they learned about RNAO guidelines from their fellow instructors. Few (10%) came to know about RNAO BPGs from the BPG lead at the study site and 15% learned about the RNAO BPGs from the nursing program of their home country from which they had graduated from.

Figure 4. 2

Instructors' Sources of Learning about RNAO BPGs



Instructor participants' knowledge about RNAO BPGs was further assessed using specific questions in the questionnaire on the Likert scale. Table 4.6 demonstrates the instructor participants' knowledge about RNAO BPGs. Over 90% of the instructor participants agreed or strongly agreed that they were able to identify relevant RNAO BPGs while updating a course outline (question1) and 82% agreed or strongly agreed that they regularly included RNAO BPGs in their courses where applicable (question 2). More instructors (82%) reported they incorporated BPGs into theory courses as compared to practice-based courses (63.7%) (questions 4 & 5).

Table 4. 6

Instructors' Knowledge and Attitudes towards RNAO BPGs

Knowledge and Attitudes	1	2	3	4	5	M	SD
			%				
(1) I am able to identify relevant RNAO BPGs while updating a course outline for courses(s) that I am assigned to teach	0.0	0.0	9.1	36.4	54.6	4.45	0.688
(2) I regularly include RNAO BPGs in my courses where applicable	0.0	0.0	18.2	45.5	36.4	4.18	0.751
(3) I feel that RNAO BPGs are excellent evidence-based tools	0.0	0.0	27.3	36.4	36.4	4.09	0.831
(4) I am able to incorporate RNAO BPGs while teaching theory courses	0.0	0.0	18.2	54.5	27.3	4.09	0.701
(5) I am able to incorporate RNAO BPGs while teaching practice-based courses	0.0	0.0	36.4	36.4	27.3	3.91	0.831
(6) I am inclined to include RNAO BPG as an evidence-based practice tool in the review/design of my course(s)	0.0	9.1	9.1	54.5	27.3	4.0	0.894
(7) I do not actively research for the relevant RNAO BPGs while reviewing/designing course(s)	27.3	45.5	18.2	9.15	0	2.09	0.944
(8) I use RNAO BPGs to complement the content during lectures	0.0	0.0	9.1	54.5	36.4	4.27	0.647
(9) I use RNAO BPGs as an assessment criterion for grading student activities	0.0	36.4	27.3	27.3	9.1	3.09	1.044
(10) I use RNAO BPGs as classroom activities	0.0	0.0	18.2	72.7	9.1	3.91	0.539
(11) I use RNAO BPGs in clinical courses	9.1	9.1	27.3	36.4	18.2	3.45	1.214

Note. Percentage proportion responding 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; M =Mean; SD = Standard Deviation

Instructors' Perceptions and Integration of RNAO BPGs

From the instructors' online questionnaire data (see Table 4.6), it is evident that about 73% or more of the instructor participants agreed or strongly agreed that RNAO BPGs were excellent evidence-based tools (question 3). With regards to using the tools, 90% of instructors used RNAO BPGs to complement the content during lectures (question 8), 81.8% of instructors used them as classroom activities (question 10), and 54.6% of instructors used them in clinical courses (question 11). However, their use as an assessment criterion for grading student activities was low (36.4%) (question 9).

Facilitators and Barriers to Teaching about RNAO BPGs

Table 4.7 displays the results for the facilitators and barriers to teaching RNAO BPGs in the undergraduate nursing program. About 66% of the participating instructors reported that they were not able to find relevant BPGs in the courses they taught (question 12). For example, one of them commented, "Sometimes the BPGs are not fit for purpose, or they are very outdated". Compared to Mobile Application, desktop version was reported to be easier to find relevant content from the BPGs to be included in teaching (questions 13 and 14). With regards to time as a barrier, the responses were somewhat midway as 54.6% of participating instructors agreed or strongly agreed they had enough time to incorporate RNAO BPGs into their courses (question 16). One instructor wrote in the questionnaire about the time constraints, "They are too long, students find it very difficult to complete the readings, end up not reading it". More instructors (54.6%) either disagreed or remained neutral when asked about the availability of support to assist them with the incorporation of BPGs in the curriculum (question 17). Fifty-four percent of instructor participants were not sure and 45.5% agreed or strongly agreed that RNAO BPG

recommendations were culturally appropriate to the current context (question 15). These items were further explored in the interviews for additional details.

Table 4. 7

Instructors' Facilitators and Barriers to Teaching RNAO BPGs

Facilitators and Barriers to Teaching	1	2	3	4	5	M	SD
			%				
(12) I am not able to find relevant RNAO BPGs in the course(s) that I teach	27.3	36.4	9.1	18.2	9.1	2.45	1.368
(13) I find it easy to navigate through the RNAO guidelines to find relevant content to be included in my teaching using mobile applications (smartphone, tablet, iPad)	27.3	0	18.2	45.5	9.1	3.09	1.446
(14) I find it easy to navigate the RNAO guidelines to find relevant content to be included in my teaching using the full desktop version	0	0	18.2	63.6	18.2	4.0	0.632
(15) I find RNAO BPG recommendations to be culturally appropriate to the current context	0	0	54.5	36.4	9.1	3.55	0.688
(16) I have enough time to incorporate RNAO BPGs in the course content	0	18.2	27.3	27.3	27.3	3.64	1.120
(17) There is enough support available to assist instructors with incorporating RNAO BPGs into the curriculum	9.1	9.1	36.4	45.5	0	3.18	0.982

Note. Percentage proportion responding 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree; M =Mean; SD =Standard Deviation.

Qualitative Findings: Instructors' Data

Hand coding, as well as NVIVO software, was used to extract codes and themes from the interview transcripts. The interview transcripts were read and re-read, and instructor quotes were classified as per the keywords and topics that aligned with the research questions. Those codes and topics were further categorized and were grouped under themes. The themes identified were

in alignment with the research questions and overall aim and the purpose of the study. Five themes were extracted from my coding of instructors' interview data: (1) instructors' perceptions about RNAO BPGs, (2) strategies utilized by instructors to include BPGs in the curriculum, (3) facilitators to using RNAO BPGs, (4) barriers of integrating RNAO BPGs in courses, and (5) recommendations to enhance the curriculum design and teaching practices.

Instructors' Perceptions about RNAO BPGs

Instructors were asked to share their views about RNAO BPGs and more specifically to comment about their perception of them being evidence-based tools. Five out of nine participating instructors commented that the guidelines were based on current evidence at the time of their development. One instructor appreciated the process that was followed to develop the guidelines and the involvement of the multidisciplinary teams to work on these guidelines. For example,

> I would rate them (RNAO BPGs) as very good evidence-based tools. I think the amount of research that is put into it and the quality of how they're made and all of that, I think it's very, very well done. It's very good evidence. They're solid, they've explained how they came to those conclusions, and you can follow the recommendation, and it all makes sense. They're very well created. So, I've got absolutely no issue with them. It's really the currency that is the main one that I've got (Maria).

Cara commented that the unique aspect was these guidelines were developed specifically for nurses whereas other guidelines were not discipline specific. She said,

> What I do find unique about RNAO BPGs is that they're developed by a multidisciplinary team, which I am really an advocate for, but they're specifically for nursing, so I really appreciate that. When I look at them, they really resonate with me and my practice.

About the scope and comprehensiveness of the guidelines, the instructors' perceptions were mixed. Molly did not find them comprehensive. She stated, "I don't find them as comprehensive, and it's because I've got the cardiac guidelines and the diabetes guidelines (from a different evidence bank) to compare it with, which are extremely comprehensive." In contrast, Jacky found them very comprehensive and complete in terms of the content of the guidelines. She commented, "…Although they can be big, I think it's just a nice, great way to synthesize all of that data and put it into one".

Four instructor participants had good reviews of the guidelines and talked about the guideline's development process utilizing the systematic review approach. However, they were concerned that by the time the guidelines get published, the evidence could be outdated for some recommendations. For example, Waheed commented,

> One of the things that I am aware of is that these best practice guidelines are systematic reviews. So they go to the most recent evidence, and this is where the challenge is. So, depending on when it was published. So, it was published in - I don't know - 2015. It means that everything that they have included is older than 2015, maybe even up to 2015. So since then, there's been seven years, and every day there's whole new evidence being published. So, they have done a good job, but then I don't know what their process is for the ongoing review and update of the guidelines. That, to me, is a big question.

Overall, most instructors agreed that the RNAO guidelines went through a rigorous process of development and used the best evidence based on systematic review of the literature of the topic of the guideline at the time of development. However, some were not convinced if the evidence was still current for some of the guidelines.

Strategies Utilized by Instructors to Include BPGs in the Curriculum

The below text provides an explanation and examples of how instructors used RNAO BPGs in the design and the review of the course; and teaching and assessment strategies utilized by the instructors to teach about RNAO BPGs in the classroom and the clinical settings.

Course Design and Review

According to most of the instructor participants, common practice was to align the course learner outcomes and the concepts with the relevant BPGs when they were updating course outlines for submission to the curriculum committee. Instructors either included the guidelines as references, complemented their lectures, or mandated the use of relevant guidelines in assessments (papers or presentations). For example, Morgan explained that she would normally go through the RNAO website to look for guidelines that could complement the content and the course she was teaching.

Noor also used a similar strategy when deciding on which BPG to include in her course outline. She said,

> I decide which BPG to use based on my course learners' outcome. And then one of the learners' outcomes in our course outline is to utilize evidence-based practice. So that one which is very much aligned. And then there are course objectives. For example, conflict. For example, professionalism. For example, patient-centeredness. So those themes come in course objective and course concepts, and that's how I decide which BPG to use.

Cara also searched for the BPGs that aligned with the concepts of her course to be included in her course design. For the course design and review, instructors described their process of including relevant guidelines by mapping the course concepts or content with the relevant RNAO guidelines. The guidelines would be mentioned in the course outlines either as ‘required reading’

or ‘recommended reading’ If the guidelines were required to complete an assessment, that condition would then be mentioned in the assessment criteria for that assignment.

Teaching and Assessment Strategies Including RNAO BPGs

This sections describes the teaching and learning strategies that were described by the participating instructors about executing the plans they had earlier described about the inclusion of the RNAO guidelines in their respective courses. All participating instructors mentioned using BPGs in a variety of ways. For example, in their classroom activities, discussions, assignments, and during clinical practice.

Classroom Activities Including RNAO BPGs.

Eight out of nine instructor participants mentioned incorporating BPGs into classroom activities (e.g., classroom discussion, as part of an evolving case study, questions to be extracted from a BPG after watching a movie on a related concept and directing students to review a specific recommendation related to the topic of discussion).

Four instructors talked about using specific content from within the BPGs and four other instructors shared that they had split up the guidelines into smaller sections for students to read and comprehend. None of them used the RNAO BPGs in their entirety because of the length and the depth of information. For example, Maria mentioned,

> Sometimes though, because of the heaviness of the document, I have to be quite specific like, ‘Go to Recommendation 1.2’, and see what would be-- so you have to guide them a little bit because if not, the problem is it’s just too much time-consuming. Eventually, when they go to year four or for PDBN courses. It was a bit easier because they're more used to going through documents and they're a bit more experienced, so it doesn't require as much time. But for years two or three, it just takes a lot of time. So, by directing them

> to this, just asking the question about it in class-- but to go through, was taking a big portion of your class to just demonstrate what the RNAO is about.

Morgan on the other had used a teaching strategy where she had divided the content of the BPG among student groups followed up by a large group discussion to synthesize the learning from the BPG. She commented,

> …recognizing that our students can't always-- read a 126-page best practice guideline… what I do is really just break up parts of the best practice guideline. I have assigned teams to really look at that little piece of the best practice guidelines to summarize it for everybody, break off into groups, either in a breakout room or in a real-life group, either write it on a flip chart or share a Google document or share it in chat, describe to the group, look at it critically, what do they think about that? How do they see that in practice? Have they seen it? How could they see it in the future.

Most instructor participants described various teaching and learning activities to incorporate RNAO BPGs. These activities were designed to include parts of the BPG document and required specific directions for students to include aspects of the guidelines based on the class content.

RNAO BPGs in Graded Assessments.

Eight out of 13 participating instructors specified that they had included RNAO BPGs in assessment criteria making it mandatory for students to include RNAO recommendations either for papers, presentations, or for clinical care plans. Jez explained,

> I think that it forces them to go to the site and look at the evidence and look at what's there and then determine, based on the topic that they're choosing, what BPG they want to

> pick. And then, of course, I think they have to know a little bit in order to cite it. So, I think that forces them (to review the guidelines) by having an assignment is a great idea.

Noor commented that she had always added RNAO guidelines in her assessments where applicable. Lisa also provided an example of an assessment where RNAO PBG was a requirement. She mentioned that she had included a requirement to include RNAO guidelines in a reflection assignment for one of the courses and allocated certain points in the rubric for that requirement. Morgan's approach was to invite the students to add any best practice guidelines including RNAO BPGs where relevant in her assignments. She found it beneficial for students to search and select rather than limit them to include a specific one. Cara explained how she had used BPG as an assessment in one of the clinical courses. She explained,

> …We had an assignment, where we got them to look at a BPG that was relevant to some of their clinical practice areas. Then they provide background description, identification of where the BPG recommendations could be used in the current practice, look at intra and inter-professional collaboration opportunities, and explain whether it's applicable here. And they really got to know what are best practice guidelines, how useful they are, and, actually, how much aligned they are with what they're using here or how they could be adapted to fit the context.

Participating Instructors provided several examples of incorporating BPG recommendations as a mandatory component of the assignments for their courses. This practice encouraged students to review the document and incorporate relevant guidelines or relevant sections from the selected guidelines in their assignments.

Use of RNAO Guidelines in Clinical Practice.

There were variations to the extent of using RNAO BPGs during clinical practice. Lack of time and inability to use mobile devices in the practice settings (restrictions for students to use their cellphones on the clinical floors) were barriers to reviewing RNAO guidelines during a clinical shift. However, instructors talked about asking students to look up the RNAO resources for creating patient care plans and for discussions during post-conferences or debriefings.

Lisa provided examples of clinical documents for which students supported their work with RNAO BPGs. She said,

> Not all the units allow it, but when they're working 12 hours, they have more breaks. When they're not busy, they can look through the RNAO BPG when they're doing their reflection, evaluation, and PFTs (Performance feedback tools, a type of formative assessment).

She further elaborated on how students incorporate RNAO BPGs in clinical tools. She said,

> Students do use the RNAO BPGs during evaluation. Each time they are doing the CRNA (Canadian Registered Nurses Association) competencies example from their evaluation they do mention about Best Practice Guidelines, and I encourage them to do that because this is their summative clinical evaluation, midterm, and final. Hence, students summarize and validate their learning using those guidelines.

One participating instructor mentioned that some students also shared those guidelines with their preceptors which meant that they were referring to those during their clinical practice.

She commented,

> I have reported an anecdotal report from students that they took the RNAO to their preceptor, especially when you were thinking like final practicum course and all those courses that they use this, and it was well received by the environment. So, I don't have any negative aspects of this. And I think the students were able to make that distinction that this is what's happening, and they were actually quite happy to just show their preceptor. So, it was kind of a sharing moment. (Maria).

In summary, instructors acknowledged that there were benefits to reviewing and sharing the RNAO BPG resources during clinical practice but there were limitations including the fast pace of clinical shift and inability to use the mobile devices either because of restrictions or network connection.

Facilitators to Using RNAO BPGs

All participating instructors shared their perspectives on the facilitators and barriers to incorporating RNAO guidelines in the curriculum. The following section presents the subthemes within the facilitators and barriers.

The participating instructors talked about many facilitators which are grouped under the following sub-themes: (a) self-motivation, (b) organizational support, (c) availability of the Mobile Application, (d) language, content, and format of the guidelines, and (e) presence of BPG champions.

Self-Motivation

Three participating instructors mentioned that the biggest facilitators were themselves. If they were invested in and wanted to incorporate best practices, they would explore, learn, and find ways to use the best practice guidelines. For example,

> So I would say the best facilitator or barrier could be myself. That is how much I believe in it; how much I feel confident or find it user-friendly. And yeah, that is the most important, in my opinion, what I like to do. And if I feel that-- so whenever I found it difficult, I didn't use it. So that was my barrier (Noor).

Self-motivation was connected with curiosity and vested interest in finding ways to learn and incorporate best evidence in the teaching either in theory or in clinical practice.

Organizational Support and Intentional Efforts to Incorporate BPGs

Since RNAO BPGs were mandated as part of the nursing curriculum as it was a requirement to keep the designation, the infrastructure, and the support were already there, which was one of the biggest facilitators as commented by seven participating instructors. For example, Waheed commented,

> The other one is when the university is embarked on this pursuing the BPSO and being established as a BPSO organization and all the more-- and us making deliberate effort…. Deliberately incorporating it into our guidelines and reading material and whatever, then all the more it's sort of-- to me, that's a facilitator. So essentially, I'm looking at personal factors and personal motivators, and secondly, environmental, as the organization has adopted it and has somehow reinforced me to sort of say, 'Okay, we need to make sure that not only we are aware, but also we make our students aware of the guidelines.

Cara also supported the idea that organizational support was a key motivator, she believed that the workplace had a very high value on evidence-informed practice, which was a big facilitator. There was an in-built culture of EBP. She further stated, "We have a clear role for the implementing actions in our BPSO strategic plan. So that really is helpful having-- you can get a released buy-in and having people interested in it and motivated".

One of the courses in the first year, *Introduction to Nursing Practice* intentionally included teaching about RNAO BPGs to support the teaching of EBP which was one of the course concepts. Course instructors found that embedding the modules to teach about RNAO BPGs as part of the course was beneficial and students learned more about EBP because it was intentionally embedded in one of the core courses in first year- *Introduction to Nursing Practice*.

Organizational efforts in mandating BPG use in courses and intentional inclusion of RNAO guidelines in courses were mentioned by participating instructors as facilitators to using BPGs.

Availability of Mobile Application

Mobile Application was mentioned as a facilitator by four participating instructors. For example, “Another facilitator, is the application. So, we can get access. Obviously, facilitator big one, free download, having access. So that is a very positive one” (Maria). Jacky also mentioned the availability of the Mobile Application as a facilitator in the classroom as well as in the clinical setting. She said,

> And then another one would be the App, I would say. So that App, I don't know what happened, I don't know-- we can no longer download. I'm not sure what's going on. But when we had it, it was the best thing because we allotted time in the classroom to ensure that every student downloaded it so that it was always in their pocket because their iPhones were always ready and accessible. Even in clinical, we were always using that when they didn't want to carry those big documents. So, I'm not sure what happened with that App. I've been trying to follow around, but it just disappeared.

The availability of the RNAO Application on iPhone and Android phones was helpful as mentioned by participating instructor in quickly navigating through the guidelines and finding relevant information in a short time as compared to opening the guidelines form the website.

Language, Content, and Format

Three instructors talked about the ease of language, the format of the guidelines, and the content which also includes the summary and the fact sheet as facilitators to using the RNAO guidelines. For example, Morgan commented.

> Now I've noticed that some more of the guidelines are being updated, so they seem to be more current. I think they're very, very easy to read and understand. You don't even have to have-- you don't have to have a research course to understand what's happening. And the way it translates at the end, you don't have to understand what's happening up front. I think those are facilitators.

Maria talked about the various components of the guidelines which she found very useful and overall found the guidelines easy to read. She said,

> …The summary and the background, I think those are very useful because the students need the background very often. If we give them reading in their course outline, to have the summary reviewed, an understanding of the background, for example, if we used the delirium one or something to have all those ones that are very well described. I think it's an easy read. So, I think that this is definitely one of the facilitators to use.

Participating instructors who had read and reviewed the updated guidelines found the format and language easy to read and some sections or content were more useful and relevant to them based on the content that they were teaching.

The Presence of Champions

The presence of BPG champions was also noted as an important facilitator for understanding and incorporating RNAO BPGs into the undergraduate nursing curriculum by three participating instructors. For example, Morgan said, “Having RNAO Champions. Things

like having our BPSO team, having people like BPSO champions, they're resources, and I know they work really hard with students."

The BPSO champions and members of the BPSO committee were found to be providing the needed support to the instructors in understanding and incorporating BPGs in the courses.

Barriers to Teaching about RNAO BPGs

Participating instructors talked about some barriers to teaching and incorporating RNAO BPGs which are grouped under the following sub-themes: (a) discontinuation of Mobile Application, (b) guideline related challenges, (c) lack of time, knowledge, and resources, (d) difficulty to assess students' learning, and (e) cultural barriers.

Discontinuation of Mobile Application

Five participating instructors mentioned that discontinuation of the Mobile Application was a big challenge as it was more convenient to access the guidelines on the phone in any setting they were in. For example, "We have to stretch our head and kind of figure out and go to the main website. And the Apps are just so easy all the time. They can be so mobile, right? So that's one" (Jacky).

The discontinuation of the Mobile Application was found to be a limitation for those who had gotten used to the Application as most participants talked about the convenience of accessing the guidelines through the phone.

Guideline Related Challenges

The ease of the language and the format of the guidelines was mentioned as facilitating factors, but the length, unavailability of the guidelines on various topics, and the currency were mentioned by participating instructors as barriers to using the guidelines. Six out of nine instructors commented that they found the documents too long to navigate through. For example, Maria commented,

> The number of pages is very scary for any student to go through, and I would argue probably for some of the nurses, for anybody to go through until you're so comfortable with them that you know where to quickly get your information. So, it's initially a very scary document for a lot of our students.

The length of the document was viewed as a barrier to regularly reviewing the guidelines to be included in teaching and was commented on by Jez as well. She said,

> I think the challenge would be you'd have to get around them. I mean, the very first time I had seen one of these, it was 172 pages. And so that, to me, is a barrier if they have to look at that and pour through that, and so I see that as a barrier. That's a challenge.

Noor commented on the limited class time to include the guidelines with the purpose of including a meaningful activity. She said,

> I use them as part of my classroom conversations. I try to include them to some extent in my class conversation. But there are challenges. Even if relevant pages are picked to be included in classroom activity, there are too many …To manage the time, pages were divided among smaller groups, however, this does not serve the purpose as students only got to know the pages they read. When the entire class got together to share the learning so what they read, that was not as impactful. So, then I have to weigh, should I even use it? Or should I just pick another article to use to have a better learning.

Another challenge was the lack of availability of guidelines on topics that the instructors encountered or included in their teaching. Molly mentioned that since RNAO guidelines were very specific on certain topics, specifically there was less material on clinical practice, she found other resources such as the guidelines from the Heart and Stroke Association, diabetes, and

Ministry of Public Health (MPOH) more easily available, were comprehensive, and up to date. Hence, she tended to refer to those more than RNAO.

The currency of the guidelines was also mentioned by the participating instructors as one of the issues. Seven instructors commented that some of the RNAO BPGs were outdated, hence, they did not use those in their lectures or discussions. Maria further commented on the currency of some of the guidelines by stating,

> But I think some of them are extremely useful and extremely current and can be always used. My big thing about it is that a lot of them are not current. Best Practice just goes so quickly, especially when you go into a specialty, like cardiac or things like that, it's impossible to keep current. So that's the part that I'm struggling with using them.

Participating instructors commented on the length of the document as a barrier as they could not integrate them fully in the given class time. They also mentioned that RNAO guidelines covered many topics but all topics that were included in the curriculum did not have BPGs from RNAO. The age of some guidelines was a barrier to using them as mentioned by participating instructors. Some though have been updated but there still were some on the website which despite being relevant were considered old.

Lack of Time, Knowledge, and Resources

Keeping themselves up to date on guidelines and modifications was challenging for two participating instructors. Noor mentioned that she did not know how to find time to keep herself up to date on the guidelines.

Lack of time to organize teaching and learning sessions for instructors to learn more about RNAO guidelines was another challenge identified by three participating instructors. For example,

> Lack of time for training, that's another one that's a really big barrier. It's like getting in time-- we've had lunch-and-learns canceled all the time because it's just never a good time

> for people to come. And over the lunch hour, people who really need to actually just take a break, eat, or catch up on emails, things like that (Cara).

Time constraints and lack of knowledge of innovative teaching strategies to skillfully incorporate BPGs while teaching was also identified as barriers for three participating instructors. For instance, Morgan commented,

> And I think actually trying to come up with different teaching strategies just to use in the classroom. It's very difficult sometimes to find something that works, and you end up doing the thing that does work, but it's not necessarily-- it's hard to be creative all the time. So, I mean, I'd love it if there were creative teaching strategies for best practice guidelines, like what other people have done and things like that …there could be way cooler things out there, and I just don't know that.

Participating instructors described lack of time to keep themselves up to date on changes that may have been made to the guidelines, participate in the professional development sessions around BPGs organized by their university, and a need to learn more creative ways to teach BPGs.

Difficult to Assess Students' Learning

Five instructor participants felt that scanning and selecting the recommendations was not contributing to impactful learning because students were not reviewing all the evidence, relevance, and context by just mentioning parts of the guidelines. Three participating instructors mentioned that it was challenging to assess what the students learned about EBP in clinical settings from the way students utilized it. Since many assignments asked students to include RNAO BPG's practice recommendations in their assignment, their application or impact on learning could not be assessed. For example, Noor mentioned,

> The challenge which I have is how I evaluate. So, it's only in my assessment methods, where I put the rubric. And again, how they incorporate very little from one statement of

> practice recommendation they just write. And so, I still struggle to understand how much they understood. Did they read enough to write? Because in their scholarly paper, or …. whichever, they are not going to write huge paragraphs, they will only say BPG and then a few statements. So, I still struggle if they had a good understanding of it, or they are just making one statement just to make reference.

Cara commented on the lack of evaluation indicators for academic BPSOs. She said,

> There are no indicators for whether the use of this is actually beneficial or not to our students besides anecdotal conversations you have with students who say, "Yes. We like RNAO BPGs. We use them in practice. We like them." But there are no real evaluation indicators like they have for healthcare institutions.

Participating instructors struggled to understand the impact of learning and the lack of indicators to measure outcomes in the academic settings.

Cultural Barriers

Four participating instructors commented that although the guidelines could be used in all settings, some recommendations were not appropriate to be implemented in all cultures. Instructors talked about the context and population-related challenges to utilizing some of the guidelines. For example, Jacky talked about a situation where patients' family members were always with the patient, and seeking to obtain information without the presence of the family member was not possible, she said,

> …. I just think of like when you've imagined the patient's kind of-- they're there, but they're never there without their family. And it's almost impossible to ask them, "Hey, can you step out?" So, I almost kind of feel like the students might just read that, and then it's like, how is the application of this going to really happen.

The context and culture in which the nurses practice here are different than those in North America. Hence some of the best practices were difficult to apply for various reasons. For example, the inclusion of the indigenous population as a sub-population in some guidelines like the guideline on substance abuse. Molly commented.

> I've been looking at substance abuse, and I like that. And I think it's really also looking at it from the Canadian perspective. They're looking at the Indigenous population. So, I think if I'm in a country like this, I have to be sensitive about the cultural context as well.

One instructor gave an example of the application of a leadership BPG where the students found the recommendations useful but not applicable due to the culture of their work settings.

Two instructor participants also commented that they learned more about the cultural context by working with students and having discussions about the application of certain guidelines to the local population. For example, Molly commented,

> I think the students, because they're brought up in this culture, start feeling uncomfortable with the question and they start verbalizing it, "Miss, you know I can't say it like that." And then I have to ask them, "Well, how would you say it?" But it made me aware that they're right. I'm learning about things from their point of view. So, I think, as instructors, we're not aware of how this is not appropriate. It's our students that are raising that issue.

It was also pointed out by two of the participating instructors that students needed to be made aware of the differences in culture and context. They should be encouraged to use their discretion while applying those guidelines. For example, Maria said,

> I find they've made a big effort to make them very culturally appropriate. I was just looking at the one for patient-centered, and when they were talking about nonverbal communication, to touch, if it's appropriate in a culture to have direct-- to make eye

> contact if it's appropriate in the culture. So, I think there is big, big effort. So, I don't see this as a big issue. And I think our students know enough about the culture to be able to-- because most of our references are not local anyway, so they have learned with time how to make the distinction. So, I don't think there are big issues.

Morgan further supported this idea by saying, “So I think that overall, we still need to teach our students to be culturally sensitive. Really, everything has to be-- you can't move something from Canada and put it in the Middle East and not have cultural possible challenges.”

The work culture is also different in North America in comparison to the Middle East and some guidelines might not be applicable due to a different work culture and leadership models. However, all participating instructors agreed that students should be made aware of how to utilize the content and recommendations based on cultural relevance and it was important for students to know that cultural difference exists and not everything could be applicable in all cultures. Hence, they need to utilize their judgment and reasoning while applying the recommendations from the guidelines.

To summarize, the instructors interviewed in this study provided examples of various facilitators and barriers to including RNAO BPGs in course design and teaching practices. Other than self-motivation, the inclusion of guidelines in the curriculum as mandated by the university being an academic BPSO was an important facilitator and motivator. In addition, the presence of BPSO champions and the ease of the use of guidelines being in simple language and format was mentioned by some instructors as facilitators. On the other hand, for some instructors, the length of the document was a barrier which did not allow them to regularly include guidelines in their teaching despite being mentioned in the course outline as a resource. For some, the currency of the guidelines remained an issue as they were more inclined to use more current resources. The

inability to assess learning outcomes and the impact of learning from utilizing guidelines in graded assessments were challenges for some instructors. They found that the students were utilizing the information from the guidelines at a cursory level. They also talked about the application of recommendations in a different culture by eluding to the fact that since the guidelines were created in a North American culture, it was inevitable to include population groups and recommendations which were more applicable in that culture.

Recommendations to Improve Implementation of Evidence-Based Teaching Practices

Instructors provided some useful recommendations to enhance the incorporation and teaching of EBT practices including RNAO BPGs. These are grouped under the following sub-themes: (a) improving the format of RNAO guidelines and timely updating of the guidelines, (b) clarifying the mandate of the curriculum regarding EBP, (c) the need for more education, support and alignment in courses, (d) more opportunities to connect to practice, and (e) establish methods to measure impact.

Improving the Format of RNAO Guidelines and timely Updating the Guidelines

Four out of nine participating instructors suggested that the format and length of the guidelines should be looked at to further condense the length of the document for clarity. For example, Waheed commented,

> …These best practice guidelines are extensive. So, when we're teaching our third-year students-- and it has the whole introduction, it has all these committee members, and this, this, whatever. And then there are the summaries. I wish we really wanted to apply them as if it's like an abstract of it. So, for example, in the care of patients with delirium, dementia, and depression, these are the best practice guidelines. This is what you do. So, in terms of the nurse-- maybe they could be summarized as the nursing process. …So, it

> could end up being about three, or four pages, five pages maximum. If we were ever going to make a recommendation to RNAO, that's what they should do.

A second instructor suggested presenting the guidelines in the form of a nursing care plan and a third instructor recommended a provision of a correspondence video so those who learn better by viewing can benefit and not get frustrated with the length of the document.

Timely updating of the guidelines or information to the users about the progress of the updates and changes was suggested by four instructors. For example,

> Or even if they could put an addendum from year to year that said, 'This was reviewed,' or something like that, I think that might add to the veracity a little bit more because I think people just don't have the same respect for them because of the age (Jez).

The review of RNAO guidelines revealed that the review date and guidelines under review are clearly labeled on the first page of the guidelines. However, it is not evident on the list of guidelines page. To access the information about the next review date, one must access and download the guidelines. Instructors' comments about not having a note about guideline review status could be based on their cursory view of the website.

Participating instructors shared their suggestions to improve the format by having condensed version of the guidelines for a quick reference. They also suggested having a corresponding video highlighting key features of the guidelines. The updated status of the guidelines could have been more visible on the first page of the website rather than embedded within each guideline.

Clarify the Mandate of the Curriculum Regarding Evidence-Based Practice

There were also comments from five participating instructors that they felt there was more focus on RNAO BPGs in the curriculum than on EBP in general. For example, Morgan commented,

> Well, I think that just to be really mindful of the language that we use. So RNAO and evidence-based practice, or an evidence-based practice and RNAO. Something like that because I think that ...that message, I feel, gets lost, not just with students but with our instructors as well.

Although being an academic BPSO, the mandate is to promote RNAO BPGs in the curriculum to maintain the designation, however, the overall curriculum mandate is to promote EBT practices and not just RNAO BPGs. When the participating academic institution received the designation, an additional objective was added in the course outlines of all courses which stated, “Integrate evidence-informed practice including best practice guidelines”, the intention was to incorporate all relevant evidence, but it appeared that more emphasis was on the inclusion of RNAO BPGs. Waheed commented,

> And so, are we sort of being biased about pushing RNAO? Well, the other thing that we have to remember is that whether it's a bias or not, the thing is that when they actually-- we're preparing students, nurses for the future, and they're not going to-- we're not preparing them to work in Canada. We're preparing them in this culture here.

He further explained that the local ministry of public health has a list of guidelines which are also easily available and the student should also be made aware of those guidelines.

> We have to tell the students that there is the RNAO, but there's also the clinical guidelines, because their practice and performance is going to be based on their clinical guidelines, not the RNAO. So, if we really are doing a good job, we have to tell them that there is both.

Maria also supported this perception by saying, “Because we're asking to document the RNAO and we're not asking to document any other best practice, we kind of make it-- not

biased, but we are-- We're leading definitely". She further added that the reporting should also ask for other evidence-based tools or resources that the instructors use in their teaching and not just about RNAO guidelines.

Three instructors were also concerned about the message that the students were receiving by having too much emphasis on RNAO BPGs in the curriculum as this might be perceived as RNAO being the only resource to get best practice guidelines. For example, Morgan stated,

> I guess I just don't see the focus on RNAO versus the focus on evidence-based practice. And it is problematic to me because students-- they're younger. They don't necessarily see the gray areas of the world, so they see black and white. So, they make comments about RNAO, but then they actually forget or don't know or don't understand that there are other tools out there. Or the organizations that we take our students to in clinical. Just because they don't use RNAO doesn't mean that they don't use an evidence-based practice tool.

Participating instructors talked about their perception of bias in promoting RNAO BPGs over other evidence-based tools. In their view, more emphasis was given to RNAO BPGs by having a committee to map the guidelines, provide championship workshops, and asking to report back about the use of RNAO guidelines in their courses. They recommended not to lose sight of other useful and local evidence-based tools that should also be emphasized and included in the curriculum in addition to RNAO guidelines.

Need for More Education, Support and, Alignment in Courses

Six participating instructors emphasized that there is a need for more education sessions throughout the year and during the new instructor orientation about how to navigate, critique, scaffold, and utilize the information from the guidelines. There is also a need to teach instructors

about other evidence-based resources that could be included in their courses in addition to RNAO BPGs.

Jezz suggested ways to provide more education to instructors about how RNAO PBGs can be utilized by suggesting that there should be an up-to-date repository on RNAO BPGs and a toolbox where instructors can access relevant information about this resource.

Lisa also emphasized having ongoing education and support in place to teach instructors about utilizing EBP tools. She said,

> Maybe if we can incorporate this during the orientation, will be helpful. And orientation should be followed up not just in the beginning but also midway through the first teaching term. And then I find having a mentor as well will be good, especially if those mentors who can guide new instructors to understand about using best practice guidelines, but we need someone who is really senior and could guide the new instructors so that it could help us to incorporate RNAO BPGs during teaching.

It was also suggested by five participating instructors that there is a need to provide frequent follow-ups and updates on changes to the guidelines as well as teaching and learning strategies to better teach and evaluate the learning from the BPGs. Cara commented on the instructors' lack of understanding of the guidelines, and she mentioned that there should be experts around to guide the instructors about how to approach, navigate, and utilize the content from the guidelines in their teaching.

Waheed emphasized that there should be more alignment of BPGs among courses so that the students get an opportunity to include the same BPG in multiple courses at the same time, while focusing on the content and the concept under review.

Instructors shared their recommendations about having more opportunities and processes in place to get education about RNAO BPGs and more alignment among courses to scaffold and deepen the learning of BPGs.

More Opportunity to Connect to Practice

Three participating instructors emphasized that a better way to enhance the uptake of RNAO guidelines is to connect them to practice. There were recommendations to coordinate with the practice course instructors and with clinical partners so the students could apply the theory to practice and students will learn better that way. Noor elaborated on this point by saying,

> One way which I'm trying is, whenever we ask them to use evidence-based practice, we ask them practical applications of that BPG. So not only knowledge or conceptual information. Application of this BPG. In your current practice, it could be conflict management in your classroom setting. It could be in your clinical setting. But practical. And then every time they write, it's not enough… And what was the impact of what you are just saying that this is helpful? So not using BPG for the sake of that we are using evidence-based practice. If it is not making any impact or bringing any change in your behavior, then I don't want to accept it. And that's a little more work than only source that BPG.

Waheed emphasized that the success of BPG implementation is dependent on the practical application in the clinical settings. He commented that there should be a strong connection between the theory class and its application in the clinical practice area.

The connection between theoretical understanding of BPGs to the practical application in the clinical practice was emphasized by the instructor for better engagement with the BPGs.

Establish Methods to Measure Impact

Four instructor participants commented on not being able to measure the impact or assess behavioral changes with the use of RNAO BPGs. Noor shared her frustration by saying that, since she could not see any behavioral change or a positive outcome in students because this was a limitation of including the guidelines in the theory courses, it was not meaningful.

Waheed pointed out that at the participating academic organizations, there was no mechanism to assess learning related to BPGs in a concrete manner. He commented,

> So, one other thing is just, again, about when we apply the RNAO best practice guidelines in teaching our students, we don't have a mechanism to evaluate the impact of the guideline on the student's knowledge. That is a thing that is lacking. So, this recommendation is not for RNAO. It is a recommendation for the university.

Inability to assess learning from the RNAO guidelines and lack of measurable indicators were barriers and the recommendations by participating instructors was to establish indicators for academic BPSOs.

In summary, the instructor participants recommended condensing the guidelines for them to be more user-friendly and less overwhelming for students in the form of a summary or an abstract. One recommendation was to present the guidelines with a corresponding video for more reach and to cater to all types of learners. There were also clear messages from the participating instructors that although the mandate of the curriculum is to promote EBP with evidence-based resources, the practice seemed biased towards RNAO. There were recommendations to incorporate all evidence-based guidelines into the curriculum and not just RNAO and to include the use of other guidelines utilized by the instructors in the course reports. Participating instructors also cautioned that by emphasizing more on RNAO guidelines, students were also not getting the correct message that there could be other resources and tools other than RNAO which

are evidenced-based and equally reliable. There were recommendations to include the teaching of incorporating evidence-based resources, about RNAO guidelines, and about effective teaching and learning strategies in the orientation as well as on an on-going basis; and having formal expert supports in place who could be mentors and facilitators for other instructors. The instructor participants also emphasized the importance of connecting the learning of the guidelines from theory to practice.

Document Analysis

Eighteen course outlines and reports of the undergraduate nursing courses offered in the Winter of 2022 term were reviewed and analyzed to extract information with regards to instructors' integration of RNAO BPGs into the curriculum. These included three documents from year-one, six from year-two, three from year-three, one from year-four, three elective courses, and two from the PDBN program (see Appendix F). There were two cohorts of year-two, hence there were more courses for review in that year. Also, for year-four, there was only one course being offered in the Winter of 2022, which was the final practicum course.

The analysis of course outlines and course reports helped me to examine the intended BPGs in instructors' course design and their enactment of BPGs in teaching. Table 4.8 presents how BPGs were integrated in the courses as mentioned in the course outlines and the comments shared by the instructors about the BPG use in the course reports.

Table 4. 8

Document Analysis Log

Course	Activities	RNAO BPG	Course Outline Description	Course Report Description
Year 1				
NURS 206-Theory	BPG Exemplar	Professionalism, person and family centered care (PFCC)	As an exemplar to discuss the concept of EBP & PFFC	None Mentioned
NURS 208-Theory	BPG Exemplar	PFFC, embracing cultural diversity	To discuss the concept of culture	Discussion about health policy, RNAO, and BPSO
NURS 210-Theory/Lab	Classroom Discussions	Healthy work environment, falls, use of restraints	None mentioned	Discussion about safety, mental health, falls, elderly, and restraints
Year 2				
NURS 306-Theory/Lab	Classroom Activities	Assessment and management of pain	To discuss the concept of pain	Lectures and class activities
NURS 308-Theory/Lab	Classroom Activities	Establishing therapeutic relationships, integrating tobacco interventions	To discuss complete health history, assessment of systems	Used the five A's for a holistic assessment
NURS 310-Theory/Lab	Nursing Care Plans	Constipation, pain management, proactive approach to bladder and bowel management, integrating tobacco interventions, incontinence supporting adults with an ostomy, pressure injuries	Not mentioned	BPGs integrated in theory classes and labs; preparation of nursing care plans
NURS 312-Clinical	Post Conference	Not Specified	Not mentioned.	Post-conference discussions
NURS 313-Theory/Lab	Classroom Discussions	A proactive approach to bladder and bowel management in adults	To discuss the concept of elimination	BPGs used in the class discussions, pre-reading, and case study
NURS 314-Theory	Classroom Discussions	PFFC, perinatal depression	To discuss the concept of person- and family-cantered care, family dynamics, mental health assessment	BPGs incorporated for interactive learning (breastfeeding recommendations, PFFC, lactation, postpartum depression, maternal assessment)

Course	Activities	RNAO BPG	Course Outline Description	Course Report Description
Year 3				
NURS 408- Theory	Assignment	Sustainable leadership and professionalism, healthy work environment, intra-Professional collaborative practice	Integration in the scholarly paper To discuss the concept of clinical leadership and management and effective teams	BPGs incorporated into the Tedtalk assignment
NURS 412- Theory	Classroom Discussion	End-of-life care, a palliative approach to care	To discuss the concept of end-of-life care	Readings related to end-of-life and palliative care
NURS 414- Theory	Pre-Reading Assessment	Self-management in chronic conditions, PFFC, professionalism in nursing	To discuss the concept of self-management in chronic conditions and ethics; group assignment	BPGs included in the readings and in assessments
Elective Courses				
NURS 451- Theory			None.	None.
NURS 503- Palliative Theory	Lectures and Discussions	Palliative care and end-of-life care	None.	BPGs integrated into the class lectures and discussions
NURS 503- Senior's Needs Theory	Classroom Discussions Assessment	Delirium, dementia, and depression in older adults, falls prevention	To discuss the concept of elder care, delirium in the elderly; included in care plan and scholarly paper	For completing care plan assignments and simulation activities; also for classroom discussions
Year 4				
NURS 502- Clinical	Assessments		None	Used in case study presentation, skills competency
Post Diploma				
NURS 531- Theory	Discussions Assignment	Collaborative care and intercultural nursing	None	To guide students in their understanding of primary health care delivery; used BPG in assignments
NURS 533- Clinical	Classroom activities	Embracing cultural diversity in healthcare, intra-professional collaborative practice among nurses	To discuss the concept of community health assessment	BPG used in an activity to allow the students to get to know each member of their group

Note. The log includes all nursing courses being taught in the Winter 2022 term.

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From the log in Table 4.8, it is evident that RNAO BPGs were mentioned by the instructors in 11 of the 18 course outlines mostly in the 'calendar at a glance section', and 16 course reports described the use of BPGs across all years of study. More specifically, RNAO BPGs were mentioned in the course outline for two year-one courses, four year-two courses, three year-three courses, one elective course, and one PDBN course. With regards to course reports, two year-one courses, six year-two courses, three year-three courses, two elective courses, one year-four course, and two PDBN courses included an explanation about how the RNAO BPGs were included in the courses. It was however not evident whether the learning of the BPGs was scaffolded across the years because the course outlines or the course reports did not specify the learning outcomes or the objectives of incorporating the BPGs across the different years of study.

Instructors across all years of study aligned the RNAO BPGs to the concepts to be taught in their courses. For example, The BPG on 'person and family-centered care' was included in year-one to teach the concept of 'EBP' and the concept of 'person and family-centered care' and in years-two and three as classroom activities and in assignments to teach the concept of 'person and family-centered care'. Other examples included, (a) BPG on a 'proactive approach to bladder and bowel management in adults' was included in classroom and lab activities in year-two to teach the concept of elimination, (b) BPG on 'strategies to support self-management in chronic conditions' was utilized in year-three to teach the concept of 'self-management in chronic lifelong condition', (c) BPG on 'sustainable leadership and professionalism' was utilized in an assessment in year-three to further strengthen the teaching of the 'concept of clinical leadership and management', and (d) BPG on 'embracing cultural diversity in healthcare:

Developing cultural competence' was included in a community course to teach the concept of 'community assessment.'

Joint Display of Findings

The following section presents a joint display of the qualitative and quantitative findings from the student and instructor participants' questionnaires, interviews, and the analysis of the course outlines and reports. It is presented under the headings of: (1) knowledge and perceptions about RNAO BPGs (see Table 4.9), and (2) facilitators and barriers to using RNAO BPGs (see Table 4.10). The joint display of the data visually integrates the mixed-methods findings in a single display for easy interpretation and triangulation (Creswell & Creswell, 2018; Frels & Onwuegbuzie, 2013).

Table 4. 9

Joint Display-Knowledge and Perceptions of RNAO BPGs

Theme	Students' Data	Instructors' Data
Knowledge of RNAO BPGs		
Questionnaire	-Familiarity with BPGs: Person and family-centered care (78.6%) Falls reduction (55.3%) Assessment and management of pain (56.3%) Delirium, depression, and dementia (40.8%) -63.2% student participants were knowledgeable about how to access RNAO BPGs (question 1)	-Familiarity with BPGs: Person and family-centered care (90.9%) Falls reduction (54.5%) Assessment and management of pain (63.6%) Delirium, depression, and dementia (54.5%) -91% instructor participants agreed or strongly agreed that they were able to identify relevant RNAO BPGs while updating a course outline (question 1)
Interviews	"In the beginning, we didn't know how to use BPG. Even in the assignments, we didn't know how can we mention them and how can we talk about BPG. ..Sometimes, they don't tell us how to use it" (Shoug, fourth-year)	"I think it should be implemented in our course outline, and maybe we should even have a guide of instructions on how to use that. Even, for me, I may know something, but it's still not very clear" (Lisa)
Document Analysis	Instructors across all years of study aligned the BPGs to the concepts to be taught in their courses	

Theme	Students' Data	Instructors' Data
	Learning Activities Utilizing RNAO BPGs	
Questionnaire	61.4% of student participants included RNAO BPGs in their assignments when required, and 29% included RNAO BPGs in their assignments even if it was not a requirement (questions 3 and 4) 38.6% looked up RNAO BPGs while developing care plans or concept maps (question 5)	81.8% of participating instructors used them as classroom activities (question 10) 36.4% used RNAO BPGS as an assessment criterion (question 9) 95.9% used RNAO BPGs to complement the content during the lecture (question 8)
Interviews	"Mostly assignments. Because they were required. So different types of assignments, like our presentation, and scholarly paper. Sometimes, yeah, also sometimes our clinical reflections. And also, on clinical nursing care plans. In some courses, the instructors would tell us to use them or to look them up" (Ayesha, fourth-year)	"In my assessment method, there is almost every time, one of the criteria of assessment is how did you incorporate RNAO BPGs into this theme? For example, when they were doing change management assignment last term, …they had to incorporate RNAO BPGs into their application of change management" (Noor)
Document Analysis	Five courses (27.7%) specified using BPGs for assessments whereas eleven of the eighteen courses (61%) had incorporated BPGs in the class lectures, discussions, simulations, and clinical post-conferences	
	Clinical Application	
Questionnaire	53.5% student participants saw a connection between the theory and application of RNAO BPGs in clinical practice (question 23) 50% could easily find recommendations that could be applied in clinical practice (question 16)	63.7% instructor participants were able to incorporate RNAO BPGs while teaching practice-based courses (question 5) 54.6% used RNAO BPGs in clinical courses (question 11)
Interviews	"I think (I applied the learning from RNAO guidelines on professionalism), because we've tackled it so much in our last semester, I think remaining courteous, thinking about the principles of professionalism, and applying it or having it in my mind throughout that clinical, was really helpful" (Hannah, first-year)	"Students do use the RNAO BPG during evaluation. Each time they are doing the CARNA competencies example from their evaluation they do mention about Best Practice Guidelines, and I encourage them to do that because this is their summative clinical evaluation, midterm, and final" (Lisa)
Document Analysis	BPGs referred in clinical courses included, 'constipation', 'assessment and management of pain', 'a proactive approach to bladder and bowel management', 'integrating tobacco interventions into daily practice', 'incontinence', 'supporting adults with an ostomy', and 'assessment and management of pressure injuries'	

Theme	Students' Data	Instructors' Data
Evidenced-Based and Impactful		
Questionnaire	64.4% believed that the quality of care improves through the implementation of BPGs (question 8) 46.5% deferred to RNAO BPGs when looking for evidence-based recommendations (question 9)	72.8% instructor participants felt that RNAO BPGs were excellent evidence-based tools (question 3)
Interviews	"I believe they're important, especially important in nursing because we've learned that, in giving care to the patients, we can't just give any type of care, it has to be evidence-based" (Hannah, first-year)	"I wish they were based on more recent evidence. Or even if they could put an addendum from year to year that said, this was reviewed, or something like that, I think that might add to the veracity a little bit more because I think people just don't have the same respect for them because of the age" (Jez)

Table 4.9 shows that regarding knowledge, all instructors were able to find relevant RNAO BPGs. However, 40% of students were not knowledgeable about how to access RNAO BPGs. There was consistency in the findings with regards to more commonly used BPGs in the curriculum which were 'person and family-centered care', 'falls reduction', 'assessment and management of pain', 'developing cultural competency', and 'delirium, depression and dementia.' Students and instructors also provided names of other BPGs in the interviews while explaining their use in activities and in assignments. These include 'a proactive approach to bladder and bowel management in adults', 'integrating tobacco interventions into daily practice', 'clinical leadership and management', and 'end of life care'. Regarding the perceptions of RNAO BPGs as an evidence-based tool, more instructors reported RNAO BPGs being useful and evidenced-based (72.8%) as compared to students (46.5% student participants agreed or strongly agreed that they deferred to RNAO BPGs when looking for evidence-based recommendations) However, 64.4% students believed that the quality of care improves through the implementation of BPGs. During the interviews, all student participants reported BPGs to be evidence-based.

Analyzing the incorporation of the RNAO BPGs into the theory courses, more instructors incorporated BPGs for classroom activities (81,8%) than making it mandatory for students to incorporate BPGs into the graded assessments (36.4%). The analysis of course outlines and reports revealed that 61% of participating instructors used BPGs as classroom activities, and 27.7% in graded assignments for summative purposes. However, in the interviews, eight out of nine instructors (88.8%) talked about incorporating BPGs in classroom activities and the same number verbalized requiring RNAO BPGs for graded assignments. This could be because the requirements might be mentioned in a specific assignment's rubric and not made explicit in the course outlines. Similarly, students accessed RNAO BPGs more when it was required in their assessments (61.4%) as compared to when they were not required (29%).

Although both instructors and students found the guidelines useful and relevant in the practice settings, only 50% of participating students found recommendations that were applicable in clinical settings. A similar percentage (54.6%) of instructors agreed or strongly agreed that they used RNAO BPGs in the clinical courses. The review of documents revealed examples of certain BPGs like 'pain', 'constipation', 'integrating tobacco intervention', 'breastfeeding', and 'pressure injuries' being included in lab and clinical courses and students were expected to utilize the guidelines while developing nursing care plans as well as use examples in the midterm and final clinical evaluation. Hence the incorporation of BPGs into practice-based courses, labs, and clinicals was less as compared to theory courses.

Table 4.10

Joint Display-Facilitators and Barriers to Using RNAO BPGs

Theme	Students' Data	Instructors' Data
	Mobile Application	
Questionnaire	53.5% of student participants found it easy to navigate BPGs through the Mobile Application (question 14) 50.9% found the desktop version easier to navigate through (Question 15)	54.6% of instructor participants found it easy to navigate RNAO guidelines using Mobile Applications (Question 14). 81% found the desktop version easy to find relevant information (Question 15)
Interviews	"One would be the application. I think it's not anywhere available. So, I think if there is an application available for us to download, it would really be useful because everyone nowadays uses a phone. So, I think that's the number one factor" (Hannah, first-year)	"Well, I think the app is really helpful because even if they don't have access-- sometimes the conversation in a class goes to evidence-based practice, and that's not really what you were thinking of doing. So, you can ask students and say, "Okay, well, let's just look it up really quickly. Let's use a resource. I think that mobile technology is really the way to go. …" (Morgan)
	Education and Support	
Questionnaire	50% of student participants reported having enough support available to learn about BPGs in theory courses as compared to 43.9% who found enough support in the application of RNAO BPGs in clinical courses (Questions 18 and 19)	45.5% of instructor participants agreed to have enough support available to assist them with incorporating RNAO BPGs (Question 18)
Interviews	"Actually, maybe the instructors because they keep bringing the RNAO in every concept. So, I feel like they helped me a lot to really look at it and to discover it more and start to use it in my clinical practices" (Qin, second-year)	"But again, having somebody that could maybe direct them to what is important… I think having a subcommittee, making it formal, I think it's definitely going to help. Because thinking of the lack of resources was sort of fading away" (Cara)
	Length, and Currency of the Guidelines	
Interviews	"The main challenge that I'm facing is that with the website, there were a lot of documents, and it's kind of overwhelming. So, I don't know which RNAO BPG should I look to and the amount was overwhelming…" (Hannah, first-year) "Like when I use in my assignments, BPGs that are older than seven years. So, it was very hard to use them, and I couldn't find the latest version of them." (Sara, third-year)	"I think one of the main ones that you'll probably hear is that they're overwhelmingly large and people get overwhelmed with how big they are" (Cara) "My big thing about it is that a lot of them are not current. Best Practice just goes so quickly, especially when you go into a specialty, like cardiac or things like that, it's impossible to keep current. So that's the part that I'm struggling with using them" (Maria)

Theme	Students' Data	Instructors' Data
	RNAO Guidelines versus Other Resources	
Questionnaire	50% of participating students were able to incorporate RNAO BPG recommendations while planning the care of patients (Question 6)	63.7% of participating instructors were able to find relevant RNAO BPGs in the courses they teach, and 27.2% were not able to find relevant BPGs for their courses (Question 13)
Interviews	And other resources are much, I think, easily available. Like if I just type in even on Google and then WebMD or something like that, that has a quicker answer or the drug guide. It has a quicker answer than Best Practice" (Asiyah, second-year)	"…And then with cardiology, we follow Canadian cardiology and European cardiology, and American, right? So, we sort of follow best practice guidelines from them. So those have really been my go-to for best practice guidelines" (Molly)
	Cultural Relevance	
Questionnaire	28.9% of student participants remained neutral and 47.3% responded that the RNAO BPGs were appropriate to be applied to all settings regardless of cultural differences (Question 3)	54.5% of participating instructors remained neutral that they found RNAO BPG recommendations to be culturally appropriate to the current context. However, no one disagreed (Question 16)
interviews	"One thing that I keep seeing is probably having privacy without the family or making sure that the patient is the one telling you about their illness, which I'm like-- it is true, it is applicable, but not so much, because in the country that we live in, mainly men are the ones who explain it and women are the ones who accept men saying all that" (Asiyah, second-year)	"I do think that RNAO, like many things, they are based on a Western idea of healthcare, and they are based on a Western idea of nursing care. And then, no matter what, if you move Western into Middle Eastern, there is a cultural difference. And it's not that it's bad. It's just that we do need to be aware of those things" (Morgan)

Table 4.10 shows that Mobile Application was easy to navigate for both students and instructors (53.5% and 54.6%, respectively). However, more instructors (81%) than students (50.9%) found the desktop version easier to navigate. For 93% of the student participants, instructor support and guidance were the biggest facilitators in assisting them to understand the RNAO guidelines. More students found that there was support in theory courses (53%) than in clinical courses (46%) to incorporate the RNAO BPGs. This could be linked to Table 4.6 where instructors utilized RNAO BPGs more in the theory courses than in the clinical courses. Also, in

the practice settings, the nurses might be following different sets of guidelines and have different approaches to care. From the instructors' point of view about the availability of support, approximately 46% of the instructor participants reported having enough support to assist them in the integration of RNAO guidelines. Students commented on having a more structured approach to learning about RNAO BPGs and how they could extract information. There was more success with the understanding of BPGs and the integration of BPGs in courses where there was an intentional effort or an activity to facilitate incorporating RNAO BPGs. Instructors also pointed out that there is a need to have formal support and guidance from more knowledgeable instructors along with having a written guide as to how RNAO BPGs could be utilized in courses.

Both students and instructors mentioned guideline-related challenges in the interviews as the biggest barrier in not consistently utilizing the RNAO guidelines as an evidence-based resource. There were no specific questions in the online questionnaires about the length and the currency of the RNAO BPGs documents. However, in the interviews, the length of the guidelines, lack of currency, and availability of guidelines on topics they were interested in were reported as barriers. Students' and instructors' quotes led to the conclusion that in the initial phase, the documents appeared overwhelmingly large and did not motivate them to utilize them. However, the more they used the guidelines, the easier it became. The currency of some of the guidelines being older than seven years remained a concern for both the students and instructors. Since the RNAO guidelines were not available for all topics, students and instructors showed a preference for other sources.

Despite the concerns, 67.7% of the participating instructors were able to find relevant BPGs for their courses and more than 80% of instructors regularly included RNAO guidelines in

their courses and in the design of their courses where applicable. Similarly, 50% of students included RNAO BPGs in developing a plan of care for their patients. The motivating factors for both the students and instructors in addition to intrinsic motivation were mandatory use. For students, the motivation was the intentional use and requirements in their assignments for achieving higher grades. When the tasks were graded, students were more motivated to look up and integrate RNAO guidelines (61.4 % of students used it when it was required in the graded assignment and 29% utilized it even if it was not required). For the instructors, the mandatory requirement to include EBP tools including RNAO guidelines in the courses was the motivating factor. They had to include them in the course outlines and report how they utilized the guidelines in the course reports.

There were mixed findings regarding cultural relevance of the RNAO BPGs. About the same percentage of participating students (47.3%) and instructors (45.5%) agreed or strongly agreed that the RNAO BPG recommendations were culturally appropriate to be utilized in all settings. However, many instructors (54.5%) remained neutral to this question. The application of some of the recommendations, for example, the presence of family members during patient interactions and techniques of communication being different in the Middle Eastern cultures were examples of a couple of cultural variations where the RNAO guidelines were perceived as inappropriate to be applied. However, student and instructor participants also supported the idea that one should be aware of such differences, use their discretion, and apply the relevant recommendations as appropriate. A couple of participating instructors mentioned the origin of the guidelines being from the West, was the barrier but was an expected barrier that could be overcome by proper guidance.

Link to the Theoretical Framework CHAT

The CHAT by Yrjö Engeström was utilized as a conceptual framework for this research. CHAT describes the interaction among the participants as well as the environment as they interact to achieve mutual goals and outcomes. As described earlier in this chapter, CHAT also takes into consideration the context and the culture where the activity/activities are occurring. CHAT specifically talks about the various components within an activity system that include *subject, object, instruments, rules, community,* and *division of labor.* After analyzing the results of this research. The goal as explained in chapter two, Figure 2.2, was to evaluate the impact of RNAO BPGs as a means to improve the teaching and learning of EBP and suggest recommendations for further improvement. The most unique outlier was the culture and the context. From the perspective of CHAT, each subject, either the student or instructor talked about their views and perceptions about RNAO BPGs based on their own world view, their understanding of, and their values and beliefs, which is what CHAT emphasized. Each subject goes through his or her own activity system within their environment, culture, and context and among each other to create knowledge and influence outcome. The extent to which they embraced EBP with RNAO BPGs depended on their interaction within their activity system.

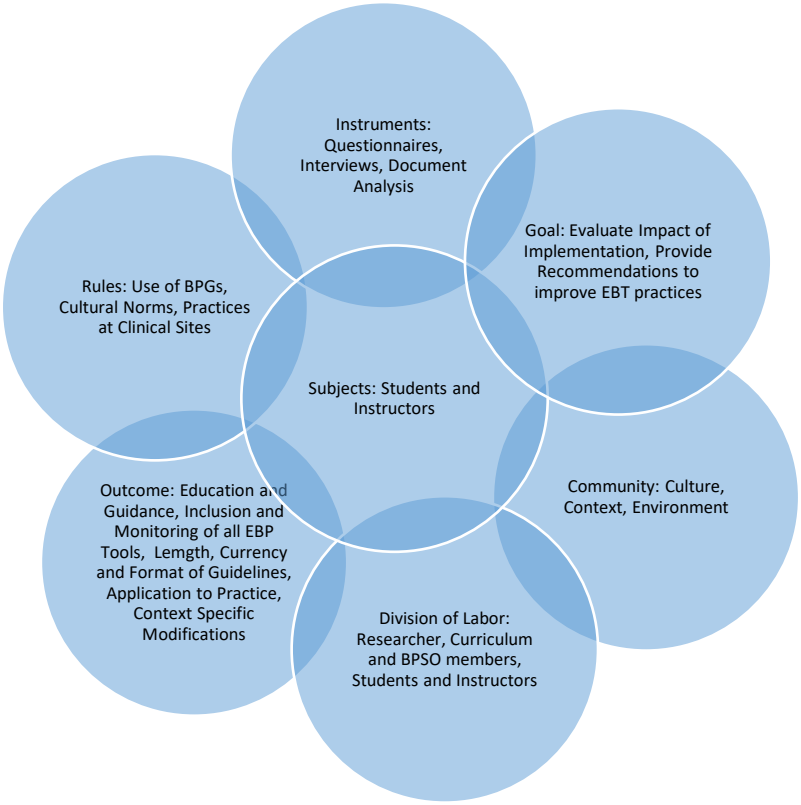
From the students' perspectives, there was respect for the RNAO BPGs, but the uptake was limited due to factors including lack of knowledge, motivation, theory to practice gap, and guideline related challenges (length, currency, and format). The context and cultural related challenges were also brought up by the students but with the recommendation to further explain and discuss.

From the instructors' perspectives, there seems to be a perception of bias towards including RNAO BPGs in the curriculum to improve the teaching and learning of EBP in the

curriculum. Instructors mentioned more focus being given to the integration of RNAO BPGs as compared to other evidence-based guidelines and sources. In view of this analysis the recommendations shared by the students and instructors align with improving the EBT practices in the curriculum. Hence the evaluation of the teaching practices and curriculum integration should not only focus on the use of RNAO guidelines but other evidence-based guidelines as well.

Figure 4. 3

Summary of the Evaluation of the Implementation of RNAO BPGs using CHAT



Summary

From the analysis of the data, it is evident that the overall *outcome* of the integration of RNAO BPGs in promoting an evidence-based nursing curriculum was favorable (with some areas for improvement) in-so-far as it became embedded in teaching practices and the undergraduate learning experiences. The summary of the outcome as presented in Figure 4.3 indicates that students and instructors need more education to efficiently and effectively incorporate the guidelines in courses, the use of BPGs in courses (as evidence-based tools) was evident but lacked depth. Evaluation of the impact of the BPGs on students' learning and their application to practice could not be done. Guidelines were perceived as lengthy, outdated, and not inclusive of all topics. However, there also seemed to be lack of awareness among the students and instructors on the status of the updates of the guidelines. There was a perception of bias towards focusing more on RNAO guidelines versus other evidence-based guidelines and resources. There were reports of actual and perceived cultural barriers. The guidelines are quite explicit and mention a phrase (use if culturally appropriate) with recommendations that could be interpreted as culturally inappropriate. For example, use of touch, eye contact with opposite sex, family involvement in decisions etc. However, the statements by students and some of the experiences mentioned by the instructors about cultural appropriateness could be interpreted as the experience of being "othered" and the need to be "read" as culturally appropriate. The concept of 'being othered' and boundary crossing is also discussed as premise of the application of CHAT in understanding a situation. If the guidelines were created in the Middle Eastern context, there would have been no need to use discretion, it would be completely appropriate based on culture and context.

CHAPTER FIVE: DISCUSSION

In this chapter, I extend the discussion on the overarching research question which was, “How did the integration of RNAO BPGs promote an evidence-based nursing curriculum, teaching practices, and learning experiences in an undergraduate nursing program in the state of Qatar”? The findings of this research also answered the sub-questions examining:

1) What were instructors' and students' levels of knowledge and attitude about RNAO BPGs in the undergraduate nursing program?
2) How did nursing instructors and students perceive RNAO BPGs as evidence-based tools?
3) What strategies were utilized by the nursing instructors to integrate RNAO BPGs into their course design and teaching to raise students' awareness about the usefulness of RNAO BPGs?
4) What were the facilitators and barriers to integrating RNAO BPGs into the course design, teaching practices, and learning experiences within the undergraduate nursing program in the state of Qatar?

CHAT framework was considered in relation to evaluation of the implementation of BPGs’ integration into the curriculum. Relevant literature has been referenced as applicable to the findings and the research questions.

The participating academic institution submits an annual report to RNAO to update how BPGs have been integrated into the curriculum. However, no formal evaluation had been conducted to assess how BPGs were utilized to promote evidenced-based curriculum, teaching, and learning practices, nor what could have been done to improve the implementation process. The purpose of this research was to collect data beyond what had been reported by the BPSO

committee to RNAO on an annual basis. By understanding the overall experiences of nursing instructors and students with the BPG implementation, the institution could be further guided on how best to improve the implementation of RNAO BPGs into the curriculum. This research will also contribute to the larger AcBPSO community to enhance the integration and learning of EBP tools including RNAO BPGs in their respective programs.

I have organized this chapter under the following five themes: (1) students' and instructors' knowledge and understanding of RNAO BPGs in the undergraduate curriculum, (2) the integration of RNAO BPGs in the curriculum to promote EBT practices, (3) students' and instructors' perceptions of RNAO BPGs, (4) the application of RNAO BPGs in the local context, and (5) the analysis of the CHAT theory in relation to research findings.

Knowledge and Understanding of RNAO BPGs

From the analysis of student data, it was evident that the participating students were aware of a third of the RNAO BPGs. However, the extent of their knowledge varied. Through a multifaced approach to understanding students' knowledge, students accessed or reviewed several guidelines as specified in Table 4.2. However, the understanding and use ranged from merely opening guidelines to extracting information during classroom discussions, looking up recommendations to create a nursing care plan, incorporating aspects of the guidelines into an assignment, and discussing a guideline during a clinical post-conference.

Students mentioned that if instructors took the time to explain the guidelines, opened the website in class, and helped them navigate the site to extract relevant information, they would be more knowledgeable about how the guidelines should be approached. Most students accessed the guidelines only when instructors emphasized and mandated their use. Some students mentioned that, as they progressed over the years, they learned more about RNAO guidelines, appreciated

them more, and found them useful and relevant. Students also shared comments about the complexity of the document and the need for constant reinforcement, support, and emphasis by the instructors to ensure familiarity with the guidelines. A scoping review by Fiset et al. (2017) and studies by Aglen (2016), Ryan (2016), and Mthiyane and Habed (2018) also identified similar facilitators, including the need for more knowledge and support from instructors to navigate the resources. Major facilitators identified in the scoping review and other studies (Aglen, 2016; Fiset et al., 2017; Mthyiyane & Habed, 2018; & Ryan, 2016) included knowledge of EBP, support from instructors, and other professionals, understanding how to navigate evidence-based information, technology skills, and access to high quality research in an easy, user-friendly format.

With regards to knowledge and understanding of instructors about RNAO BPGs, instructors in my study were able to identify relevant guidelines while updating the course outline and regularly included them in their courses where applicable. Instructors were able to identify 24 RNAO BPGs. The review of the course outline and course reports revealed that BPGs were aligned with the curriculum concepts, utilized as classroom activities, and included in the assignments. The need for support and lack of time to effectively incorporate BPGs into teaching was highlighted by participating instructors as barriers in the questionnaire. In addition, the unavailability of relevant and up-to-date RNAO guidelines on the topics or content of teaching was also mentioned by participating instructors as a barrier to incorporating BPG guidelines in teaching.

With regards to the facilitators, seven participating instructors during interviews mentioned that institutional support in the form of intentional inclusion of the guidelines in the curriculum, an implementation plan to include the guidelines by mapping them throughout the

curriculum, the presence of champions, and support from the BPSO committee were facilitators for them to incorporate guidelines in the curriculum. These findings were consistent with the work of Fiset et al. (2017) and Ryan (2016). They identified that the readiness and preparedness of the instructors, their confidence, and skills to engaging with EBP, a positive attitude towards EBP, and having increased knowledge related to EBP were the main facilitators in the practice and implementation of EBP. On the other hand, the lack of preparedness and competencies among instructors in teaching of EBP (Fiset et al., 2017) as well as lack of time, resources, workload, availability of extensive information, and lack of organizational supports (Malik et al., 2016) were identified as major challenges in the implementation of the EBP curriculum. Additionally, the commitment of faculty to utilize EBP, (Malik et al., 2016), taking a course or participating in educational activities related to EBP (Ryan, 2016), and having an interest in a particular area of research and participation in scientific activities (Fiset et al., 2017) were identified as personal motivating factors that fostered EBP among instructors. Instructors, however, shared their disappointment and dissatisfaction with the level of understanding of guidelines by the students during the interviews. It was apparent that most students were superficially accessing the guidelines and picking some recommendations without understanding or analyzing the recommendations.

This can be synthesized to show that that although the students and instructors knew how to access and locate the relevant guidelines and demonstrated their utilization in theory, clinical, and laboratory courses, their attitudes and inclusion of the RNAO BPGs in the courses varied based on their level of understanding, supports, and opportunities to utilize them. A study by Malik et al. (2016) in Australian universities and colleges with 23 instructors teaching in an

undergraduate nursing program also found that it was challenging to understand and teach EBP and ensure that students fully comprehended the concept.

Further analyzing the issue of students not being able to completely understand, apply, and appraise the guidelines, it can be said that there is a need to strengthen the teaching of EBP among nursing students and instructors. Instructor participants in this research recommended more time to teach students about EBP, specifically about RNAO BPGs, in addition to the champions' workshop being offered to the students and instructors. Offering a separate course and module focused on teaching EBP, including RNAO BPGs would be beneficial in overcoming this barrier. Some examples in the literature include either offering a separate course on EBP or incorporating modules into existing courses. For example, 'Evidence-based Nursing 1', a core module developed and implemented in an undergraduate nursing program, was discussed by Reid et al. (2017). The authors conducted a pilot pre-and post-test study utilizing validated tools (Evidence-Based Practice Beliefs Scale and Evidence-Based Practice Implementation Scale) and revealed statistically significant results before and after implementing the Evidence Based Nursing core module alongside three six-week clinical placements throughout the first year.

Similarly, a quasi-experimental study was conducted by Mena-Tudela et al. (2018) among second-year nursing students in Spain to evaluate the effectiveness of a theoretical (two hours of in-person theory, two hours of online component) and practical classes (consisting of 12 weeks clinical teaching alongside clinical tutors) on students' knowledge, skills, and attitudes towards EBP. The study revealed statistically significant results among the three points of data collection: pre-intervention, intermediate, and post-intervention stages, regarding knowledge and attitude dimensions, though no significant difference was noted in the skills dimension. The

authors suggested that the lack of improvement in the skills dimension could be due to clinical tutor's lack of knowledge and skills in EBP and their relationship with the students. The authors concluded that extending the teaching of EBP from the classroom to clinical settings enhanced evidence-based competence among second-year nursing students. As suggested by Higuchi et al. (2006), it is important to have professional development activities for instructors who work closely with students in practice settings. Both clinical instructors and students reported increased understanding and utilization of clinical practice guidelines in practice after clinical instructors underwent professional development training in best practice guidelines implementation (Higuchi et al., 2006).

For the participating academic institution, a review of the current academic plan will need to be done to include EBP course and/or create modules as part of existing courses to scaffold the learning of EBP and link it to the RNAO BPGs.

Integration of RNAO BPGs in Curriculum

The integration of RNAO BPGs by the students and instructors in their teaching and learning practices is linked with several factors. One key factor is the level of knowledge about incorporating and teaching EBP. As mentioned earlier, instructors in the current research emphasized the need for more education about the teaching and incorporation of RNAO BPGs in their courses. Although the scaffolding and mapping of the guidelines had been completed and shared with the instructors by the BPSO committee members, instructors identified the need to learn how best to incorporate the guidelines to maximize learning.

Unlike other academic settings (Edwards et al., 2005; Ewer et al., 2022; Ploeg et al., 2007; Ritchie et al., 2010), the integration of BPGs into the curriculum at the participating academic institution was not restricted to select BPGs. Both the students and instructors

mentioned incorporating BPGs into teaching, learning, assignments, and clinical practice as they aligned with the content or concept under review. However, certain BPGs were included more frequently than others. For example, ‘person and family-centered care’, ‘falls reduction’, ‘assessment and management of pain’, ‘developing cultural competency’, ‘embracing cultural diversity’, ‘professionalism in nursing’, ‘foot ulcers’, ‘conflict management’ and ‘delirium, depression, and dementia.’

The research findings demonstrated several strategies that were utilized by the instructors and adopted by the students in their coursework, assessments, and clinical practice, including RNAO BPGs. Participants mentioned accessing and reviewing RNAO BPGs during classroom discussions, while working on case studies, for scholarly papers and presentations, in developing nursing care plans, and during clinical post-conference discussions. Ewer et al. (2022) also described similar strategies for integrating selected BPGs into their courses at Nipissing University’s undergraduate nursing program. They included five RNAO BPGs and provided examples of their use in two of their courses. The examples of utility of the guidelines included, intentionally emphasizing guideline implementation throughout the course, using evidence-based tools including RNAO guidelines as part of assignments, posting links to the guidelines on their learning management system, including guideline summaries in lectures, conducting gap analysis and critical reflections of guidelines related to case studies, and patient care scenarios where the care was either lacking or exemplary. Other strategies mentioned in the literature as being useful for teaching and learning EBP included journal clubs, clinical rounds, case discussions, and EBP projects, having champions or specialists in the clinical area, and improving the partnership between academic and clinical placement (Khan & Cooarasamy as cited in Fiset, et al., 2017).

When comparing the strategies utilized by instructors and students at the research site with those mentioned by other academic institutions, performing gap analysis and critiquing guidelines against a specific case study were not mentioned by the participants in my study. These are high-level skills that could significantly enhance undergraduate students' critical thinking and reasoning and might also satisfy the gap instructors identified regarding students reviewing the guidelines at a superficial level. These activities would push students to engage more deeply in reviewing the evidence behind a recommendation.

Students in my research seemed more motivated to review the RNAO BPGs if they were linked with graded assessments. This finding was consistent with Ewers et al. (2022) who described that in their experiences of integration of guidelines, students focused more on content that would be included in exams and tests. They elaborated that heavy reliance on graded assessments hindered their attempt to create a culture where students engaged in learning for the sake of improving safe care rather than for exam success. Hence, there needs to be a more balanced approach, placing enough emphasis on summative assessments that earn more marks while strategically including the teaching of RNAO and other evidence-based tools as formative assessments.

Another challenge was the inability to assess the impact of learning. A review of the course outlines showed that while assignment criteria required students to use RNAO BPGs to complement the literature on the topic or content being assessed, it did not provide the mechanism for assessing the impact of students' learning on EBP. There were no specific assessments requiring students to analyze or critiquing a BPG in the context of a specific scenario or case. Students mentioned referring to BPG recommendations to create nursing care plans, but the scope of my research did not extend beyond the academic setting. I did not include

questions specifically measuring patient care outcomes, nor did I include practice partners as subjects of this research.

Application of BPGs in Clinical Practice

EBP is a seven-step process that includes: (1) cultivate a spirit of inquiry, (2)formulate an answerable question, (3) systematic search for the research evidence, (4) appraisal of the validity, relevance, and applicability of the evidence, (5) integration of the research evidence with the clinical expertise of the practitioner and the wishes of the patients and families, (6) implementation of the evidence-based decision and evaluation of the outcomes, and (7) dissemination of the results (Melnyk & Fineout-Overholt as cited in Reid et al., 2017). In this research, 50% of participating students were unable to incorporate RNAO BPG recommendations while planning patient care in clinical setting (Student questionnaire, question 6) and only 38.6% of student participants looked up RNAO BPGs while developing care plans and concept maps (question 5). Integrating research evidence is a crucial step before students reach the stage of evaluating outcomes. The inability of students to incorporate BPG recommendations could be due to lack of knowledge about how to access and integrate BPGs, and the absence of time and support from clinical instructors and preceptors in clinical settings. Approximately, half of the student participants in my research were unable to connect the theory and application of RNAO BPGs in clinical settings (question 23).

Aglen (2016) conducted a systematic review to investigate how nursing education prepared students for EBP and mentioned some of the problems related to teaching students EBP. The findings revealed that many students were not motivated to gather, evaluate, and use evidence; they relied mostly on the expertise around them for answers, which could imply a lack of confidence and ability to search for and utilize evidence. Students identified lack of

knowledge, negative attitudes, lack of time, lack of support (Fiset et al., 2017), and lack of opportunities in clinical setting for EBP despite having a positive attitude (Ryan, 2016) as barriers to EBP in the clinical setting.

In my research, students identified the need for more education and support to apply the learning of RNAO BPGs in clinical practice settings. As Aglen (2016) and Ryan (2016) pointed out, students do not yet have the intellectual maturity to apply evidence in different situations, in comparison to more experienced practicing nurses. Rather, they need gradual scaffolding of this learning (Ryan, 2016). Nursing students currently in their program of study must be taught not only to acquire knowledge and skills (Kalb et al., 2015), but also to develop the attitude necessary to practice nursing using current evidence to provide safe and competent care to patients.

As Higuchi et al. (2006) noted, it is important that the teaching of clinical practice guidelines is emphasized in real-world settings after being introduced in theory classes for students to integrate evidence as an integral part of their practice. The performance of nursing tasks and learning of skills is often prioritized over the integration of scholarly evidence into clinical practice. Additionally, students and instructors found it time-consuming and considered it a low priority compared to completing assigned nursing tasks (Higuchi et al., 2006). The mindset and the attitude toward looking up current evidence will only come with more reinforcement and discussions with students about the importance of including current evidence in practice.

Scaffolding and embedding of EBP in theory across all years of study is crucial. The participating academic institution strategically mapped the RNAO BPGs and scaffolded learning outcomes from year-one to year-four, as evidenced from the review of course outlines. However,

there seems to be a lack of understanding among instructors about what is expected from a year-one student compared to a year-four student. There is a need to strengthen students' and instructors' understanding strategically scaffolding EBP teaching in the curriculum.

Another factor that hinders the application of evidence from theory to practice is that students did not observe nurses around them actively involved in using research in their clinical practice. Students also did not have opportunities to work with or observe the roles of nurse researchers and nurse educators who demonstrated good practice by utilizing current research in clinical settings (Aglen, 2016; Ryan, 2016). Ryan (2016) mentioned that in addition to the instructor's knowledge and skills, inadequate knowledge and skills among registered nurses or preceptors in the clinical setting to provide sufficient support and encouragement to students in EBP implementation was also a hindrance in the application of EBP in the clinical settings.

In the practice area, students found it difficult to understand how research findings could benefit nursing practice (Aglen, 2016; Fiset et al., 2017, Ryan, 2016). Lack of power to influence clinical circumstances (Aglen, 2016), and overwhelming amount of information were other hindrances in applying research to practice (Fiset et al., 2017). Some of these challenges were attributed to students' expectations that they would receive the correct answer from instructors, nurses, or physicians; they did not see themselves as active participants in creating knowledge and evidence during clinical placements (Aglen, 2016). For instructors to promote EBP among nursing students, emphasis should be placed on guiding students towards the role of knowledge creators, using discretion when applying knowledge to ill-structured, real-world problems by collecting evidence from all relevant sources, not just from research findings (Aglen, 2016).

It can be concluded that the undergraduate nursing curriculum at the participating academic institution is evidence-based because it has intentionally included RNAO BPGs in the

curriculum after mapping relevant BPGs to the courses across all four years of study. The institution has also invested in creating a BPSO committee and champions to support students and instructors in implementing RNAO BPGs. Additionally, the curriculum committee reviewed the course outlines and course reports to assess how BPGs were included in teaching, learning, and assessments. Research findings by Kalb et al. (2015) also validated that including academic, accreditation, and professional standards while teaching; incorporating research findings into teaching; using student course evaluation to change practice; and using evidence to revise courses, design curriculum, and develop course content were practices that supported the use of evidence while teaching. At the participating academic institution, there is however, a need to further strengthen the integration of evidence-based tools in the curriculum based on the findings from this research.

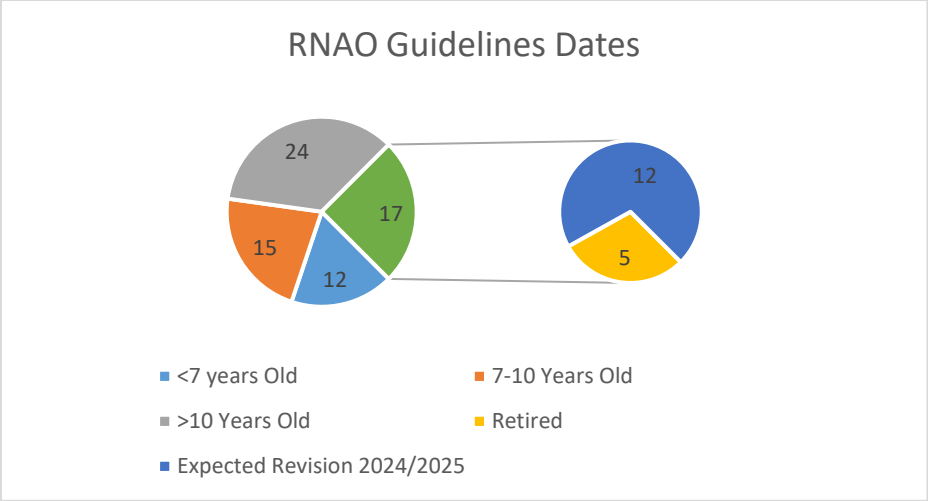
Perception of RNAO BPGs as Evidence-Based Tools

The majority of student and instructor participants considered RNAO BPGs as evidence-based tools. However, there were some concerns about the currency of the guidelines. While comparing the information provided on the RNAO website regarding guideline update status (see Appendix A), 12 guidelines are scheduled to be updated in 2024 and 2025, and one guideline was updated in 2023 (Transition in Care) (https://rnao.ca/bpg/guidelines). RNAO also retired five guidelines that were more than eight years old and has provided links to other guidelines and resources that can be accessed for the topics that were retired. As can be seen in Figure 5.1, 12 out of the 51 active guidelines are either updated or published in the last seven years, which is considered ‘current’ by most users. However, quite a few (24 out of 51 guidelines) are more than 10 years old. Out of these 24, eight guidelines are set to be updated by 2024 and 2025. This information might not have been available on the RNAO website at the time of data collection.

The commonly used BPGs mentioned by the participants were ‘person and family-centered care’ (2015 – to be updated in 2024), ‘falls reduction’ (2017 – to be updated in 2025), ‘assessment and management of pain’ (2013 – to be updated in 2024), ‘developing cultural competency’ (2007 – no updated status), and ‘delirium, depression and dementia’ (2016 – to be updated in 2025). With the newly updated guidelines, the number of current RNAO BPGs will increase. That said one might question what a reasonable timeframe for guideline updates is and whether waiting 10 or more years to update a guideline is acceptable to those who aim to use the most current information.

Figure 5. 1

RNAO Guidelines Update Status



Note: Information synthesized from RNAO guidelines page (https://rnao.ca/bpg/guidelines)

In addition to the concerns about the currency of the guidelines, the format and length of the guidelines were also considered as a barrier to their regular use. Upon reviewing the RNAO BPGs, it is evident that the guidelines are quite lengthy. However, for RNAO to explain and include all relevant information and provide details about the evidence behind each

recommendation, along with resources for teaching and learning at all levels (individual, practice, patient education, and organizational level), the length seems justified. That being said, as shared by the participants in this research, the length and the format present a barrier to utilizing the guidelines regularly. This requires actions to be taken to overcome this barrier.

There also appears to be a gap in notifying students and instructors about the updates from RNAO about their initiatives and the revision of BPGs. The academic BPSOs should develop a way to regularly inform their users and provide ongoing information about the status of the guidelines. While reviewing the RNAO website, it was noticed that unless a user opens a specific guideline for review, the update status is not visible to them on the initial page. For example, the 'person and family-centered care' BPG was published in 2015, but upon accessing the guidelines, the anticipated revision date is mentioned. It would be beneficial if the updated status appeared on the front page alongside with the name of the guideline.

Application of RNAO BPGs in the Local Context

Regarding the relevance of RNAO BPG recommendations to the local context, 28.9% of student participants remained neutral, while 47.3% responded that the RNAO BPGs were appropriate to be applied to all settings, regardless of cultural differences (Student questionnaire, question 3). From the instructors' data, 54.5% of participating instructors remained neutral, while 45.5% agreed or strongly agreed that RNAO BPG recommendations were culturally appropriate to the current context (Instructor questionnaire, question 16). Thus, it can be concluded that approximately 50% of the participants were either not convinced or were unsure if the recommendations were relevant to their context. Similar remarks were shared by the participants during the interviews. One instructor, Morgan commented,

> I do think that RNAO, like many things, they are based on a Western idea of healthcare, and they are based on a Western idea of nursing care. And then, no matter what, if you move Western into Middle Eastern, there is a cultural difference. And it's not that it's bad. It's just that we do need to be aware of those things.

One example from the recommendations of RNAO BPGs on 'women abuse' illustrates the cultural nuances prevalent in the Middle Eastern context, making it complicated for the users to apply the recommendation without proper support and guidance. The recommendation states, "Women should be screened alone and never in the presence of their partner, other family members, … (p. 22)". Asiyah, a student provided an example of the utilization of the above recommendation by stating,

> One thing that I keep seeing is probably having privacy without the family or making sure that the patient is the one telling you about their illness, which I'm like-- it is true, it is applicable, but not so much, because in the country that we live in, mainly men are the ones who explain it and women are the ones who accept men saying all that. And then at times, it's like, okay, if the man is saying maybe the woman is abused. So, we get that thinking but then it is a little different to apply this practice. Maybe she's not abused. Maybe the household is like that. So that is, I think, kind of a barrier over there".

From the above example, it appears that although guidelines were created with consideration of cultural differences, applying them cannot be accomplished without a proper understanding of the culture. Those implementing the guidelines in their context should be mindful of these nuances and should be educated enough to adapt their teaching to include more relevant examples, given the cultural norms and policy statements. Since the policies at the practice sites are all created in consideration of cultural norms and policy statements, unless

there is a policy mandating that family members be excluded from patient interviews, these recommendations despite being evidence-based cannot be implemented.

RNAO BPGs include a disclaimer at the beginning of each guideline which reads, “These guidelines are not binding for nurses or the organizations that employ them. The use of these guidelines should be flexible based on individual needs and local circumstances” (RNAO.nd). Instructors facilitating the use of the guidelines should emphasize this aspect.

Additionally, the institution and instructor should review and critically analyze the RNAO BPGs before mandating their use. This may require providing additional culturally appropriate examples because the situations described in the embedded examples in the guidelines are tailored to Western nursing practices and may not be applicable in the Middle Eastern context. In some cases, these scenarios might even contradict religious and cultural norms. For example, the scenarios mentioned in the ‘establishing therapeutic relationships’ guideline (RNAO, 2006) include,

1) A 13-year-old female comes to the nurse’s office in the public school. The nurse has never met the student before. The student is quiet, withdrawn, and appears on the verge of crying. She tells the nurse she wants some information on how not to get pregnant. The nurse responds by conveying an open and non-judgmental attitude; introducing him/herself by name and designation; explaining his/her role and the services he/she can offer.
2) A male nurse on an orthopedic unit is caring for a young woman who has sustained multiple injuries in a motor vehicle accident. The nurse notes that he enjoys providing nursing care for this young woman and that he is particularly gratified when she tells him that he is able to make her more comfortable than the other nurses. He notices that he has

begun to “push” to receive this young woman as his “client assignment” and that he feels disappointed when she is assigned to other nurses. Moreover, he has begun to fantasize about her, imagining a situation in which she rejects her boyfriend in favor of him. When providing nursing care for the client, the nurse notices that the client’s boyfriend is often “in the way” and that he has resorted to sending him to the waiting room, an intervention he has not seen as being so necessary with other badly injured patients.

In the above examples, the situations are culturally inappropriate in Middle Eastern context. A 13-year-old would not ask for pregnancy-related information, and the school curriculum does not allow for these conversations. Additionally, providing personal care to an opposite-sex patient is not permitted, and the concept of having a boyfriend is neither prevalent nor culturally accepted. Students and the instructors raised concerns during interviews about such cultural conflicts when trying to apply some of the recommendations.

While RNAO BPGs acknowledge cultural differences and suggest adapting the guidelines as appropriate, some users still perceive them as foreign. This reflects the concept of dealing with the ‘other’; ‘us versus them’, or ‘our culture versus their culture’. Here are some examples from the ‘person and family-centered care’ BPG suggesting users to use discretion with the application of guidelines (RNAO, 2015a).

1) Give the person your full attention and use direct eye contact (if culturally appropriate) to observe the person while they are speaking.
2) Demonstrate respect and courtesy through displays of non-verbal behavior, such as shaking hands-on initial contact with the person (if culturally appropriate).
3) Use touch if appropriate to offer reassurance to the person, keeping in mind some individuals are uncomfortable with touch (e.g., culture and past or present abuse).

The Cultural Historic Activity Theory also helps us understand this perspective. The subjects in this case, nursing student and instructors, sought to achieve the outcome of EBP by utilizing RNAO BPGs, as mandated by the curriculum. However, their knowledge and use of the tools were impacted by their cultural and religious backgrounds. They might perceive the BPGs as 'other' and require more resources, support, and education to adapt the relevant recommendations to their local context. RNAO could consider adjusting the language in the BPGs to make them more culturally acceptable, including examples that resonate with Middle Eastern and other non-Western cultures. The participating organization could also create teaching packs for instructors tailored to their context by including culturally relevant recommendations from the guidelines.

Analysis of the CHAT Theory in Relation to Research Findings

In my view, CHAT worked effectively in understanding the implementation and evaluation of the implementation of RNAO BPGs in the participating academic institution. The shared activity is the teaching and learning of RNAO BPGs among the various components of the CHAT framework, which interact with each other as well as within their context, cultures, and environments to influence the goal and the outcome.

The subjects included the students and instructors, who were mandated to utilize the RNAO BPGs (rules) to improve their EBP knowledge, attitudes, and skills with the goal (object) of enhancing students 'and instructors' EBP knowledge that prepares evidence-based practitioners. From the research findings, there appears to be tension between subjects and the rules. This tension may stem from the implied selective inclusion of RNAO BPGs (tools) as predominant tools to achieve the goal. Instructors mentioned that the emphasis on including RNAO BPGs in the curriculum, mapping of the RNAO BPGs, monitoring of the use of BPGs

through course outlines and course reports, creating the BPSO committee, and BPG champions all contribute to a biases approach that focused on one form of evidence-based resource. Enhancing students' and instructors' EBP knowledge and skills can also be achieved by including all relevant evidence-based tools and guidelines, not just RNAO BPGs.

The second element of tension is the utilization of other evidence-based resources in the practice areas for students. The students and instructors seem to face challenges in adhering to the curriculum's mandate to include RNAO BPGs in practice, but they lacked support, resources, and opportunities in clinical settings to fully implement this. The community with its unique context and culture including the patients, staff, and work culture in which clinical partners are mandated to use different set of guidelines, makes it challenging for the subjects to meet their mandate.

The third point of tension is the tools themselves. According to the findings, the RNAO BPGs were difficult to navigate due to their format, length, and participants' lack of knowledge about how to effectively use the documents. Additionally, there was a sense that the Western cultural context embedded in the guidelines made it difficult for the students to utilize some of the recommendations, as discussed earlier. CHAT allowed us to understand these tensions and barriers from the subjects' perspectives. The subjects come from different cultural orientations, knowledge base, and expectations about the norms of practice. Their understanding and perceptions are shaped by their value systems and cultural orientations. Although there are set expectations for nurses to practice within the scope of professional standards (such as those established by the College of Registered Nurses of Alberta (CRNA), CASN, and Department of Health Professionals (DHP)), the interactions between nurses and patients, as well as among colleagues, often reflect cultural differences. These differences make it uncomfortable for

students when they encounter examples in the guidelines that do not align with their cultural norms. With this understanding in mind, there is a need to conduct a thorough analysis of the guidelines and educate the subjects on how to incorporate them, as there is valuable evidence-based content that should be included in the curriculum. The task is to engage students in using discretion, critical thinking, and an appreciation of evidence-based recommendations which can have positive outcomes for both nurses and patients. In addition to the RNAO BPGs as tools, there is a need to broaden the scope of the tools to include other evidence-based resources to achieve the goal of fostering EBT practices.

Summary

To summarize, this MMR successfully answered the overarching research question, "How did the integration of Registered Nurses of Ontario (RNAO) Best practice Guidelines (BPGs) promote an evidence-based nursing curriculum, teaching practices, and learning experiences in an undergraduate nursing program in the state of Qatar". The study also answered the sub-questions regarding students' and instructors' knowledge, understanding, and perceptions of RNAO BPGs, as well as the teaching and learning strategies, facilitators, and barriers to including RNAO BPGs in the undergraduate nursing curriculum. Based on the analysis of the findings, it can be concluded that there is a need to further strengthen the teaching, learning, and evaluation processes related to the implementation of RNAO BPGs in the curriculum. The CHAT framework facilitated the analysis of the problem from the perspectives of the subjects, helping to identify tensions within the components of the activity system and strategies to reduce these tensions to achieve the goal of enhancing EBP at the participating academic organization.

CHAPTER SIX: CONCLUSION

This chapter is organized under the following five headings: (1) successes and challenges encountered with the conduct of the study, (2) implications of research for curriculum redesign and teaching practices using the Knowledge-to-Action framework, (3) implications of the research findings for clinical practice, and (4) implications of research for RNAO and policy change, describing the next steps in addressing the tensions identified within the application of the CHAT framework to successfully integrate EBP tools in the undergraduate nursing program in the Middle Eastern context. I conclude this chapter by discussing limitations of the research study and directions for future research.

Successes and Challenges

The most significant success of the study was the incorporation of multiple data collection methods to understand the research problem and deeply explore the research questions. The questionnaire facilitated the collection of demographic data and quantitatively captured students' awareness of the RNAO BPGs. It also highlighted the extent to which RNAO BPGs were integrated into the curriculum. Encouragingly, at least 50% of RNAO BPGs were somewhat included in the curriculum across all four years of study. The questionnaires also enabled the capture of participants' perceptions, facilitators, and barriers to including RNAO BPGs in teaching and learning practices. Including qualitative measures were extremely beneficial as the interview responses clarified the quantitative data and allowed for further exploration. The document analysis revealed which RNAO BPGs were used in specific courses and how they were integrated.

Another success was the depth of analysis achieved through integrating quantitative and qualitative data and presenting it in the form of a joint display of data, enabling the triangulation

of findings. For instance, while examining the cultural relevance of the RNAO BPGs, if only quantitative data had been analyzed, the participants' in-depth perceptions and understanding of cultural aspects would not have been uncovered. Specific examples shared by the participants helped elucidate their perceptions of the RNAO BPG recommendations and the additional educational needs required to enhance student understand of the BPG recommendations and their application. The thorough review of the course outlines and the course reports allowed me to understand how RNAO BPGs were scaffolded and the gaps in the integration of guidelines in terms of expanding students' level of knowledge and understanding from basic to proficient level.

The third success is the contribution of this study to the body of literature as it is unique in its approach to understanding the implementation of RNAO BPGs. Specifically, how they were integrated into an undergraduate nursing curriculum within the unique Middle Eastern context. The recommendations will benefit not only AcBPSOs, but also other academic settings in integrating EBP into their curricula.

In terms of challenges, the first challenge was deviation from the timeline. Initially, I had planned to collect data by the Fall 2021 term and complete data analysis by January 2022. However, due to personal work commitments and changes in responsibilities, I was not able to begin data collection until the Winter 2022 term.

Second, COVID-19 delayed many deadlines, and the priorities were shifted towards organizing online classes and managing students' and instructors' absenteeism and other logistic issues. I was also very optimistic about writing the chapters. I initially gave myself only two months to complete writing chapters 4, 5, and 6. It took me almost eight months to carefully

analyze and integrate the quantitative and qualitative data, as well as to write chapters four and five including sending drafts to my supervisor for feedback.

Third, from a research perspective, recruitment was a challenge. I was hoping to get insights from the PDBN students. However, I could not recruit any of them for the interviews. Since I was on the academic leadership team, I was careful not to influence their voluntary participation. Their views and insights would have added more information about the RNAO BPGs in the practice settings as they were practicing nurses.

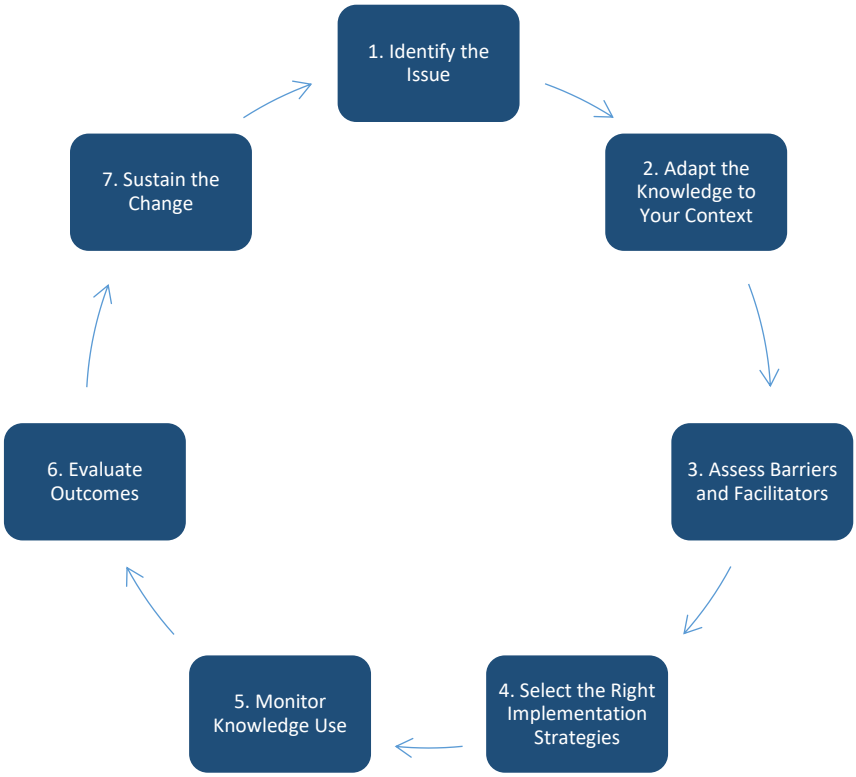
Implications of the Research for Curriculum Redesign and Teaching Practices

The Knowledge-to-Action Framework as described by RNAO (RNAO n.d.) was a good match to recommend changes to the implementation approach. The Knowledge-to-Action Framework was developed by Dr. Ian Graham and colleagues in 2006 and influenced by over 30 change theories, involves a seven-phase action cycle to mobilize knowledge to action (see Figure 6.1). The concerns identified in my research focused on strengthening the knowledge of BPGs and applying that learning in clinical practice.

As shown in Figure 6.1, the research findings contribute to step three of the framework, which involves identifying the barriers and facilitators to integrating BPG implementation into the undergraduate nursing curriculum. Through this research, the implementation strategy was analyzed and evaluated, resulting in recommendations to include changes to the implementation process. Once the changes are implemented (step 4), monitoring and evaluation will need to be completed using relevant indicators (steps 5 and 6).

Figure 6. 1

The Knowledge-to-Action Framework- Action Cycle



Note: RNAO Knowledge to action framework visually presented as suggested in RNAO, (nd)

Currently at the institution where the study was conducted, the curriculum committee and BPSO committee members have provided a mapping document to all instructors, identifying the relevant BPGs based on the embedded course concepts. This is a great start. The participating instructors appreciated this task and found the mapping a significant facilitator in using BPGs. However, alongside the mapping, a scaffolding approach and instructor education need to be included in a more systematic way to improve the teaching of EBP, which will enhance the uptake and learning of EBP among students. A curricular approach that fosters a culture of inquiry is key to the overall goal of safe, evidence-informed practice (Ewer et.al., 2022). Once students understand how to access information efficiently, appreciate the importance of EBP, and

apply what they have learned to achieve positive results in practice, they will be more inclined to include BPGs and other evidence-based tools.

Students mentioned a need for more education and support and appreciated the efforts made by the instructors in teaching them how to navigate the RNAO site to extract relevant information. Instructors, on the other hand, expressed concerns about not having enough time in the classroom and clinical settings to teach students the basics of EBP. Both students and instructors pointed out the theory-to-practice gap and the lack of opportunities, support, and time in clinical settings to apply BPGs. Instructors also requested more resources and strategies to teach EBP and assess its impact on student learning. I propose a two-fold approach to strengthen EBP teaching and learning, including RNAO BPGs. These strategies will also help overcome some of the barriers shared by the participants. The first strategy is the introduction of an EBP course and the second is the integrated approach requiring scaffolding of the EBP competencies to be strategically embedded and evaluated using outcome indicators.

Evidence-Based Practice Course

The proposed EBP course (see Table 6.1) will have asynchronous theory modules and synchronous practical applications within a normally scheduled clinical course. This will be a no-credit course for year two students in the form of a module comprising 20 hours of theoretical content to be covered in the Winter term, with focused assignments to be completed in the clinical course during the Spring term. The theoretical component will be asynchronous and online. Students will be required to complete these modules in their own time, and successful completion of the module will be a prerequisite for clinical practice in year two. This course should be mandated for all students to complete before they reach year three. As suggested by Reid et al. (2017) and Mena-Tudela et al. (2018), teaching EBP in the form of block modules

resulted in a significant impact on students' knowledge and attitudes towards EBP. In the current curriculum, students mostly take theory courses and theory/lab courses during the Winter semester of year two and are in clinical practice during the Spring semester. Table 6.1 describes the proposed course redesign.

Table 6. 1

Evidence-Based Practice Course (not for credit)

Topics	Proposed hours	Assessment	Evidence of Learning
Introduction to Evidence-Based Practice (EBP)	5	Embedded online Quiz	Completion status on the Learning Management System (LMS)
The importance of EBP in improving patient and systems outcomes	5	Self-recorded video on the reflection of EBP importance	Upload video on LMS
EBP Resources including RNAO BPGs	5	Completion of short answers based on content	Upload completed answer sheet on LMS
Evidence Appraisal	5	Completion of a guided notes sheet	Upload completed sheet on LMS
Application of EBP and BPGs in clinical settings	Embedded in the year 2 clinical course	Discussion of the person and family-centered care BPG in post-conference, creation of a patient care plan, and identification of one additional EBP tool used at the practice site	Record of post- conference discussion, satisfactory creation of the nursing care plan, formative feedback from clinical instructor about application of BPGs, and review of the BPGs and other EBP tools

Scaffolding of Evidence-Based Teaching – Integrated Approach

This approach will move from a beginner's understanding of EBP to an expert or proficient understanding by the time the students reach year four. Bloom's taxonomy verbs are quite useful in developing the objectives for students in each year of the study. Appendix G provides the detailed objectives for each year, along with teaching and learning activities and the

outcome indicators that can be captured by the curriculum committee and BPSO committee for reporting purposes. The learning is scaffolded, and the complexity increases as students progress from year one to year four. The benefit of the integrated approach is that instructors will have set objectives and evaluation strategies to work with, and the curriculum and BPSO committees will have defined indicators for reporting. Instructors teaching courses in any year of study will need to incorporate the teaching of EBP as it aligns with their course content and includes the relevant teaching, learning, and assessment strategies. The curriculum committee maps the courses and suggests how scaffolding can be incorporated and revises the course report questions to gather information on the integration of EBP across the four years.

Empowering Instructors to Teach EBP

The inclusion of the above strategies and the proper utilization of the Knowledge-to-Action framework require empowering instructors to teach EBP. Instructors in my research mentioned not having sufficient knowledge, support, time, and resources to include RNAO BPGs and other evidence-based tools. First, the scaffolded approach outlined above will guide instructors in tailoring their teaching, lesson plans, and assessments to include EBP. Second, at the start of each term, a session on EBP and RNAO BPGs can be included to enhance instructors' knowledge and understanding of how to incorporate EBP tools in their teaching. It is also important for instructors to know the scaffolded approach from year one to year four. Often, instructors are only aware of their own course content and are unaware of what students have learned previously or will learn in future years. This lack of awareness can cause anxiety, as instructors may feel it is their responsibility to teach everything about the guidelines, leading to concerns about insufficient time. However, if the scaffolded strategy and mapping are explained to them, they can meet their required learning objective.

Implications of Research for Clinical Practice

As mentioned by Aglen, (2016) and Ryan, (2016), undergraduate students are not cognitively able to understand the relevance of EBP to actual nursing practice. Intentional efforts need to be made to assist students in applying theoretical knowledge in clinical practice. Aglen (2016) suggested that if the approach to teaching EBP changes from an emphasis on retrieving information, evaluating, and summarizing research findings to training students to implement change in clinical settings, then the cognitive limitations in applying knowledge will be reduced. Given this premise, the students need to see evidence in action, observe good role models, and feel empowered to implement change.

The students in my research mentioned not having enough support in clinical settings to either access the guidelines, understand the application of guidelines, or utilize the recommendations for their patients or in their workplace. The participating academic organization is designated RNAO BPSO. However, none of the practice settings where students go for their clinical practice are BPSOs. This means that these practice sites are not mandated to utilize RNAO guidelines. This was reported as a barrier by the participants. However, this does not mean that the practice sites do not use evidence in practice. They use other evidence-based tools and guidelines to guide their practice and policies. To overcome this barrier of not being aligned with the guidelines used by the academic settings and the practice settings, the participating academic institution can strengthen the teaching of the EBP in their practice courses by utilizing the proposed suggestions as presented earlier. This will include intentional strategies in each of the practice courses for students to utilize BPGs and to learn about the evidence-based tools being utilized at the practice sites. The overall goal of including RNAO BPGs was to

support and enhance the teaching of EBP, which can also be achieved by improving students' and instructors' understanding and skills in using EBP.

Another strategy is to discuss BPGs during preceptor workshops, so preceptors understand the curricular practices and learn about RNAO guidelines as well as other EBP tools used at practice settings. By doing this, the students will be able to partner with the practice sites in the implementation of BPGs in their fourth-year courses when working with their preceptors.

Implications of Research for RNAO and Policy Change

The knowledge and understanding of RNAO BPGS among students and instructors can be further explored using the CHAT framework. CHAT suggests that each component within the CHAT triangle goes through its activity system and interacts with other components to create knowledge. Similarly, the participants in this research whether students' or instructors had their knowledge of RNAO PBGs influenced by their level of interaction with their environment, their vested interest, and the availability of a conducive environment, allowing them to further enhance their knowledge and understanding. Although everyone was mandated by the rules (i.e., the curriculum committee) to incorporate RNAO BPGs into their courses, the extent to which they were incorporated depended on the individual instructor or students' commitment, interest, and their perceptions about RNAO BPGs as evidence-based tools.

From the findings of my research, the tensions as identified and discussed in the previous chapters need to be constructively addressed. First, the tension between subjects and rules where more emphasis was placed on including RNAO BPGs in the curriculum as EBP tools, and little or no attention was directed towards including other EBP resources. Although instructors use other resources as they deem appropriate, the focus from the BPSO committee is on supporting and evaluating the use of RNAO BPGs. One suggestion to address this tension would be to

expand the range of tools to include other evidence-based resources in addition to RNAO guidelines. Although the course objectives mention “integrate evidence-informed practice including best practice guidelines”, the emphasis on mapping, teaching, and reporting is limited to capturing the use of RNAO BPGs. The proposed strategy in the form of an EBP course and scaffolding approach, as discussed earlier, seeks to enhance the teaching of EBP by including additional EBP tools along with RNAO guidelines. BPSO members and curriculum committee members will need to revise the mapping to also reference other relevant EBP tools.

The second tension identified was the lack of utilization of RNAO BPGs by practice sites, as they have other EBP resources they are mandated to use. Unless clinical partners also become RNAO BPSO, their mandate will remain focused on other guidelines. For us, creating awareness of RNAO BPGs as EBP tools and learning about other EBP tools used at partner facilities will support the use of all relevant BPGS and resources. Including preceptors and empowering clinical instructors to learn and teach EBP in a scaffolded approach, as described earlier, will enhance the teaching and application of BPGs in clinical settings.

The third tension was the tools themselves. The RNAO BPGs were deemed difficult to navigate due to their format, length, and participant’s inadequate knowledge of how to navigate the documents. There was also a sense of the Western cultural context embedded in the guidelines, which did not motivate students to utilize recommendations, as discussed earlier. The implication of this understanding is to improve the education of participants on the utilization of RNAO BPGs, with an understanding of their strengths, limitations, and relevance. With proper education, a scaffolded approach to teaching, appropriate assessments, and provision of opportunities in the clinical settings with the engagement of clinical instructors and preceptors,

students will be able to overcome this challenge and embrace the use of both RNAO BPGs and other EBP tools.

In addition, lack of knowledge about the status of guideline update and initiation of new guidelines were identified as gaps in implementation by students and instructors. The BPSO committee and the champions can take this feedback to include regular processes to inform and update students and instructors about the status of update and utilize some of the strategies suggested by the participants (information on the notice boards, electronic media, scan codes to review the revised or new guidelines, workshops etc.).

For RNAO, the findings of this research will help them revisit the format and length of the guidelines and attempt to make them more user-friendly. None of the research I reviewed discussed the format of the guidelines as a barrier, but this can be particularly challenging for second language learners, who may take longer to read and process information in a different language. Additionally, participants found the availability of the Mobile Application to be a significant facilitator. RNAO can explore initiating the application again or creating another form of easy to access tool for the users.

Limitations of the Research

My research study was limited in its scope of collecting data from students and instructors at the participating academic institution. Given the limited timeline to complete the research for the Doctor of Education program, the inclusion of clinical partners was not feasible. Although it is extremely important to understand the knowledge, attitude, and skills of the practicing nurses regarding EBP and how they perceive our students' application of EBP, future research could focus on this aspect. Despite this limitation, the research contributes to improving

the implementation of the RNAO BPGs in the participating academic organization and will ultimately improve the teaching of EBP in the undergraduate nursing program.

Recommendations for Future Research

Future research should include:

1. Participants from the clinical practice sites to understand their knowledge, attitude, and skills about EBP.

Proposed research design could be mixed-methods research to understand the knowledge, attitude, and skills of nurses at clinical practice sites regarding EBP. Ethics approval will be required from the institutional ethics board. Participants could include buddy nurses, preceptors, educators, and other relevant nursing personnel involved in creating policies, guidelines, and care standards. Convenient sampling can be used to recruit participants from all clinical sites where students are placed for their clinical placement for the quantitative phase. Purposeful sampling can be used to conduct in-depth interviews or focus group interviews for the qualitative phase.

Existing validated survey instruments can be used to measure EBP knowledge, attitude, and skills. Examples of tools include EBP beliefs scale or EBP implementation scale. Modified version of the tool used in my research can also be used to collect data from the partners. Additional open-ended questions can be added to capture all relevant data. Questionnaire can be distributed using Qualtrics platform. Interview questions can be synthesized using existing literature. Additional questions about EBP tools and guidelines can be added to capture data specifically about which tools and guidelines are utilized at the participating clinical sites.

The benefit of this research will be to align the information about EBP at the clinical sites with that of the RNAO guidelines and other evidence-based tools embedded in the courses at the

academic sites. The outcome of this research will also help inform students and instructors at the academic sites about the EBP at the clinical sites, which will provide credibility to the practices at the clinical practice sites. It will also strengthen the partnership and commitment to EBP and provide collaborative opportunities to enhance EBP activities at both academic and clinical practices sites where gaps are identified.

2. Pilot-test the EBP course (not for credit) across other academic settings with different contexts and cultures. The pilot test will allow to compare findings to finalize the best possible approach to teach EBP including RNAO guidelines, in the undergraduate nursing program.

The methodology could involve pre and post-test questionnaire administered to students via the same learning management system (LMS) where the course will be housed. Completion of the pre and post-test questions can be made mandatory as part of the course requirement. The questions can cover topics such as baseline knowledge of EBP, e.g. familiarity with the concept of EBP before and after the course; confidence in the application of EBP, e.g. (on a scale of 1-5) before and after the course; understanding of EBP resources, including RNAO guidelines, e.g. knowledge about utilizing EBP resources including, RNAO guidelines before and after the course; importance of EBP in improving patient outcomes, e.g. understanding of EBP's importance in improving patient outcome before and after the course; preparedness to apply EBP, e.g. level of preparedness to use EBP in clinical practice before and after the course. Some module specific content questions can also be added to the list of pre and post course questions.

3. Include other academic BPSOs in the implementation of the scaffolded approach to the teaching of EBP and measure the outcomes from the perspective of not only students and instructors but also on the application in the practice settings.

The methodology could be a quantitative study using questionnaire to evaluate participants perspectives on the scaffolded EBP teaching method. Participants would include instructors, students and clinical partners (buddy nurses, preceptors, and nurse educators) at all participating BPSOs. The questions can be Likert scale based. The questionnaire can be distributed at the beginning and end of each academic year over four years. The outcome measure could include:

a. Students' EBP knowledge, attitude, self-efficacy, and practical application of EBP in the clinical settings.
b. Instructors' perceptions of students' readiness and their confidence in delivering the scaffolded curriculum.
c. Clinical partners' perceptions of the impact of the scaffolded curriculum on clinical decision-making, patient care, and the integration of EBP into routine practice by students.

Students' questionnaire could include questions about EBP knowledge (e.g. familiarity with EBP steps, searching for evidence, appraising research, applying BPGs in case scenarios and in clinical practice, critiquing evidence-based guidelines, performing gap analysis). The questionnaire could also assess students' confidence in applying EBP, asking for examples of their application of RNAO BPGs and other evidence-based tools in clinical practice, gauge the perceived relevance of EBP in their future clinical practice, and assess examples of change implementation in clinical practice based on assignment competed in theory courses.

Instructors' questionnaire could evaluate their perspectives on the scaffolded EBP teaching method. The questions could address confidence in teaching EBP, satisfaction with the

scaffolded approach, perceived student readiness for EBP application, and observations of student performance in the application of EBP in practice courses.

Clinical partners questionnaire could measure how the scaffolded EBP approach has impacted clinical practice from the perspectives of buddy nurses, preceptors, and nurse educators. The questions could address observations of student performance in applying EBP, perceived improvements in clinical decision-making, and impact on patient outcomes.

Conclusion

From my study, it is evident that the integration of RNAO BPGs in the curriculum is done well. However, changes are needed in curriculum policies to broaden the mandate and scope for supporting the implementation of various useful resources and guidelines to support the teaching and learning of EBP. One could argue that the benefits of using RNAO BPGs are that they are written by nurses for nurses and are applicable in various settings (acute, long-term care, community, and organizations). However, with the broad understanding of the limitations of using the guidelines (e.g., limited topics, the age of some of the guidelines, availability of other evidence-based resources that may be more relevant to local context), academic BPSOs should be open to adopting all relevant guidelines.

Another key takeaway from my research is the need to strengthen the scaffolding approach to the teaching and learning of EBP. This includes evaluating the implementation of EBP tools by having indicators for each of the scaffolded objectives. For example, if the objective in year one was to create awareness of EBP and identify where and how to access the resources, the indicators should be aligned to review the relevant document and evidence in the courses to measure that outcome.

To conclude, my MMR aimed to understand the implementation of RNAO BPGs in promoting an evidence-based nursing curriculum, teaching practices, and learning experiences in an undergraduate nursing program in Qatar. The study provided valuable insights for the research site, for RNAO, and other academic institutions that aim to integrate RNAO BPGs or any other EBP tools in their curriculum to foster EBP curriculum and teaching practices. The recommendations proposed will not only benefit the research site but also other academic institutions. The facilitators and barriers as identified by this research confirm the findings of other studies conducted in the academic settings with additional insights into the perceptions of some recommendations as culturally inappropriate or difficult to apply in the Middle Eastern context of the participating academic institution. This broad understanding will be useful for RNAO as they work on revising or creating new guidelines.

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APPENDICES

Appendix A: List of RNAO BPGs with Update Status

No.	BPG	First Published	Current Edition	Current Guideline Date	Expected revision	BPG Type
1	Adopting eHealth Solutions: Implementation Strategies	2017	First	2017	None	Health systems. Healthy Work Environment (HWE)
2	Adult Asthma Care: Promoting Control of Asthma	2004	Second	2017	None	Clinical
3	Assessment and Management of Venous Leg Ulcers	2007	First	2007	None	Clinical, older adult
4	Assessment and Care of Adults at Risk for Suicidal Ideation and Behavior	2009	First	2009	2025	Mental health and substance use, older adults
5	Assessment and Interventions for Perinatal Depression	2005	Second	2018	None	Mental health and substance use, population health
6	Assessment and Management of Pain	2013	Third	2013	2024	Clinical
7	Assessment and Management of Foot Ulcers for People with Diabetes	2007	Second	2013	2024	Clinical
8	Assessment and Management of Pressure Injuries for the Interprofessional Team	2011, 2016	Third	2016	2024	Clinical
9	BPG for the Subcutaneous Administration of Insulin in Adults with Type 2 Diabetes	2004	First	2004	Retired	Review 2018 Diabetes Canada Clinical Practice Guidelines
10	Breastfeeding - Promoting and Supporting the Initiation, Exclusivity, and Continuation of Breastfeeding in Newborns, Infants and Young Children	2003	Third	2018	None	Clinical, population health
11	Clinical Practice in a Digital Health Environment	2024	First	2024	None	Clinical, Health systems
12	Crisis Intervention for Adults Using a Trauma-Informed Approach: Initial Four Weeks of Management	2002	Third	2017	None	Mental health and substance use, older adults
13	Decision Support for Adults Living with Chronic Kidney Disease	2009	First	2009	Retired	Clinical
14	Delirium, Dementia, and Depression in Older Adults: Assessment and Care	2010	Second	2016	2025	Clinical, Mental health and substance use, older adults

No.	BPG	First Published	Current Edition	Current Guideline Date	Expected revision	BPG Type
15	Developing and Sustaining Interprofessional Health Care: Optimizing patient, organizational and system outcomes	2013	First	2013	None	Health systems. HWE
16	Developing and Sustaining Safe, Effective Staffing and Workload Practices	2007	Second	2017	None	Health systems. HWE
17	Developing and Sustaining Nursing Leadership	2006	Second	2013	None	Health systems. HWE
18	Developing and Sustaining Interprofessional Health Care: Optimizing patients/clients, organizational, and system outcomes	2013	First	2013	None	Health systems. HWE
19	Embracing Cultural Diversity in Health Care: Developing Cultural Competence	2007	First	2007	None	Equity, diversity and inclusion (EDI), (HWE)
20	End-of-Life Care During the Last Days and Hours	2011	First	2011	None	Clinical, older adult
21	Engaging Clients Who Use Substances	2015	First	2015	None	Children and youth, mental health and substance use, older adults
22	Enhancing Healthy Adolescent Development	2002	First with revision	2010	None	Children and youth, population health
23	Establishing Therapeutic Relationships	2002	First with supplement	2006	None	Children and youth, foundational, mental health and substance use, older adults
24	Facilitating Client Centered Learning	2012	First	2012	None	Foundational, mental health and substance use, older adults, population health
25	Implementing Supervised Injection Services	2018	First	2018	None	Mental health and substance
26	Integrating Tobacco Interventions into Daily Practice	2003	Third	2017	None	Mental health and substance use, population health
27	Intra-professional Collaborative Practice among Nurses	2006	Second	2016	None	Healthy work environment (HWE)
28	Managing and Mitigating Conflict in Health-care Teams	2012	First	2012	None	Healthy work environment (HWE)
29	Nursing Care of Dyspnea: The 6th Vital Sign in Individuals with Chronic Obstructive Pulmonary Disease	2005	First with supplement	2010	None	Clinical
30	Nursing Management of Hypertension	2005	First	2005	Retired	Review the hypertension Canada guidelines.

No.	BPG	First Published	Current Edition	Current Guideline Date	Expected revision	BPG Type
31	Oral Health: Supporting Adults Who Require Assistance	2008	Second	2020	None	Clinical, older adults
32	A Palliative Approach to Care in the Last 12 Months of Life	2020	First	2020	None	Clinical, older adults
33	Person- and Family-Centered Care	2015	First	2015	2024	Foundational
34	Practice Education in Nursing	2016	First	2016	None	Health systems. HWE
35	Preventing and Mitigating Nurse Fatigue in Health Care	2011	First	2011	None	(HWE)
36	Preventing Violence, Harassment and Bullying Against Health Workers	2008, 2009	Second	2019	None	Health systems. HWE
37	Preventing and Addressing Abuse and Neglect of Older Adults: Person-Centered, Collaborative, System-Wide Approaches	2014	First	2014	None	Clinical, older adults
38	Preventing Falls and Reducing Injury from Falls	2002	Fourth	2017	2025	Clinical, older adults, population health
39	Primary Prevention of Childhood Obesity	2005	Second	2014	None	Children and youth, population health
40	A Proactive Approach to Bladder and Bowel Management in Adults	2005	Fourth	2005	None	Clinical, older adults
41	Professionalism in Nursing	2007	First	2007	None	(HWE)
42	Promoting Asthma Control in Children	2004	First with supplement	2008	None	Children and youth, clinical
43	Promoting Safety: Alternative Approaches to the Use of Restraints	2012	First	2012	None	Clinical, older adults
44	Promoting 2SLGBTQI+ Health Equity	2021	First	2021	None	Equity, diversity and inclusion (EDI), population health
45	Promoting Smoking Reduction and Cessation with Indigenous Peoples of Reproductive Age and Their Communities	2022	First	2022	None	Equity, diversity and inclusion (EDI), mental health and substance use, population health
46	Reducing Foot Complications for People with Diabetes	2004	First with supplement	2007	2024	Clinical
47	Risk Assessment and Prevention of Pressure Ulcers	2005	First with supplement	2011	2024	Clinical, older adults
48	Strategies to Support Self-Management in Chronic Conditions: Collaboration with Clients	2010	First	2010	2025	Children and youth, older adults, population health

No.	BPG	First Published	Current Edition	Current Guideline Date	Expected revision	BPG Type
49	Stroke Assessment Across the Continuum of Care	2005	First	2005	Retired	Review the Heart and Stroke Foundation of Canada Stroke Best Practice
50	Supporting and Strengthening Families Through Expected and Unexpected Life Events	2006	First	2006	2024	Children and youth, foundational, older adults
51	Supporting Adults Who Anticipate or Live with an Ostomy	2009	Second	2019	None	Clinical, older adults
52	Supporting Clients on Methadone Maintenance Treatment	2009	First	2009	Retired	Review Engaging clients who use substance (2015) and implementing supervised injection services (2018)
53	Transitions in Care and Services	2014	Second	2023	None	Children and youth, foundational, health systems, older adults
54	Vascular Access	2005, 2004	Second	2021	None	Clinical
55	Woman Abuse: Screening, Identification and Initial Response	2005	First with supplement	2012	2025	Mental health and substance use
56	Working with Families to Promote Safe Sleep for Infants 0-12 Months of Age	2014	First	2014	None	Children and youth

Appendix B: Students' Questionnaire

Name of researchers: Zohra Hasnani-Samnani
Title: **Evaluation of Best Practice Guidelines Implementation in an Undergraduate Nursing Curriculum**

Welcome to the Registered Nurses Association of Ontario's (RNAO) best practice guidelines (BPG) implementation study. You have been taking a nursing course that has a BPG embedded in the course content or assignment. The purpose of this study is to understand the experiences of instructors and students on BPGs implementation in the curriculum in the state of Qatar.
Please be informed that participation in completing this questionnaire is completely voluntary. Your responses and identity will remain confidential and anonymous, and your responses will be used for research purposes only.
There are no known or anticipated risks related to participation in this study. Your opinions are important for us.
You may decide not to complete the questionnaire for any reason, at any time, without consequences of any kind.
Completion of the questionnaire indicates that you have consented to participate in this study.

Section A: Demographics

To help accurately interpreting the responses to the questionnaire, some descriptive information about the participants will be very useful. Therefore, please respond to each of the following items by marking with an 'x' at the appropriate space(s) or by writing information in the space provided. Only provide one answer per question

1. Identify your current student classification at UCQ
a. _____ BNRT (Regular Track) Student
b. _____ PDBN (Post Diploma)Student
2. Identify your year of study
a. _____ first year
b. _____ second year
c. _____ third year
d. _____ fourth year
3. Age
a. _____ 18-25 years
b. _____ 26-35 years
c. _____ above 35 years
4. Gender
a. _____ male
b. _____ female
c. _____ Prefer not to Disclose
d. _____ You don't have an option that applies to me. I identify as _____

5. Please select the course that you took in the fall 2021 term (Sept to Dec 2021) . Select all that apply

NURS 206
NURS 208
NURS 210
NURS 306
NURS 308
NURS 310
NURS 312
NURS 409
NURS 413
NURS 410
NURS 406
NURS 501
Elective -Seniors' Needs
Elective-Global Health
Elective-Cardiac Care
Elective-Cancer Care

6. Type of admission

a. _____ Direct entry
b. _____ Through the foundations program

7. I am aware of (indicate number) BPGs

_____ 0 BPGs
_____ 1-3 BPGs
_____ 4-6 BPGs
_____ 7-9 BPGs
_____ 10 or more

8. Name the RNAO BPGs that you have reviewed so far for completing assignments, classroom activities or in clinical. You can select all that apply. Please also include others in the 'other' box if they are not included in the list.

Person and Family Center Care
Delirium, Depression and Dementia
Breastfeeding
Developing and Sustaining Nursing Leadership
Establishing Therapeutic Relationships
Preventing and Addressing Abuse and Neglect of Older Adults
Primary Prevention of Childhood Obesity
Strategies to Support Self-management in Chronic Conditions
Women Abuse
Workplace Health, Safety and Well-being of the Nurse
Smoking Cessation

Assessment and Management of Foot Ulcers for People with Diabetes
Enhancing Capacity for Interprofessional Practice
Perinatal Depression
Embracing Cultural Diversity in Health Care: Developing Cultural Competence
Other

9. I have learned about RNAO BPGs from (select all that apply)
a. _____ Instructors
b. _____ Classmates
c. _____ BPG champions
d. _____ Through workshops

Section B: Knowledge and attitude towards RNAO BPGs

For each of the statements listed below, please indicate your level of agreement or disagreement by indicating the response that best represents *your views and perceptions*.

The available responses for each item range from 'Strongly Disagree' with a value of '1' to 'Strongly Agree' with a value of '5'. Please be assured that there are no right or wrong responses to these statements.

	Strongly Disagree 1	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
1. I am knowledgeable about how to access RNAO BPGs					
2. I have downloaded the RNAO BPG application on my phone					
3. I include RNAO BPGs in all my assignments when required					
4. I include RNAO BPGs in all my assignments even if it is not required					
5. I look up RNAO BPGs while developing care plans or concept maps					
6. I am able to incorporate RNAO BPG recommendations while planning care of my patients					
7. I find RNAO BPGS useful in all the courses that I am currently taking					
8. I believe that the quality of client care can improve through the implementation of BPG recommendations					
9. I often defer to RNAO BPGs when looking for evidence based recommendations					

Learning About BPGs
Barriers and Facilitators to learning about RNAO BPG.

	Strongly Disagree 1	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
10. I have increased my knowledge of BPG by including them in my assignments					
11. I find RNAO BPGs easy to understand					
12. RNAO BPGs are appropriate to be applied in all settings regardless of cultural differences					
13. I see a connection between the theory and application of RNAO BPGs in clinical practice					
14. It is easy to find BPGs recommendations using the mobile (iphone, tablet, ipad) application					
15. It is easy to find BPGs recommendations using the full desktop version					
16. It is easy to find BPGs recommendations that I can apply in clinical practice					
17. There is enough time to apply evidence-based interventions including RNAO BPGs in clinical practice					
18. There is enough support available to assist students to learn about RNAO BPGs in theory courses					
19. There is enough support available to assist students in the application of RNAO BPGs in clinical courses					

Challenges
What are some of the challenges of using RNAO BPGs in your course work?
What are some of the challenges of using RNAO BPGs in your clinical Practice Settings?

Facilitators
What are some of the facilitators to using RNAO BPGs in your course work?
What are some of the facilitators of using RNAO BPGs in your clinical Practice Settings?

Other comments
Name other evidence-based practice tool that you use in your courses and in clinical

End of questionnaire. Thank you for completing this questionnaire and contributing your thoughts to this research study.

Appendix C: Instructors' Questionnaire

Name of researchers: Zohra Hasnani-Samnani

Title: **Evaluation of Best Practice Guidelines Implementation in an Undergraduate Nursing Curriculum**

Welcome to the Registered Nurses Association of Ontario's (RNAO) best practice guidelines (BPG) implementation study. The purpose of this study is to understand the experiences of instructors and students on BPGs implementation in the undergraduate nursing curriculum in the state of Qatar.

You have been teaching a nursing course that has a BPG embedded in the course content or assignment. We are requesting your input regarding your experiences of teaching about the RNAO BPGs.

Please be informed that participation in completing this questionnaire is completely voluntary. Your responses and identity will remain confidential and anonymous, and your responses will be used for research purposes only.

There are no known or anticipated risks related to participation in this study. Your opinions are important for us.

You may decide not to complete the questionnaire for any reason, at any time, without consequences of any kind.

Completion of the questionnaire indicates that you have consented to participate in this study.

Section A: Demographics

To help in accurately interpreting the responses to the questionaire, some descriptive information about the participants will be very useful. Therefore, please respond to each of the following items by marking with an 'x' at the appropriate space(s) or by writing information in the space provided.

1. Please select the courses that you taught in the fall 2021 (Sept to Dec 2021)

   NURS 206
   NURS 208
   NURS 210
   NURS 306
   NURS 308
   NURS 310
   NURS 312
   NURS 409
   NURS 413
   NURS 410
   NURS 406
   NURS 501
   Elective
   MN

1. List courses you have previously taught at UCQ
   Please list the course name/numbers_____
2. Please indicate number of years you have been teaching at UCQ
   _____0-1 Year _____ 1-2 years _____2-5 years _____>5 years
3. Please indicate number of years you have been teaching overall in the nursing program
   _____0-1 Year _____1-2 years _____ 2-5 years _____ 5-10 years
   _____>10Y
4. Do you have any previous experience with teaching Best Practice Guidelines (BPGs) prior to coming to UCQ. Please select your response from the list below
   _____0Year _____ 1-2 years _____2-5 years _____>5 years
5. Are you a member of BPSO working group?
   _____Yes _____No

Section B: Knowledge and attitude towards RNAO BPGs

For each of the statements listed below, please indicate your level of agreement or disagreement by indicating the response that best represents *your views and perceptions*.

6. I am aware of (indicate number) RNAO BPGs
   _____ 0 BPGs
   _____ 1-3 BPGs
   _____ 4-6 BPGs
   _____ 7-9 BPGs
   _____ 10 or more
7. Please select the RNAO BPGs that you have included in your overall teaching. Please add to the 'other' section if the BPG that you have used is missing from the list
   Person and Family Centre care
   Falls Reduction
   Delirium, Depression and Dementia
   Assessment and management of pain
   Assessment and management of pressure Injuries
   Breastfeeding
   Develop and sustain nursing leadership
   Preventing and addressing abuse and neglect in older adults
   Primary prevention of childhood obesity
   Strategies to support self-management of chronic conditions.
   Women abuse
   Workplace health, safety, and wellbeing of nurses
   Smoking cessation
   Assessment and Management of foot ulcers for people with diabetes
   Enhancing Capacity for Interprofessional Practice
   Perinatal Depression
   Embracing cultural diversity in health care: Developing cultural competency
   Other

8. I have learned about RNAO BPGs from (select all that apply)
a. _____ Fellow Instructors
b. _____ Orientation material
c. _____ BPG Lead
d. _____ Through workshops
e. My own nursing program that I graduated from

Section B. Knowledge and Attitude Towards RNAO BPGS
Read each statement carefully and check the number, which most closely reflects your perceptions.
The available responses for each item range from 'Strongly Disagree with a value of '1' to 'Strongly Agree' with a value of '5'. Please be assured that there are no right or wrong responses to these statements.

	Strongly Disagree 1	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
1. I am able to identify relevant RNAO BPGs while updating a course outline for courses(s) that I am assigned to teach					
2. I regularly include RNAO BPGs in my courses where applicable					
3. I feel that RNAO BPGs are excellent evidence-based tools					
4. I am able to incorporate RNAO BPGs while teaching theory courses					
5. I am able to incorporate RNAO BPGs while teaching practice-based courses					
6. I am inclined to include RNAO BPG as evidence-based practice tool in the design of my course(s)					
7. I do not actively research for the relevant RNAO BPGs while reviewing/designing course(s)					
8. I use RNAO BPGs to complement the content during lectures					
9. I use RNAO BPGs as an assessment criterion for grading student activities					
10. I use RNAO BPGs as classroom activities					
11. I use RNAO BPGs in clinical courses					
12. I use RNAO BPGs to provide feedback on my students' assessments as formative feedback					

Teaching BPGs

Barriers and Facilitators to Teaching RNAO BPG.

Read each statement carefully and check the number, which most closely reflects your perceptions.

The available responses for each item range from 'Strongly Disagree with a value of '1' to 'Strongly Agree' with a value of '5'. Please be assured that there are no right or wrong responses to these statements

	Strongly Disagree 1	**Disagree 2**	**Neutral 3**	**Agree 4**	**Strongly Agree 5**
13. I am not able to find relevant RNAO BPGs in the course(s) that I teach					
14. I find it easy to navigate the RNAO guidelines to find relevant content to be included in my teaching using the Mobile Application					
15. I find it easy to navigate the RNAO guidelines to find relevant content to be included in my teaching using the full desktop version					
16. I find RNAO BPG recommendations to be culturally appropriate to the current context					
17. I have enough time to incorporate RNAO BPGs in the course content					
18. There is enough support available to assist instructors with incorporating RNAO BPGs into the curriculum					

Teaching BPGs: Most Successful Strategies to integrate BPG in courses.

Please list some of the strategies that you found to be most useful in integrating RNAO BPGs in the course that you have previously taught or are currently teaching (list examples)

Challenges

What are the challenges of teaching about RNAO BPGs in classroom?
What are the challenges of teaching about RNAO BPGs in your clinical courses?

Facilitators

What are the facilitators of teaching about RNAO BPGs in classroom?
What are the facilitators of teaching about RNAO BPGs in your clinical courses?

Any Other Comment: Please add any other comments that you may have related to teaching and learning of RNAO BPGs in the undergraduate curriculum at UCQ

End of questionnaire. Thank you for completing this questionnaire and contributing your thoughts to our research study.

Appendix D: Students' Interview Guide

Name of researchers: Zohra Hasnani-Samnani

Title: **Evaluation of Best Practice Guidelines Implementation in an Undergraduate Nursing Curriculum**

Date:_____ Place: _____

Interviewer: _____

Interviewee Pseudo name: _____

Read Aloud:
Welcome to the Registered Nurses Association of Ontario's (RNAO) best practice guidelines (BPG) implementation interview. You have been taking a nursing course that has a BPG embedded in the course content or assignment. The purpose of this study is to understand the experiences of instructors and students on BPGs implementation in the curriculum in the state of Qatar.

Please be informed that this study is towards the researcher's EdD program completion. Participation in his interview is voluntary. Your responses and identity will remain confidential and anonymous, and your responses will be used for research purposes only.

There are no known or anticipated risks related to participation in this study. Your opinions are important for us.

You may decide not to answer any questions for any reason, without consequences of any kind.

Interviewer's notes: *Hand in the informed consent to review and sign. Provide a copy of the consent to the participant.*

Demographic Data

Year of the study: __ first ___ second ___ third ___ forth ___PDBN

Age: ____ 18-25 ___25-35 ___>35 years

Entry to program: ____ direct entry ____ through foundations

Inform the participant to remember their unique identification number should they want to remove themselves from the study

Interview Questions

1. Ice-breaker question: Do you have any question about this research or do you want to clarify anything in the consent document that is not clear?
2. How did you learn about the RNAO PBGs?

a. What was/who was most helpful in telling you about the RNAO BPGs?

3. What are your views about RNAO BPGs?

a. What would you say about RNAO BPGs as evidence-based practice tools?

b. Why do you think RNAO BPGs are evidence-based practice tools?

4. Can you share your experience with regards to using RNAO BPGs in your courses

a. Which BPGs have you used?
b. How have you used them?
c. How did you find the BPGs?
5. Can you elaborate on your experience of using RNAO BPGs in clinical areas?
a. How did you use BPGs in clinical practice?
b. What is your experience of the utilization of RNAO BPGs in the clinical settings?
c. What are your views of the usefulness of RNAO BPGs in clinical practice?
6. In your experience, what are some of the facilitators of using RNAO BPGs in your course?
a. What factors helped you in using RNAO BPGs?
b. What supports or help was useful for you in incorporating RNAO BPGs in your courses?
7. Please explain, what are some of the challenges of using RNAO BPGs?
a. What are some of the hindrances or barriers of using RNAO BPGs?
b. What are some of the reasons that you could not use RNAO BPGs?
8. Do you have anything else to add to the discussion about RNAO BPGs?

Thank you statement

Appendix E: Instructors' Interview Guide

Name of researchers: Zohra Hasnani-Samnani

Title: **Evaluation of Best Practice Guidelines Implementation in an Undergraduate Nursing Curriculum**

Date:_____ Place: _____

Interviewer: _____

Interviewee unique identification number: _____

Interviewee Pseudo name: _____

Add demographic data

Read Aloud:
Welcome to the Registered Nurses Association of Ontario's (RNAO) best practice guidelines (BPG) implementation interview. You have been teaching a nursing course that has a BPG embedded in the course content or assignment. The purpose of this study is to understand the experiences of instructors and students on BPGs implementation in the curriculum in the state of Qatar.

Please be informed that this study is towards the researcher's EdD program completion. Participation in his interview is voluntary. Your responses and identity will remain confidential and anonymous, and your responses will be used for research purposes only.

There are no known or anticipated risks related to participation in this study. Your opinions are important for us.

You may decide not to answer any questions for any reason, without consequences of any kind.

Interviewer's notes: *Ensure that the instructor has already completed the questionnaire. Provide a copy of the consent to the participant.*

Inform the participant to remember their unique identification number should they want to remove themselves from the study

Interview Questions

1. Ice-breaker question: Do you have any question about this research or do you want to clarify anything in the consent document that is not clear?
2. How did you learn about the RNAO PBGs?

a. What was/who was most helpful in telling you about the RNAO BPGs?

3. What are your views about RNAO BPGs?

a. What would you say about RNAO BPGs as evidence-based practice tools?

b. Why do you think RNAO BPGs are evidence-based practice tools?

4. Can you share your experience with regards to using RNAO BPGs while designing a course or updating course outlines

a. How do you go about updating resources related to RNAO BPGs

b. How do you identify which RNAO BPGs to use

5. Can you share your experience with regards to using RNAO BPGs in your teaching

a. Which BPGs have you used?

b. How have you used them?

c. How did you find the BPGs?

6. Can you elaborate on your experience of using RNAO BPGs in clinical areas?

a. How did you use BPGs in clinical practice?

b. What is your experience of the utilization of RNAO BPGs in the clinical settings?

c. What are your views of the usefulness of RNAO BPGs in clinical practice?

7. In your experience, what are some of the facilitators of using RNAO BPGs in your teaching?

a. What factors helped you in using RNAO BPGs?

b. What supports or help was useful for you in incorporating RNAO BPGs in your courses?

8. Please explain, what are some of the challenges of using RNAO BPGs?

a. What are some of the hindrances or barriers of using RNAO BPGs?

b. What are some of the reasons that you could not use RNAO BPGs?

9. Do you have anything else to add to the discussion about RNAO BPGs?

Thank you statement

Appendix F: List of Courses Offered in the Winter 2022 Term

Year 1	Year 2	Year 3	Year 4	Electives	PDBN
NURS 206: Introduction to Nursing Profession	NURS 306: Pathophysiology and Pharmacology Concepts	NURS 408: Clinical Leadership and Management	NURS 502: Senior Clinical Practicum	NURS 451: Trauma and Injury	NURS 531: Community Health Nursing Theory
NURS 208: Perspectives and Influences of Health	NURS 308: Introduction to Health Assessment	NURS 412: High Acuity and Complex Health		NURS 503-Palliative care	NURS 533: Community Health Nursing Practice
NURS 210: Nursing Concepts and Therapeutics 1	NURS 310: Nursing Concepts and Therapeutics 11	NURS 414: Chronic Life Limiting Conditions		NURS 503-Senior's Needs	
	NURS 312: Introduction to Integrated Practice				
	NURS 313: Nursing for Alterations 1				
	NURS 314: Families in Transition				

Appendix G: Scaffolding of Evidence-Based Teaching – Integrated Approach

Year one Courses	Year two courses	Year three courses	Year four courses
Objectives			
Students will be able to 1. Define EBP 2. Recognize various components of the RNAO BPGs and extract relevant information from BPG document 3. Understand how BPGs can be utilized in theory and lab courses 4. Discuss the relevance of the application of BPGs with an understanding of cultural and contextual differences	Students will be able to 1. Understand the levels of evidence and appreciate the process of creation of BPGs 2. Identify relevant BPGs from the RNAO website and other evidence-based guidelines to support the concepts being taught **3.** Review one guideline in depth each term with an understanding of various sections within the guidelines	Students will be able to 1. Critically review the RNAO guidelines and do a gap analysis **2.** Apply relevant RNAO BPGs and other BPGs in clinical practice with measurable patient care outcomes **3.** Compare the guideline recommendations with the best practices being utilized at the practice sites and identify strengths and weaknesses of each source	Students will be able to 1. Demonstrate leadership and inquiry to influence change 2. Suggest changes towards positive patient outcomes in clinical settings 3. Demonstrate an understanding of the relevance of EBP as an integral aspect of being a nurse to enhance professional practice 4. Demonstrate a thorough understanding of BPGs in theory and clinical practice
Teaching and Learning Methods			
• Lecture/interactive discussion on EBP • Person and family-centered care BPG as an exemplar to discuss various components of RNAO BPGs • Scavenger hunt to locate various components of the BPGs • Case study or a standardized patient in the lab to demonstrate the application of the BPG recommendations	• Deepen understanding of EBP and level of evidence using three relevant BPGs • Using case scenarios, relate the content from the BPGs to the concept being taught and demonstrate learning through poster presentation • Explore other relevant EBP tools in addition to the selected RNAO BPGs • Case study or a standardized patient to demonstrate the application of the BPG recommendations	• Apply and evaluate recommendation from BPGs on patient care outcomes using case studies or actual patients in clinical • Apply other relevant EBP tools in clinical settings other than RNAO BPGs • Critique a guideline as part of class discussion in multiple courses	• Continue to apply and evaluate recommendation from BPGs on patient care outcomes on actual patients in clinical • Continue to apply other relevant EBP tools in clinical settings other than RNAO BPGs • Demonstrate aspects of change as part of class discussion in multiple courses in year 4

Assessment Strategies-Formative and Summative			
• Open book quiz questions on EBP • Labeling a BPG • Identification of relevant BPG recommendations based on a simple case scenario and identifying cultural and contextual relevance. • Identification of other EBP tools other than RNAO BPGs based on the same case scenario	• Open book quiz on level of evidence and what constitutes good evidence • Begin implementing select recommendations based on a case scenario in the lab and actual patients in the clinical settings (while considering the cultural context). • Application other EBP tools other than RNAO BPGs based on the same case scenario	• Completion of a gap analysis and a critique of the selected guidelines as part of an assignment (oral presentation or a scholarly paper) • Development of weekly nursing care plans with expectations of utilization of relevant BPGs and other EBP tools on patients and monitoring outcomes • Sharing learning experiences with the healthcare team members and with their colleagues during patient rounds and post-conferences	• Discussion of strengths, limitations, and relevance to the topic of the discussion of one of the BPGs in depth • Application of EBP along with their assigned preceptor in the clinical setting • Change assignment in any one of the theory courses which can be applicable in clinical practice • Demonstration of leadership and advocacy for EBP and BPGs in clinical
Monitoring and Evaluation Indicators			
• Course outline includes the objectives, teaching/learning and assessment methods re: EBP • Lesson plans and the teaching materials support the inclusion of EBP • Review of student work (randomly select five assignments) to assess the impact of learning • Course reports include reflection of teaching/learning and assessment of EBP	In addition to the indicators for the first-year courses • Seek feedback from the clinical instructors about their experience of implementing BPGs in the practice settings	Same as year two	In addition to the indicators for the third-year courses • Seek feedback from the preceptors at the clinical site about students' understanding and utilization of EBP tools