Factors Influencing Evidence-Based Practice Among Newly Graduated Registered Nurses in Prince Edward Island, Canada

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Abstract

This study analyzes the factors influencing evidence-based practice (EBP) among newly graduated Registered Nurses in Prince Edward Island (PEI), Canada. Evidence-based practice involves the application of the best available evidence to guide nursing practice. Nurses use their critical thinking skills and scientifically valid knowledge to provide quality care. Evidence-based practice helps nurses make effective clinical decisions, avoid habitual practice, and achieve better outcomes. However, achieving EBP is not without its challenges.

The study involved 26 Registered Nurses who had graduated within the last three years. Using a cross-sectional survey design, it explored three areas of EBP: the sources of knowledge nurses use to inform their practice, the barriers and facilitators to finding and reviewing evidence, and the evaluation of nurses' skills in finding and using evidence. The data were collected using the self-administered Development of Evidence-Based Practice Questionnaire (DEBPQ). Key findings reveal that nurses rely heavily on local policies, protocols, and patient-specific information to make clinical decisions, while medical, research, and journals/publications are infrequently used. Time constraints, lack of resources, and lack of authority to implement findings in practice were identified as significant barriers to EBP. Despite these challenges, nurses reported that their colleagues were generally supportive of changes in nursing practice. However, support from doctors was less robust. Nurses demonstrated a high level of skill in areas such as using the internet and reviewing and using organizational information to change practice. However, they lacked confidence in finding and applying research evidence. This suggests a possible need for additional training and support. These findings underscore the importance of addressing these barriers and providing additional training

and support to nurses to promote EBP and continual improvement in nursing to optimize health care outcomes.

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CHAPTER 1

Background

Defining Evidence-Based Practice

Evidence-Based Practice (EBP) is a conscious and well-defined decision-making process that promotes transparency and ensures the best possible outcomes. By avoiding errors related to one's role or habitual practice, EBP helps prevent unsafe or inefficient practices and improves health care outcomes (Mantzoukas, 2008). Clemmons-Brown (2023) defined EBP as an approach to problem-solving that integrates the best available scientific evidence with clinician expertise and patient values and preferences to make informed practice decisions.

According to Cleary-Holdforth et al. (2021), EBP is defined as a patient-centred, holistic, problem-solving approach to healthcare that combines the best available evidence, clinicians' expertise, and patients' values to optimize patient outcomes. EBP has resulted in better quality care, improved patient outcomes, reduced costs and greater nurse satisfaction compared to traditional approaches to care. However, despite its numerous benefits, the implementation of EBP among nurses remains inconsistent (Melnyk et al., 2010). In contrast, research utilization refers to the use of research findings in all aspects of a nurse's professional duties, playing a crucial role in improving patient care. Evidence-based practice is a broad concept that includes not only research findings but also other forms of practice knowledge (Estabrooks, 1998).

Implementing EBP is not without its challenges. Research and practice gaps can make it difficult to implement EBP (Cardoso et al., 2021). Despite these challenges, EBP can empower nurses, leading to higher engagement, teamwork, and job satisfaction (Melnyk et al., 2018). The World Health Organization (WHO) expects healthcare professionals to engage with evidence and

incorporate it into their practice (WHO, 2017). Yet, nurses often face significant challenges to achieving EBP at both the organizational and individual levels (Gerrish & Cooke, 2013).

Barriers and Facilitators to EBP Implementation

To successfully transfer knowledge, it is essential to understand and identify the facilitators and barriers of EBP (Smith et al., 2014). Evidence-based practice strives to improve and update clinical practice, providing better quality care and improving client outcomes (Veeramah, 2016). Despite the clear benefits and importance of incorporating EBP into clinical practice, healthcare professionals often face significant challenges when applying the evidence (Gerrish et al., 2011). According to McCaughan et al. (2002), research utilization has four main barriers. These include: difficulties in interpreting and working with research products; a lack of support from the organization or colleagues; lack of clear clinical direction from findings; and, individuals may not have the necessary skills or motivation to use research.

Williams et al. (2015) identified five significant organizational barriers that can affect the implementation of EBP in nursing. These include heavy workloads, unsupportive staff or management, a lack of authority to change practice, and a workplace culture that resists change. Similarly, Clemmons-Brown (2023) noted that organizational and cultural factors can often impede the translation of evidence into practice. Solomons and Spross (2011) found that the primary obstacles to EBP are lack of time and autonomy to change practice. On the other hand, Newman et al. (1998) classified barriers to EBP as organizational and cultural. A common barrier they identified was a lack of time to read and seek out relevant literature. Nurses often face significant challenges when implementing research-based findings in practice due to insufficient time, limited critical appraisal skills, and a lack of autonomy (Gerrish et al., 2007).

Several factors can facilitate the implementation of EBP. These include fostering strong nurse-patient relationships, supporting the professional development of nurses, promoting flexibility and autonomy in adapting to innovation, and providing training and ongoing education to nurses on how to use and integrate new ideas (Mathieson et al., 2019). Carroll et al. (1997) highlighted the need for more time to review research findings, clinically focused research, and easily accessible studies as critical facilitators of research utilization. Duncombe (2018) identified four main themes that can facilitate EBP: support, training, a desire to improve patient care and access to resources. Of these four themes, support was cited as the most important facilitator. Brown et al. (2009) identified similar themes for facilitating EBP, including a supportive learning environment, a culture encouraging growth and development, and easy access to evidence sources. Jeffers et al. (2008) found that using a diverse group of faculty mentors, along with strong organizational infrastructure and staff development programs, can help facilitate the uptake of EBP.

Implementing EBP in Practice

According to Finotto et al. (2013), introducing the EBP process early in nursing education can help develop students' independence and learning. Melnyk et al. (2014) found that incorporating EBP competencies into the healthcare system can lead to higher quality care, improved reliability, better patient outcomes, and lower costs. Despite healthcare professionals generally having a positive attitude towards EBP, more must be done to facilitate its uptake. Royle and Blythe (1998) argued that implementing EBP in healthcare settings can be complex, even though all nurses have a professional responsibility to use evidence-informed practice. Warren et al. (2016) emphasized the importance of strong leadership, education, and practice in promoting the integration of EBP in practice. They also highlighted the role of positive role

modelling and shared vision by transformational nurse leaders in facilitating EBP by individual registered nurses.

Melnyk et al. (2010) indicated that nurses remain inconsistent in implementing evidence-based care. They suggested a six-step EBP process that includes cultivating a spirit of enquiry, asking clinical questions, searching for the best evidence, critically appraising the evidence, integrating the evidence with clinical expertise and patient preferences and values, evaluating the outcomes of the practice decisions or changes based on evidence, and disseminating EBP results. To overcome barriers to EBP, it is essential to assess both barriers and facilitators within each system and implement strategies accordingly (Melnyk et al., 2004).

Ferguson and Day (2007) found that new nurses often experience significant stress when transitioning to practice. Sources of stress can include unrealistic expectations from clinical staff and conflicts between roles and values. Common stressors include a lack of support, fear of failure or causing harm to clients, concerns over competence, and lack of confidence. According to Boychuk Duchscher (2001), meeting tasks and client needs can cause frustration among new staff members, which can impact the implementation of EBP in practice.

Gerrish et al. (2008) studied the experiences of senior and junior nurses with EBP. They found that nurses generally relied on personal experience and communication with colleagues rather than other formal sources of knowledge. Senior nurses were confident in accessing all sources of evidence, including published sources and the internet, and felt capable of initiating change. However, junior nurses perceived more barriers to implementing change and were less confident accessing organizational evidence. Furthermore, junior nurses identified a lack of time and resources as significant barriers to EBP. Gerrish et al. (2011) studied the factors influencing the contribution of Advance Practice Nurses (APNs) to promoting EBP among frontline nurses.

They found that APNs are well positioned as clinical leaders to promote EBP by frontline nurses but require further development and skills in EBP. Furthermore, master's level preparation for APNs can help maximize their potential in EBP application.

Yadav and Fealy (2012) studied Irish psychiatric nurses' self-reported sources of knowledge for practice. They found that psychiatric nurses primarily gained knowledge from their everyday experience with patients and from interactions with fellow practitioners. Few reported gaining knowledge from published professional research studies or research journals. Bostrom et al. (2013) studied factors associated with EBP among registered nurses in Sweden. They identified the need to support newly graduated registered nurses in enhancing their skills and practice of EBP at both the individual and organizational levels. Tomotaki et al. (2023) identified four factors affecting critical appraisal skills when evaluating research articles for use in EBP: personal beliefs and attitudes, learning status, organizational readiness, and availability of research evidence.

Gerrish and Cooke (2013) studied factors influencing EBP among community nurses and identified insufficient time to access, interpret, and apply research as a significant barrier. They also emphasized the importance of presenting information in an easily accessible format for the application of EBP. Due to the multiple locations where community nurses work, the internet is a valuable source of information that requires investment in developing nurses' skills in retrieving online evidence. Garland Baird and Miller (2015) studied factors associated with EBP for community nurses and found that novice nurses were less likely to rely on experience or intuition when making clinical decisions. On the other hand, expert nurses with a higher level of education were more skilled at synthesizing information from research findings and applying it in their practice.

Impact of EBP on Care Outcomes

As cited by Melnyk et al. (2010), implementing EBP can lead to higher quality care, improved patient outcomes, reduced costs, and greater nurse satisfaction compared to traditional care approaches. However, adopting new practices based on the best available evidence has been slow, resulting in suboptimal and sometimes even harmful patient care, such as a high prevalence of pressure ulcers. Factors such as work-related stress and a lack of experimental knowledge can also hinder the provision of EBP in healthcare. Additionally, new nurses may face challenges in adopting EBP due to complex work environments, gaps in undergraduate education, and limited clinical experience (Rudman et al., 2012).

Ferguson and Day (2007) noted that despite forewarning new graduates and their employers about the challenges of transitioning into being practicing nurses, challenges persist and may even be more difficult as the healthcare industry embraces EBP. Gerrish et al. (2008) found that nurses primarily gain knowledge for practice from patients and fellow professionals, with research-based knowledge ranking low. Furthermore, clinical nurses identified insufficient time and resources as the primary barriers to finding and reviewing evidence.

Pitsillidou et al. (2021) studied the factors that influence EBP in nursing and found that a lack of authority or power to change care procedures in nursing was the primary obstacle to implementing EBP in nursing practice. According to Gerrish et al. (2007), there is limited understanding of how nurses utilize various sources of evidence. Despite the widespread calls for EBP in nursing, there remains a lack of clarity regarding its implementation. Furthermore, they explain that several factors have hindered the proper application of EBP, including a lack of time for practicing nurses to access and review research reports, a deficiency in critical appraisal skills, and insufficient support and authority to implement findings.

Accessing and Leveraging Technology to Enhance EBP

Healthcare professionals today grapple with managing an ever-growing volume of clinical-related health information. Despite the surge in accessible information and continuous expansion of professional knowledge, nurses often find it challenging to regularly access current and reliable information (Doran et al., 2010). The digital transformation in health care has made technological resources a daily necessity for nursing professionals. However, this transformation presents challenges, requiring nurses to acquire specific digital skills and be better prepared for these changes (Barbosa et al., 2021).

Information technology offers extensive and timely access to health information. However, staff nurses' heavy workloads and task-driven nature limit their ability to identify potential information needs and knowledge gaps (MacIntosh-Murray & Choo, 2005). Doebbeling et al. (2006) found that information technology has significantly improved quality, cost containment, and patient safety. However, a lack of research concentrates on practical approaches for implementing information technology and its applications in EBP, which can profoundly impact practice.

Huter et al. (2020) emphasized the vastness of digital technologies in nursing care. However, due to limited evidence of their effectiveness, care institutions often hesitate to implement them. These authors advocated for future research to focus on high-quality studies and diverse care settings to unlock the potential of digital technologies, aiming to enhance patient independence and alleviate caregiver burden.

Hart et al. (2008) emphasized the importance of computer-based education for nurses in clinical settings. They noted that nurses need to be able to use research findings and incorporate EBP into their practice to improve patient outcomes. Additionally, they highlighted that having

appropriate organizational infrastructures is essential for promoting EBP in clinical settings. Information technology can revolutionize nursing by providing front-line nurses instant access to extensive and relevant research. This empowers the nurses to make informed decisions at the point of care, resulting in safer, higher-quality patient care and better outcomes (Bates & Gawande, 2003).

Majid et al. (2011) highlighted the importance of nurses accessing relevant, accurate, and current information to keep their knowledge up-to-date and adopt EBP. They identified three broad categories of information sources: print, electronic, and human. Their study found that nurses primarily used human sources for nursing care information, while electronic sources received the lowest score. The authors suggested that this could be due to nurses' limited literature-searching skills and emphasized the importance of developing basic information literacy skills among nurses.

Doran et al. (2010) emphasized the importance of accessing large amounts of data through mobile technologies for safe, evidence-based patient care. They found that nurses using digital technology experienced significant improvements in research awareness, communication, quality of care, and job satisfaction. Complementing this, Walker and Ivory (2023) suggested that nurse leaders and clinical nurses incorporate principles from Information Sciences, Health Informatics, Communication Sciences, Health/Science communication, and Information Ecology. This integration will help them effectively address the healthcare workforce's information needs while considering their workload and well-being.

Wahoush and Banfield (2014) noted that locating information to guide clinical practice is essential for quality nursing care and patient safety. However, little is known about how student nurses transfer their information literacy skills as they transition to clinical practice as new

graduates. Hande et al. (2017) argued for the need to create a seamless transition to develop EBP competencies for nurses at each level of education. They called for incorporating thoughtful, strategically-oriented objectives into the curriculum and fostering collaboration and engagement among faculty to make EBP achievable.

Together, these studies underscore the critical role of technology and information management in enhancing nursing care and addressing the challenges of the healthcare workforce. They highlight the need for a seamless transition in developing EBP at each level of education and the importance of creating appropriate organizational infrastructures to promote EBP in clinical settings. They also emphasize the value of computer-based education for nurses in clinical settings and the need for nurses to use research findings to improve patient outcomes. Furthermore, they stress the importance of nurses accessing relevant, accurate, and current information to keep their knowledge up-to-date and adopt EBP.

Quantifying EBP

Few tools have been developed to help qualify and quantify EBP. Gerrish et al. (2007) developed a tool entitled “Developing Evidence-Based Practice Questionnaire” (DEBPQ). The DEBPQ has been utilized in research studies across England, Ireland, Australia, and Canada. One study conducted by Gerrish et al. (2008) examined the experiences of senior and junior nurses regarding EBP in England. The results indicated that nurses relied on personal experience and communication with colleagues rather than formal sources of knowledge. Junior nurses reported barriers to implementing change and a lack of time, while senior nurses felt more capable of overcoming these constraints. Another study by Gerrish et al. (2011) investigated the factors influencing the contribution of APNs in promoting EBP among front-line nurses. The findings suggested that APNs require additional skills in EBP. Gerrish and Cooke (2013) applied

the DEBPQ to analyze the factors influencing EBP among community nurses in England. The results showed that a multifaceted approach is necessary, considering the real-world context in which nurses practice. Moreover, the author suggested a pragmatic approach for community nurses to access research-based guidance through up-to-date protocols and pathways via in-service training and interactions with senior nurses. Due to the multiple locations of community nurses, the Internet was also identified as a valuable source of information. Time constraints were also found to impact EBP.

Garland Baird and Miller (2015) used the DEBPQ to analyze the factors influencing EBP among community nurses. The results indicated that research and nursing journals remain the least accessed sources of knowledge for practicing registered nurses and nurse practitioners in the community. The clinical practice setting also influenced how nurses engage in EBP. Masters-prepared nurses reported being more skillful in synthesizing evidence from various sources than novice nurses. A study by Yadav and Fealy (2011) investigated the self-reported sources of knowledge for the practice among psychiatric nurses in Ireland. The results showed that psychiatric nurses primarily obtain their knowledge from everyday experiences with patients and interactions with fellow practitioners, with few utilizing published professional and research journals as sources of knowledge.

Review of the included literature indicated that implementing EBP is an important component of care which helps to optimize health outcomes and ensures safe practice. It is important for nurses to be able to readily find and use research evidence in their busy work environments. New graduate nurses have been identified as a particularly vulnerable group in the workplace; however, few studies have focused on better understanding the barriers and facilitators to EBP in this sample. Additionally, understanding the local context of this challenge

in urban and rural PEI is a particular gap in the literature. These identified gaps were addressed in this research study.

Purpose of the Study

The study aims to identify the factors influencing EBP among newly graduated Registered Nurses in PEI, Canada.

Research Questions

1. What specific sources of information do newly graduated Registered Nurses in PEI use to inform their practice?
2. What are the barriers and facilitators to finding and reviewing evidence?
3. What skills do newly graduated Registered Nurses of PEI have in finding and examining the evidence?

CHAPTER 2

Literature Review

A review of the literature was conducted to examine the factors that influence Evidence-Based Practice in nursing. In this chapter, the methodology employed in conducting the literature search is outlined. The definition and components of the EBP, evolution of EBP, the sources of information to obtain EBP, the barriers and facilitators to EBP, and the skills required to support its implementation are also identified.

Literature Search Strategy

A comprehensive literature search was conducted to identify research articles on EBP in nursing. The databases searched included MEDLINE, CINHAL, EBSCO, and Google Scholar, with a time frame from 1990 to the present. The search was limited to peer-reviewed articles published in English. Key search terms and mesh terms included ‘EBP,’ ‘EBP among nurses’, ‘factors influencing EBP,’ ‘Development of the EBP Questionnaire,’ ‘sources of information used by nurses to obtain EBP,’ ‘sources of EBP knowledge,’ ‘barriers to EBP in nursing,’ ‘facilitators of EBP’, ‘skills required for EBP’, ‘the impact of nursing education on EBP’, ‘curriculum and EBP,’ ‘information technology and EBP,’ ‘sources of EBP,’ ‘the readiness of EBP among nurses’, ‘beliefs and factors affecting EBP,’ ‘implementation of EBP in practice,’ ‘the impact of EBP on care outcomes’, ‘skills in EBP,’ ‘nursing practice and EBP,’ ‘policy,’ ‘ethics,’ ‘communication,’ ‘culture considerations in EBP,’ ‘EBP guidelines in nursing,’ ‘organizational culture and EBP,’ ‘EBP in different nursing specialties’ etc. were used. Each of these terms was used to search databases individually and in combination to yield the most relevant articles. Article titles and abstracts were reviewed, and relevant articles were included in the literature review. The reference lists of these articles were also examined to identify additional relevant articles.

Evolution of EBP

The concept of EBP in nursing, which has its roots in the work of Florence Nightingale in the 1800s, has undergone significant evolution. Nightingale, a pioneer in nursing, emphasized the importance of improving patient outcomes through sound evidence. She advocated advancing nursing as a well-informed discipline by utilizing the best practice guidelines, reviewing and implementing relevant research evidence, and adopting technological advancements (Mackey & Bassendowski, 2017).

As the field evolved, the focus of EBP in nursing shifted from being strictly clinically based to incorporating a more holistic approach that considers the broader context of nursing research and practice (Stevens, 2013). This evolution necessitated a clear understanding among nurses of what evidence-based nursing entails, including what constitutes evidence and how it differs from evidence-based medicine and EBP. Nurses must also be skilled in engaging with and applying evidence. This involves staying informed about the latest developments in their field, understanding and applying best practices, and ensuring that their practice is grounded in the latest research and evidence (Scott & McSherry, 2009). A recent study by Connor et al. (2023) underscores that EBPs enhance patient outcomes and improve investments for hospitals and healthcare systems. However, they emphasize the need for a clear understanding and correct EBP terminology and methodology. They advocate for continuous support for clinicians' EBP work., effective dissemination of EBP work, and competency in EBP methodology among educators to prepare clinicians for evidence-based care. This highlights the ongoing evolution of EBP in nursing and the importance of continuous learning and adaptation in the field.

Importance of EBP

Evidence-based practice is crucial in improving health care outcomes. By preventing unsafe care or inefficient practices, EBP helps ensure patients receive the highest quality care (Cardoso et al., 2021). By keeping practitioners more accountable and reducing variation in care or services provided, EBP helps to improve services and prevents harmful practices (Schlosser, 2003). Use of EBP also provides opportunities for nursing care to be more individualized, effective, streamlined, and dynamic and helps maximize clinical judgement (Youngblut & Brooten, 2001). Furthermore, EBP serves as a means for the nursing discipline to bridge the gap between theory and practice and to ensure that the latest research and evidence inform patient care (Mackey & Bassendowski, 2017).

Locating EBP Sources

The ability to locate information that guides clinical practice is essential for providing safe, quality nursing care for patients (Wahoush & Banfield, 2014). However, busy schedules, staffing shortages, and lack of autonomy for junior nurses can pose a risk to the implementation of EBP. Despite broadening the scope of evidence, little is known about the extent to which nurses draw upon different sources of evidence (Gerrish et al., 2008).

Yadav and Fealy (2012) explored the sources of knowledge used by Irish psychiatric nurses and found that they primarily rely on their everyday experiences dealing with patients and fellow practitioners. The authors found that only a few Irish psychiatric nurses used published professional and research journals to guide their practice. The study concluded that psychiatric nurses tend not to use published information to navigate their practice like general nurses.

Information-seeking behaviour is a critical skill in nursing practice. Information literacy programmes increase students' awareness of available research, assist students in developing

skills for accessing available research through electronic data sources, and guide students in appreciating research studies.(Shorten et al., 2001)

Gerrish et al. (2011) found that APNs use different evidence sources. They engaged in various activities to promote EBP and positively influenced front-line nurses. These nurses with master's qualifications perceived themselves as more skilled in all aspects of EBP than those with lower qualifications.

Developing EBP Skills

Nayda and Rankin (2008) explored nursing students' and academics' understandings of information literacy and its links to lifelong learning. Their findings indicated a need for staff development and a progressive curriculum approach to ensure students understand information literacy and its links to lifelong learning. Complementing this, research conducted in two Canadian universities found that providing specific instruction for information literacy skills to nursing students improved their confidence and awareness of the scope and array of materials available through online databases (Julien & Boon, 2004). These results suggested that there are opportunities to optimize graduate nurses literacy skills following graduation.

Hart (2008) explained the importance of computer-based education in engaging nurses in EBP. They also indicated that the gap in informatics adoption by nursing staff is strongly affected by factors such as training, experience, design, and availability of support systems. Pravikoff et al. (2005) indicated that Registered Nurses in the United States are not ready for EBP because of gaps in their information literacy and computer skills, limited access to high-quality information resources, and attitudes toward research. This highlights the need for continued education and training of nurses to develop their information literacy skills and computer skills.

Harvey et al. (2002) focused on the importance of facilitation and facilitators in the uptake of EBP. Facilitation plays a crucial role in helping individuals and teams understand what they need to change, how they need to change it, and the factors influencing the uptake of EBP. Facilitators can provide guidance and support to help individuals and teams navigate the complex EBP implementation process.

Poore et al. (2014) indicated that experimental learning is fundamental to preparing nursing students for professional practice. Practical wisdom and EBP help the learners identify what is right or wrong and apply those skills to provide better and safer care to the clients. Experimental learning allows students to learn through hands-on experiences and reflection, which can help them develop practical wisdom and apply EBP in their clinical practice.

Abu-Baker et al. (2021) highlighted the critical role of EBP for nursing students worldwide. However, they noted that strong beliefs about EBP don't always translate into frequent implementation. Providing EBP training courses is vital to enhancing its implementation. To advance nursing science and improve future nursing care, it is imperative to incorporate EBP into nursing curricula. This involves teaching students how to access, appraise, and correctly apply evidence-based knowledge. This requires collaboration among nursing administrators, clinicians, teachers, and students.

Overall, these studies highlight the importance of developing information literacy skills, providing continued education and training for nurses, facilitating the uptake of EBP, and incorporating experimental learning into nursing education.

Factors Influencing EBP

Nurses face numerous challenges when implementing EBP at individual and organizational levels (Gerrish et al., 2008). While nurses may be eager to incorporate research

into their practice, they often lack the necessary skills. Furthermore, the complexity of research publications, coupled with a lack of direction, organizational support, and unsupportive colleagues, can further hinder the adoption of EBP in practice (McCaughan et al.,2002).

Tomotaki et al. (2023) identified four key factors that influence the critical appraisal skills of research articles in EBP: individual beliefs and attitudes, learning status, organizational readiness, and availability of research evidence. For example, personal beliefs and attitudes toward research can either facilitate or hinder the adoption of EBP. Similarly, the availability of research evidence can either support or impede the implementation of EBP.

Gerrish and Cooke (2013) found that the most significant barriers to accessing and reviewing EBP information were time constraints, a lack of skills in judging the quality of information, and limited resources. In a study on community nurses in PEI, Garland Baird and Miller (2015) discovered that research and nursing journals were the least accessed sources of knowledge for practicing nurses. Furthermore, expert nurses with higher levels of education were more skillful in synthesizing and applying evidence than novice nurses.

Park et al. (2015) emphasized the crucial role of nurse educators and managers in fostering positive attitudes toward evidence-based nursing among nurses and promoting the importance of EBP as an integral part of daily nursing care. Solomons and Spross (2011) identified a lack of time and autonomy to change practice as the primary obstacle to EBP. Nurses commonly reported a lack of time to read and seek out literature. Nurses are less likely to search for and apply evidence when the workload is too heavy (Li et al., 2019). Time and resources play a significant part in the uptake of EBP. This highlights the need for organizations to provide adequate support and resources to facilitate the adoption of EBP.

Newman et al. (1998) classified barriers to EBP as organizational and cultural. Organizational barriers included inadequate systems for managing personal and professional development, challenges driving innovation, insufficient methods for dissemination, difficulties accessing evidence and resource constraints. Cultural barriers included motivation to change practice that cannot be assumed, and ill-defined and competing interpretations of nursing roles and practice. Shayan et al. (2019) identified themes similar to Newman et al. and classified barriers as institutional, interdisciplinary, and nurse-related. Olade (2004) identified several factors contributing to the challenge of applying EBP in practice, including poor staffing, lack of research knowledge, the interest of nursing administrators, limited financial resources and organizational support, isolation of nurses from researchers, lack of research consultants and shortage of experienced nurses as contributing to the challenge of applying EBP in practice.

The concept of EBP has evolved and is crucial in improving health care outcomes. Nurses face numerous challenges when implementing EBP at individual and organizational levels. These challenges include time constraints, resource limitations, education and training opportunities, organizational support systems, and cultural norms and values. Developing information literacy skills and providing ongoing education and training to nurses can facilitate the uptake of EBP in practice settings.

Theoretical Framework

According to Guyatt et al. (2000), the skills required to provide an evidence-based solution to a clinical dilemma include defining the problem, conducting an efficient search to locate the best evidence, critically appraising it, and considering its implications in the context of patients' circumstances and values. These skills require intensive study and frequent application, which can be time-consuming.

Leung's (2001) developed an evidence-based decision-making cycle, also known as the 5 As, helped frame this study. According to Leung (2001), five stages in the EBP cycle assist practitioners in finding a solution to a clinical problem. The first stage of the cycle is Assess. Leung (2001) indicates that assessing the patient or situation is the first and most crucial step in evidence-based decision-making. This step involves recognizing the need for new evidence through a thorough assessment of the clinical situation. It helps identify the areas where the best evidence is needed during routine practice and is considered the most challenging step in adopting EBP. Nurses are responsible for accurately measuring and interpreting clinical data (Considine & Currey, 2015). Leung (2001) explains that while assessment is the most challenging and vital step, the remainder of the 4As can be quickly learned. Overcoming this conceptual and psychological hurdle is often the most difficult behavioural change for many clinicians adopting EBP.

The second stage of the cycle is Ask. This stage involves asking an answerable clinical question. Two broad categories of questions are used: Background and Foreground. Background Questions are most valuable when the practitioner or nurse has little knowledge about a client's condition and is looking for quick facts about the problem. This can be obtained using the W5s (Who, What, Where, When, Why and How) questions. On the other hand, A Foreground Question is very specific about the information requested and includes four essential components: Patient or problem, interventions, comparison intervention, and clinical outcome of interest (Leung 2001).

Acquiring the evidence is the third stage in the Leung (2001) evidence-based decision-making cycle. This stage involves acquiring the evidence and includes two critical components: refining and specifying the evidence. Identifying the sources of EBP is an essential step in

acquiring evidence. The current questionnaire used to collect data for this study is Gerrish's (2007) Development of Evidence-Based Practice Questionnaire (DEBPQ) tool, which was adapted from Estabrook's (1998) work.

The fourth stage of the cycle is Appraise. This stage involves critically appraising the evidence. Once evaluated, the available evidence is applied and integrated into clinical practice with clinical expertise. The evidence needs to be valid and relevant to the situation.

The fifth and final stage of the cycle is Apply. This stage involves applying the newly processed information to clinical practice while considering the patient's unique circumstances and features of the local health services delivery system. Leung (2001) explains that encouraging practitioners to independently find, appraise, and apply the best evidence alone will not significantly improve practice. A more effective system infrastructure is needed to link evidence use to health care delivery inextricably. The successful application of EBP principles on a system-wide level demands visionary leadership, local champions of the approach, and adequate resources to support the development, implementation, practice, and evaluation of the EBP method in clinical care.

The present study uses the DEBPQ developed by (Gerrish et al., 2007). The first section of the questionnaire operationalizes Leung's third stage, Acquire, and considers the basis of practice knowledge, including the primary sources nurses use to obtain their practice knowledge. Sections two to five of the DEBPQ aim to identify barriers, facilitators, and nurses' skills in EBP, which operationalize Leung's Appraisal and Application steps in the cycle.

When operationalizing the theoretical frame work for the study, the first step 'Assess' involves nurses assessing the patient or situation. This involves recognizing the need for new evidence through a thorough assessment of the clinical situation. It's critical to identify areas

where the best evidence is needed during routine practice. The second stage ‘Ask’ involves asking an answerable clinical question. For nurses, this could pertain to a patient’s condition or the effectiveness of a particular intervention. The third stage ‘Acquire’ involves acquiring the evidence. A thorough, focused search of evidence is conducted, and the highest quality evidence is selected. This step is particularly relevant to this study because the study aims to identify the primary sources nurses use to obtain knowledge for their practice. Identifying the sources of EBP is an essential step in acquiring evidence, along with understanding the barriers and facilitators of EBP. The fourth stage ‘Appraise’ involves critically appraising the evidence. The evidence needs to be valid and relevant to the situation. This is a skill that nurses need to develop and relates to the skills appraisal section of the study. The final stage ‘Apply’ involves applying the newly processed information to clinical practice while considering the patient’s unique circumstances and features of the local delivery system. This stage was explored during the skills appraisal section of this study.

CHAPTER 3

Methods

The purpose of this chapter is to describe the research design, population, and study sample. A quantitative research design was used to address these research questions. The data analysis process is also described according to the chosen method to address the research questions:

1. What specific sources of information do newly graduated Registered Nurses in PEI use to inform their practice?
2. What are the barriers and facilitators to finding and reviewing evidence?
3. What skills do newly graduated Registered Nurses of PEI have in finding and examining the evidence?

This chapter concludes with a discussion of relevant ethical considerations to the study.

Study Design

This study used a quantitative, descriptive, cross-sectional online survey design. Data were collected from a population with similar characteristics at one specific point in time (Connelly, 2016).

The study explored: 1) the sources of knowledge used by nurses; 2) the barriers to finding and retrieving research reports and organizational information; 3) barriers to practice; 4) facilitators to practice change and 5) nurses appraisal of the skills related to EBP use.

Sample

Inclusion Criteria

The target population included newly graduated registered nurses in PEI, Canada.

Participants had to be newly graduated registered nurses residing in PEI, Canada and must have graduated within the last 3 years to be included. The questionnaire was administered in English. Participants were required to have access to a computer or other internet-accessible device to complete the questionnaire. Respondents had to be able to read and write English.

Recruitment

Participants were informed of the study through a recruitment poster with study details, a link and a QR code to the online questionnaire (Appendix A). The study was advertised on the social media pages and/or newsletters and/or webpages of the University of Prince Edward Island Alumni Association, College of Registered Nurses and Midwives of PEI, and PEI Nurses Union.

Instrument

Data for this study were collected using the Development of Evidence-Based Practice Questionnaire (DEBPQ) developed and tested by Gerrish et al. (2007) (Appendix B). Permission to use the questionnaire was obtained from the author (Appendix C). The questionnaire aims to identify the factors influencing the development of EBP in newly graduated Registered Nurses. The tool is comprised of five distinct parts, the first part of the questionnaire draws upon the anglicized versions of Estabrook's scale (Estabrooks, 1998) to evaluate the sources of knowledge.

Section 1 focused on the sources of knowledge or bases of practice knowledge, comprising 22 items. Each item in this section was scored on a 5-point scale from "Never" (1) to "Always" (5). Section 2 identified the barriers to finding and reviewing the evidence, comprising 10 items. Each item in this section was scored from "Agree strongly" (1) to "Disagree strongly" (5). Section 3 discussed the barriers to changing practice based on evidence and consisted of five

items scored from “Agree strongly” (1) to “Disagree strongly” (5). Section 4 had four items identifying the facilitation and support in changing practice scored from “Always” (5) to “Never” (1). Section 5 consisted of eight items identifying the skills in finding and reviewing evidence and using evidence to effect change. The items were rated on a 5-point scale ranging from “Complete beginner” (1) to “Expert” (5). In addition to these sections, the questionnaire included a demographic section that collected information on the participant’s sex, age, number of years post-nursing graduation, area of practice and employment status.

The questionnaire has strong psychometric properties. Coherence has been tested using the inter-correlation of items and Cronbach's alpha as reliability indicators, with α values for the sections ranging from 0.730 to 0.913 and an overall α of 0.874 (Gerrish et al., 2007).

Data Collection

Participants could access the online questionnaire by clicking the link provided on the information sheet or scanning the QR code with an internet-accessible device. A letter of invitation informing potential participants about the study was provided at the beginning of the survey (Appendix D). Upon completion and submission of the questionnaire, the responses were anonymously stored under the researcher’s UPEI Microsoft account. The data was collected exclusively through an online survey using Microsoft Forms. The questionnaire was live for four months, from July 28, 2023, to November 27, 2023.

Ethical Considerations

Ethical approval for the study was obtained from the UPEI Research Ethics Board (Appendix E). Participation in the survey was voluntary, and there were no known risks to participants. The study's benefit was gathering information about the factors influencing EBP in newly graduated registered nurses and potentially helping improve how newly graduated nurses

obtain information to support their practice. Participants could stop the survey anytime, and their data were not retained. However, their data could not be withdrawn once the participant submitted a completed survey.

Implied consent was obtained when participants read the cover letter and started the survey. The online survey ensured the anonymity of participants, as no names or identifying information were collected. Data were collected electronically using web-enabled online Microsoft Forms and were accessible only to the investigator and the investigator's three supervisors. Data were stored under the investigator's UPEI Microsoft account, password-protected and authenticated by Microsoft Authenticator. The investigator's laptop was also password-protected. The data collected did not include any personal details such as name or email address. Only demographic information, including age, sex, number of years post-graduation, area of practice and employment status, was collected. The data will be stored at the University of Prince Edward Island for five years before being deleted/destroyed.

Data Analysis

The Statistical Analysis System (SAS) and Microsoft Excel were used to analyze data from the online survey. Appropriate univariate descriptive statistics were used to summarize the demographic data. Frequency distribution, percent, and mean scores were performed to analyze numerical data.

Sources of Knowledge

Mean scores were calculated for various sources of knowledge used by respondents. Scores were ranked from the highest to the lowest mean score, representing the most to least frequent use. Mean scores were categorized by rank.

Barriers to Finding and Reviewing Reports and Organisational Information

Mean scores for barriers were calculated for each item and then ranked from the greatest to the least barrier. Scores were ranked from the lowest to the highest mean score. A lower mean score represented a greater barrier.

Barriers to Changing Nursing Practice

Nurses were asked to identify the barriers to changing nursing practice. Mean scores were calculated for each item, and the item with the lowest mean score was identified as the primary barrier to implementing changing nursing practice.

Facilitators to Changing Nursing Practice

Nurses were asked to rate the support they receive from their colleagues and other staff members when it comes to changing nursing practice. Mean scores were calculated for each item and ranked accordingly.

Skills in Finding, Reviewing, and Using Different Sources of Evidence

Nurses were asked to rate their skills in finding, reviewing, and using different sources of evidence. A five-point scale ranging from ‘Complete Beginner’ (1) to ‘Expert’ (5) was used.

CHAPTER 4

Research Findings

This chapter presents the research findings on the factors influencing EBP among newly graduated registered nurses in PEI, Canada. It details the sample characteristics, sources of knowledge, barriers and facilitators to finding and reviewing evidence, and the skills in finding and examining evidence. The findings aim to answer key research questions and provide insights into the practical implementation of EBP in nursing.

Characteristics of Sample

A total of 31 respondents completed the study; however, 5 indicated they had graduated more than three years ago. Therefore, these 5 were excluded, resulting in 26 participants. The group comprised 21 females (81%) and five males (19%). The participants were categorized into one of five groups: 20-25 years (46%), 26-30 years (15%), 31- 35 years (15%), and 36-40 years (23%). There were no participants above the age of 41. Participants were also asked about the years since their nursing degree graduation. The distribution of responses was as follows: less than 1 year (23%), 1 year (27%), within 2 years (31%) and within 3 years (19%).

Regarding employment status, 81% of the participants were permanent full-time nurses, 15% were permanent part-time nurses, and 4% were casual employees. The majority of the respondents (62%) worked in a hospital setting, and the remaining 38% were employed in long-term care facilities (Table 1).

Sources of Knowledge

Highly Ranked Sources

The highly ranked sources with mean scores greater than 4.3 were knowledge from local policy and protocols (4.50), information a nurse learns about each patient/client as an individual

(4.42), and new treatments and medications that they learn about when doctors prescribe them to patients (4.31). These scores are shown in Table 2.

Mid-Ranked Sources

The mid-ranked sources with mean scores around 4 included information learned in training (4.23), information senior clinical nurses share (4.15), what doctors discuss with them (4.15), personal experience caring for patients/clients over time (4.08), information fellow practitioners share (4.04), and information from attending in-service training/ conferences (4.04).

Lower-Ranked Sources

The lower-ranked sources with mean scores from 3.5 - 3.9 include the nurse's personal intuitions of what seems to be 'right' for the client (3.92), information from national policy initiatives/guidelines (3.77), information from textbooks (3.73), and information from product literature (3.54).

Least Used Sources

The least used sources with mean scores less than 3.5 were information from the Internet (3.27), what has worked for them for years (3.15), the ways they have always done it (3.15), articles published in medical journals (3.08), information from local audit reports (3.04), articles published in research journals (3.04), articles published in nursing journals (2.96), information gained about medication and treatments from pharmaceutical or equipment company representatives (2.92), and information from the media (2.46).

Barriers to Finding and Reviewing Reports and Organisational Information

Significant Barriers

The most significant barrier to finding research reports was time constraints, with a mean

score of 2.96. This was closely followed by the difficulty of finding research reports, with a mean score of 3.04. The results are displayed in Table 3.

Moderate Barriers

Nurses also found it challenging to identify the implications of organizational information for their practice and to judge the quality of research reports, both with a mean score of 3.31. Identifying the implications of research findings in their own practice was slightly easier, with a mean score of 3.35.

Minor Barriers

The items " I do not have sufficient time to find organizational information (guidelines/protocols, etc.)" scored a mean of 3.46, while "finding" and "understanding research reports" scored 3.54 each.

Least Significant Barriers

The items "organizational information is not easy to find" and "I do not know how to find organizational information" were the least significant barriers, with mean scores of 3.69 and 4.08, respectively.

Barriers to Changing Nursing Practice

The most significant barrier to implementing change in nursing practice was insufficient time at work, with a mean score of 2.65. Results are displayed in Table 4. Additional barriers included a lack of resources, such as equipment (M 2.69), lack of authority in the workplace (M 2.85), team culture not being receptive to change (M 3.15), and lack of confidence about beginning to change practice (M 3.38).

Facilitators to Changing Nursing Practice

The results suggest that colleagues, staff and nurse managers generally provide substantial support for changing nursing practice (M=3.54). The results are shown in Table 4. Support from doctors was less robust (M=3.31).

Skills in Finding, Reviewing, and Using Different Sources of Evidence

Nurses were asked to rate their skills in finding, reviewing, and using different sources of evidence. A five-point scale ranging from ‘Complete Beginner’ to ‘Expert’ was used. The percentages are analyzed and shown in Table 5.

Highly Skilled Areas

Nurses show a high level of skill in areas such as using the Internet to search for information (65.4% competent, 3.8% expert) and reviewing and using organizational information to change practice (57.7% competent, 7.7 % expert).

Areas for Improvement

However, in areas like finding research evidence (30.8% competent, 0% expert) and using research evidence to change practice (30.8% competent, 3.8% expert), nurses indicated less confidence.

CHAPTER 5

Discussion

This study analyzed the factors influencing EBP among newly graduated registered nurses in PEI. The study involved 26 respondents, with a significant majority of 81% being female. The most represented age group was 20-25 years, accounting for 46% of the participants. Most participants were regular full-time nurses (81%), with a majority (62%) working in hospital settings, while the remaining 38% were employed in long-term care facilities.

In terms of sources of knowledge, nurses in PEI relied mainly on the information they learn about each patient/client as an individual and the information from the local policy and protocols. This is consistent with what others have found in a sample of community nurses (Gerrish & Cooke, 2013). Additionally, PEI nurses indicated a strong reliance on learning about new treatments and medications when doctors prescribe them, as well as the information acquired from their training. Articles published in medical, research and nursing journals were not commonly utilized by respondents in this study. Significant given the importance of these resources in disseminating up-to-date, peer-reviewed information that can enhance EBP. These findings are consistent with the findings of others (Gerrish & Cook, 2013; Yadav & Fealy, 2012). Additionally, PEI nurses indicated a strong reliance on new treatments and medications learned when doctors prescribe them, as well as the information acquired from their training.

In the analysis of the least used sources of knowledge for EBP, it was surprising that articles published in medical, research and nursing journals scored very low, meaning that these sources were not commonly utilized. This finding is very significant given the importance of these resources in disseminating up-to-date, peer-reviewed information that can enhance EBP. This trend is consistent with the findings of the studies by Gerrish and Cook (2013) and Yadav

and Fealy (2012). In these studies, it was reported that only a small proportion of community and psychiatric nurses use professional research journals as a source of knowledge for their practice. This indicates that published sources are not effectively utilized in nursing practice. The issue persists despite the passage of time since these studies were conducted. The need for more training in finding and analyzing research reports remains evident. This may include more training in database search strategies, critical appraisal of research articles, and application of research findings to practice.

Time was identified as a key barrier to finding and implementing practice change. Hospital nurses in this study reported that 'time' was a major obstacle to finding evidence and implementing change in the practice setting. A similar finding has been noted by others (Garland Baird & Miller, 2015; Gerrish and Cook, 2013). In terms of implementing change, a lack of resources, such as equipment, and a lack of authority in the workplace were also identified as important. These findings underscore the importance of effective time management, balanced workload, and adequate resource allocation. Fostering autonomy for nurses is also crucial for enabling change in nursing practice. Without these elements, nurses may find it challenging to update their practices based on the latest evidence, potentially impacting the quality of patient care. Therefore, addressing these barriers is essential for promoting EBP and continual improvement in the nursing field.

In analyzing facilitators to changing nursing practice, nurses reported that their colleagues, including fellow nurses, nurse managers, practice managers and doctors, were generally supportive of changing practice. However, support from doctors was less robust. This suggests a potential area for improvement in fostering a more supportive environment for practice change. Enhancing collaboration and support from doctors could be beneficial in

promoting the adoption of new practices based on the latest evidence, which will help improve patient outcomes and the overall quality of healthcare.

Nurses were confident and competent in areas such as using the Internet to search for information and reviewing and using organizational information to change practice. They were less confident when it came to finding and using research evidence to change practice. There is a need for further training and support in finding and applying research evidence in nursing practice. Training could focus on developing skills in literature search strategies and critically appraising research articles. Furthermore, support could also be provided through mentorship programs, where more experienced staff guides others in applying research to practice. Additionally, creating a supportive environment that encourages inquiry and the application of research to practice could be beneficial.

Gerrish et al. (2008) found that senior nurses generally have more confidence than junior nurses in utilizing different sources of evidence, including formal sources of knowledge and in acquiring knowledge about patients and organizations. However, nurses experience major barriers when it comes to implementing research findings. These barriers include insufficient time to access and review research reports, a lack of critical appraisal skills, and a lack of authority to implement findings. Interestingly, newly graduated nurses in PEI encounter the same issues. This suggests that whether they are junior or senior, nurses continue to grapple with time constraints and the need for critical appraisal skills when dealing with research findings. However, it's worth noting that senior nurses with more experience may exhibit more confidence in these areas.

Garland Baird and Miller (2015) propose making evidence-based research studies more accessible to nurses. They suggested using plain language, addressing specific clinical issues,

and employing computer-based support systems that can provide timely current information. By doing so, we can ensure that nurses are equipped with the most up-to-date knowledge and best practices, ultimately improving client care.

CHAPTER 6

Summary

This study analyzes the factors influencing EBP among newly graduated registered nurses in PEI. Most of the 26 respondents were female, full-time nurses aged between 20 and 25 years who were working in hospital settings. There are several key findings identified in this study. Newly graduated registered nurses in PEI heavily relied on information from local policy and protocols and patient-specific information for their practice. However, they infrequently used medical, research, and nursing journals/publications. This suggests a need for more training in finding and analyzing research reports. Time constraints were a significant barrier to finding research reports and implementing changes in nursing practice for PEI nurses. Other barriers included a lack of resources such as equipment and a lack of authority to implement changes in practice. Nurses reported that their colleagues, including fellow nurses, nurse managers and practice managers, were generally supportive of changes in nursing practice. However, support from doctors was less robust. Nurses were confident in using the internet and organizational information to change practice. However, they reported less confidence in finding and using research evidence, indicating a need for additional training and support in these areas.

Limitations of the Study

This study has some limitations. Firstly, with a sample size of 26 respondents, the findings may not be generalizable to a broader population of nurses. Secondly, the study focused solely on newly graduated registered nurses, which means the findings may not apply to more experienced nurses. Thirdly, the study only included nurses from hospitals and long-term care facilities of PEI, potentially missing insights from nurses in other settings. Fourthly, the study was conducted in PEI, Canada, and the findings may not apply to nurses in other regions or

countries with different healthcare systems or nursing practices. Lastly, the study relied on self-reported data, which can be subject to bias (Rosenman et al. 2011). This could lead to nurses overestimating or underestimating their skills or barriers they face in practice.

Implications for Practice, Theory, and Education

The findings of this study have several implications for nursing practice and theory identified below.

Training and Education. There is a need for more training in finding and analysing research reports. This could include training in database search strategies, critical appraisal of research articles, and application of research findings to practice.

Time Management. Time constraints were a significant barrier to finding research reports and implementing changes in practice. Effective time management strategies and possibly workload redistribution may be necessary to allow nurses more time for these important aspects of EBP.

*Supportive Environment***.** The study found that nurses generally received substantial support from their colleagues when it came to changing practices. However, support from doctors was less robust. Efforts should be made to foster a more supportive environment that encourages inquiry and the application of research to practice.

Access to Research. The study found that newly graduated nurses infrequently used medical, research and nursing journals. Efforts should be made to improve access to these resources and to make research findings more accessible to nurses, possibly through the use of plain language summaries of the articles and computer-based support systems.

Fostering Autonomy. The study found that newly graduated nurses often lacked the authority to change practice. It is also crucial to encourage nurses to take ownership of their

practice, develop decision-making skills based on professional judgment, and create an environment where nurses feel empowered to make changes in their practice based on the latest findings.

*Resource Allocation***.** Proper allocation of resources is crucial for enabling the effective application of EBP in practice. This includes ensuring that nurses have the necessary resources, such as equipment, to implement changes in their practice.

Implications for Education

The findings of this study have several implications for nursing education. Some areas for consideration are considered below.

*Curriculum Development***.** This study sheds light on the importance of curriculum development in focusing on EBP. This includes students finding, critically appraising, and applying research findings in practice.

Research Literacy. The infrequent and low confidence in using medical, research, and nursing journals suggests the need for improved research literacy. Therefore, nursing education should focus on developing student's skills in accessing and understanding research publications.

Time Management. Given that time constraints are a significant barrier to finding research information and implementing changes in practice, time management skills should be an integral part of nursing education.

Continuing Education. The study suggests that newly graduated and experienced nurses face similar challenges, indicating a need for ongoing education and professional development opportunities throughout a nurse's career.

Recommendations for Future Research

Recommendations for future research include a broader sample size and population, which will ensure the findings are representative and generalizable across different nursing populations and contexts. Secondly, an in-depth exploration of barriers to nursing practice should not only focus on known challenges to nursing practice but also should seek to uncover other hidden barriers that may not be immediately apparent. Finally, analyzing the effectiveness of interventions will guide further improvements and enhance future implementation strategies.

Conclusion

This study provided valuable insights into the factors influencing EBP among newly graduated nurses in PEI. The primary sources of knowledge that PEI nurses used in their practice were 'the knowledge from the local policy and protocols' and 'the knowledge gained from each patient as an individual.' Medical, research, and nursing journals/publications were infrequently used. The study also reveals the barriers to nursing practice, such as time constraints and a lack of resources and authority to change nursing practice. The study suggests that more training in finding and analyzing research reports, effective time management strategies, proper allocation of resources, supportive environment and fostering autonomy for nurses are crucial in enabling the effective application of EBP in practice. Furthermore, making research findings more accessible to nurses can ensure they are equipped with the most up-to-date knowledge and best practices, ultimately improving client care.

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TABLES

Table 1

Characteristics of the Sample: Demographics (n=26)

Variable	n	Percent
Gender Identity		
Men	5	19%
Women	21	81%
Age		
20 - 25 years	12	46%
26 - 30 years	4	15%
31 - 35 years	4	15%
36 - 40 years	6	23%
Above 41 Years	0	1%
Number of Years Post Nursing Degree Graduation		
0 year	6	23%
1 year	7	27%
2 year	8	31%
3 year	5	19%
Employment		
Regular Full Time	21	81%
Regular Part-time	4	15%
Casual Employment	1	4%
Unemployed	0	0%
Area of Practice		
Hospital	16	62%
Long-term Care Home	10	38%
Community Care	0	0%
Home Care	0	0%
Administration	0	0%
Public Health	0	0%
Other	0	0%

Table 2

Sources of Knowledge Ranked by Frequency of Use (n=26)

Item	Mean Score	Rank
Information I get from local policy and protocols	4.50	1
Information I learn about each patient/client as an individual	4.42	2
New treatments and medications that I learn about when doctors prescribe them to patients	4.31	3
Information I learned in my training	4.23	4
Information senior clinical nurses share: ex nurse specialists, nurse practitioners	4.15	5
What doctors discuss with me	4.15	5
My personal experience of caring for patients/clients over time	4.08	6
Information my fellow practitioners share	4.04	7
Information I get from attending in-service training/conferences	4.04	7
My intuitions about what seems to be 'right' for the patient/client	3.92	8
Information I get from national policy initiatives/guidelines	3.77	9
Information in textbooks	3.73	10
Information I get from product literature	3.54	11
Information I get from the Internet	3.27	12
What has worked for me for years	3.15	13
The ways I have always done it	3.15	13
Articles published in medical journals	3.08	14
Information I get from local audit reports	3.04	15

Item	Mean Score	Rank
Articles published in research journals	3.04	16
Articles published in nursing journals	2.96	17
Medication and treatments I gain from pharmaceutical or equipment company representatives	2.92	18
Information I get from the media	2.46	19

Note: Scale: 1 (Never) – 5 (Always)

Table 3

Barriers and Facilitators to Evidence-Based Practice (n=26)

Item	Mean Score	Rank
I do not have sufficient time to find research reports	2.96	1
Research reports are not easy to find	3.04	2
I find it difficult to identify the implications of organizational information for my own practice	3.31	3
I do not feel confident in judging the quality of research reports	3.31	4
I find it difficult to identify the implications of research findings in my own practice	3.35	5
I do not have sufficient time to find organisational information (guidelines/protocols, etc.)	3.46	6
I do not know how to find appropriate research reports	3.54	7
I find it difficult to understand research reports	3.54	7
Organizational information (protocols, guidelines etc.) is not easy to find	3.69	8
I do not know how to find organisational information (guidelines, protocols etc.)	4.08	9

Note: Scale:1 (Agree Strongly) – 5 (Disagree Strongly); 5 (Always) – 1 (Never)

Table 4

Barriers and Facilitators to Changing Practice (n=26)

Barriers to Changing Practice		
There is insufficient time at work to implement changes in practice	2.65	1
There are insufficient resources (e.g. equipment) to change practice	2.69	2
I lack the authority in the workplace to change practice	2.85	3
The culture of my team is not receptive to changing practice	3.15	4
I do not feel confident about beginning to change my practice	3.38	5
Facilitators of Changing Practice		
Nursing colleagues are supportive of my changing practice	3.54	1
Nurse Mangers are supportive of my changing practice	3.54	1
Practice managers are supportive of my changing practice	3.38	2
Doctors with whom I work are supportive of my changing practice	3.31	3

Note: Scale:1 (Agree Strongly) – 5 (Disagree Strongly); 5 (Always) – 1 (Never)

Table 5

Skills Appraisal (n=26)

Skills Rating	Complete beginner (%)	Novice (%)	Quite Skilled (%)	Competent (%)	Expert (%)
Finding research evidence	7.6	23.1	38.5	30.8	0
Finding organizational information	7.7	11.5	23.1	46.2	11.5
Using the library to locate information	11.6	26.9	34.6	26.9	0
Using the Internet to search for information	0	15.4	15.4	65.4	3.8
Reviewing research evidence	11.5	11.5	23.2	53.8	0
Reviewing organizational information	3.8	19.3	15.4	53.8	7.7
Using research evidence to change practice	15.4	11.5	38.5	30.8	3.8
Using organizational information to change practice	3.8	11.5	19.3	57.7	7.7

APPENDICES

Appendix A

Advertisement for Recruiting Participants

Are you a newly graduated Registered Nurse who graduated within the last three years in Prince Edward Island (PEI), Canada? We need your help!

We are conducting a research study on the factors influencing Evidence-based practice among newly graduated registered nurses in PEI. This includes examining the sources registered nurses use to inform their practice, the barriers they face, facilitators to changing practice and the skills they use in practice.

Participation in this study is voluntary and involves completing an online questionnaire using Microsoft Forms. The questionnaire takes approximately 10- 15 minutes to complete, and your responses will be recorded anonymously.

If you are interested in participating in this study, you can access the below link or scan the QR code below.

Thank you for considering this opportunity to contribute to our research.

Or

Click on the link

https://forms.office.com/r/ttSaZmfPRQ

Paul Moolan

Appendix B

Questionnaire

Demographic Information

1. Gender Identity
    - Gender Fluid
    - Man
    - Nonbinary
    - Trans Man
    - Trans Women
    - Two-spirit
    - Women
    - Prefer not to specify
    - Prefer to specify

2. Age
    - 20 - 25 years
    - 26 - 30 years
    - 31 - 35 years
    - 36 - 40 years
    - Above 41 Years

3. Number of Years Post Nursing Degree Graduation
    - 0
    - 1
    - 2
    - 3
    - More than 3 Years

4. Employment
    - Regular Full Time
    - Regular Part-time
    - Casual Employment
    - Unemployed
    - Student

6. Organization you currently work
    - Hospital
    - Long-Term Care Home
    - Community Care
    - Home Care
    - Administration
    - Public Health
    - Other or unemployed

7. First, we want to ask about the different sources of knowledge that you use in your professional practice. Please select the appropriate Likert scale that describes your experience (Questions 1-22)

The knowledge that I use in my practice is based on	Never	Seldom	Sometimes	Frequently	Always
1. Information I learn about each patient/client as an individual					
2. My intuitions about what seems to be 'right' for the patient/client as an individual					
3. My personal experience of caring for patients/clients over time					
4. What has worked for me for years					
5. The ways I have always done it					
6. Information my fellow practitioners share					
7. Information senior clinical nurses share e.g. clinical nurse specialists, nurse practitioners					
8. What doctors discuss with me					
9. New treatments and medications that I learn about when doctors prescribe them for patients					
10. Medication and treatments I gain from pharmaceutical or equipment company representatives					
11. Information I get from product literature					

8. The knowledge that I use in my practice is based on:

	Never	Seldom	Sometimes	Frequently	Always
12. Information I learned in my training					
13. Information I get from attending in-service training/conferences					
14. Information I get from local policy and protocols					
15. Information I get from national policy initiatives/guidelines					
16. Information I get from local audit reports					
17. Articles published in medical journals					
18. Articles published in nursing journals					
19. Articles published in research journals					
20. Information in textbooks					
21. Information I get from the Internet					
22. Information I get from the media					

9. The following questions explore your views on how confident you feel about overcoming barriers to achieving Evidence-Based Practice.
   The first set of barriers refers to finding and reviewing research reports and organisational information such as policies, guidelines and clinical protocols. (Questions 23 -32)

   Please select the appropriate Likert scale to indicate the extent to which you agree with the following statements as they apply to your current role.

Barriers to finding & reviewing research reports and organisational information.	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
23. I do not know how to find appropriate research reports					
24. I do not know how to find organisational information (guidelines, protocols etc.)					

25. I do not have sufficient time to find research reports					
26. I do not have sufficient time to find organisational information (guidelines/protocols, etc.)					
27. Research reports are not easy to find					
28. Organizational information (protocols, guidelines etc.) is not easy to find					
29. I find it difficult to understand research reports					
30. I do not feel confident in judging the quality of research reports					
31. I find it difficult to identify the implications of research findings in my own practice					
32. I find it difficult to identify the implications of organizational information for my own practice					

10. The second group of barriers refers to changing practice on the basis of evidence.

Please select the appropriate Likert scale to indicate the extent to which the following statements apply to you now.

Barriers to changing practice on the basis of 'best' evidence. (Questions 33- 37)	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
33. I do not feel confident about beginning to change my practice					
34. The culture of my team is not receptive to changing practice					
35. I lack the authority in the workplace to change practice					
36. There are insufficient resources (e.g., Equipment) to change practice					
37. There is insufficient time at work to implement changes in practice					

11. The following questions explore the extent to which your colleagues may support you to change practice. (Questions 38 - 41)

Facilitators to changing practice on the basis of 'best' evidence	Always	Frequently	Sometimes	Seldom	Never
38. Nursing colleagues are supportive of my changing practice					
39. Nurse Mangers are supportive of my changing practice					
40. Doctors with whom I work are supportive of my changing practice					
41. Practice managers are supportive of my changing practice					

12. Now, we would like you to rate your skills in finding, reviewing and using different sources of evidence. (Questions 42- 49)
    Please select the appropriate Likert scale to indicate how you rate your current skills.

Skills rating	Complete Beginner	Novice	Quite Skilled	Competent	Expert
42. Finding research evidence					
43. Finding organizational information					
44. Using the library to locate information					
45. Using the Internet to search for information					
46. Reviewing research evidence					
47. Reviewing organizational information					
48. Using research evidence to change practice					
49. Using organizational information to change practice					

Appendix C

Permission to Use the Development of Evidence-based Practice Questionnaire

From: Kate Gerrish <kate.gerrish@sheffield.ac.uk>
Sent: Wednesday, May 31, 2023 10:26 AM
To: Paul Moolan <pmoolan@upei.ca>
Subject: Re: Request permission to use the Developing Evidence-Based Practice (DEBP) Questionnaire

Dear Paul Jose Moolan

Thank you for your interest in the DEBP questionnaire. You are most welcome to use the questionnaire for your Master's degree.

I have attached a copy of the original questionnaire - I do not have a more recent version.

Please acknowledge the source of the questionnaire in your dissertation or any publications that arise from your work.

I wish you every success in your degree.

Kind regards

Professor Kate Gerrish, CBE, FRCN, PHD, RN

Appendix D

Letter of Invitation

INTRODUCTION

You are invited to participate in a research study conducted by Paul Moolan, RN BScN, a Master of Nursing student at the University of Prince Edward Island. Participation in this study is voluntary and may not directly benefit you. However, the study may provide insight into the factors influencing evidence-based practice for newly graduated registered nurses.

PURPOSE OF STUDY

The study aims to analyze the factors influencing evidence-based practice among new graduate nurses in PEI. This includes examining the sources nurses use to inform their practice, the barriers in practice, the facilitators of nursing practice, and the skills nurses use in practice.

STUDY DESIGN

The study uses a Likert scale questionnaire to collect the data. The average time to complete the questionnaire is approximately 10-15 min.

WHO CAN PARTICIPATE IN THIS STUDY

Registered Nurses of PEI who have graduated within the last three years are eligible to participate in this study.

POSSIBLE RISKS AND DISCOMFORTS

There are no known risks associated with participating in this study. Participation is voluntary, and you may withdraw from the study anytime.

POSSIBLE BENEFITS

The study may provide insight into the factors influencing evidence-based practice for newly graduated registered nurses in PEI.

CONFIDENTIALITY & ANONYMITY

The online survey will ensure the anonymity of participants as no names or identifying information will be collected. Data will be collected electronically using web-enabled online Microsoft Forms and accessible only to the principal investigator and their three supervisors.

COMPENSATION

There is no compensation for completing the questionnaire.

QUESTIONS

If you have questions about the study or questionnaire, please contact Paul Moolan (Principal Investigator) at pmoolan@upei.ca or 902-628-4300

PROBLEMS OR CONCERNS

If you experience any difficulties with the study or wish to voice your concern about any aspects of it, you may contact the UPEI Research Ethics Board at researchcompliance@upei.ca

WHO WILL BE CONDUCTING THE RESEARCH

If You have questions about this study, you can contact:

- Principal Investigator: Paul Moolan RN BScN, UPEI Master of Nursing candidate
- Phone: 902-628-4300 Email: pmoolan@upei.ca

- Faculty Advisors:

  Dr. Gail Macartney, Email: gmacartney@upei.ca

  Dr. William Montelpare, Email: wmontelpare@upei.ca

  Dr. Patrice Drake, Email mpdrake@upei.ca

Appendix E

University of Prince Edward Island Research Ethics Board Approval

UNIVERSITY of Prince Edward ISLAND

To: Dr. Gail Macartney
Faculty of Nursing\Faculty of Nursing

Protocol Number: REB Ref # 6012089

Title: Factors Influencing Evidence-Based Practice Among Newly Graduated Registered Nurses in Prince Edward Island, Canada

Date Approved: July 25, 2023 End Date: One year from date of approval

This research proposal has been reviewed by the UPEI Research Ethics Board and it complies with the Tri-Council guidelines for research involving human participants. Please be advised that the Research Ethics Board currently operates according to the Tri-Council Policy Statement 2: Ethical Conduct for Research Involving Humans (2018) and applicable laws and regulations.

It is your responsibility to ensure that the Annual Renewal and Amendment Form for Approved Studies is forwarded to Research Services prior to the renewal date. The information provided in this form must be current to the time of submission and submitted to Research Services not less than 30 days prior to the anniversary of your approval date. The Renewal/Amendment form can be downloaded from the Research Services website (http://www.upei.ca/research/forms).

The Research Ethics Board advises that IF YOU DO NOT return the completed Ethics Renewal form prior to the date of renewal:

- Your ethics approval permit will lapse;
- You will be required to stop research activity immediately;
- You will not be permitted to restart the study until you reapply for and receive approval to undertake the study again.

Lapse in ethics approval may result in the interruption or termination of funding.

Any proposed changes to the study must also be submitted on the same form to the UPEI Research Ethics Board for approval. Notwithstanding the approval of the REB, the primary responsibility for the ethical conduct of the investigation remains with you.

Sincerely,

Jessica Strong, Ph.D.
Chair, UPEI Research Ethics Board