Arab American University – Palestine

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Knowledge, attitudes, practice and perceived barriers associated with Evidence Based practice among nurses in Intensive care units in North West bank hospitals

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Approval form

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DECLARATION

I ,Zaina Khaleed Dabak , declare that this thesis and the work presented in it are my work and has been generated by me as the result of my original research :

Knowledge, attitudes, practice and perceived barriers associated with Evidence Based practice among nurses in Intensive care units in North West bank hospitals

The work provided in this thesis , unless otherwise referenced , has not been submitted by others elsewhere for any other degree or qualification.

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DEDICATION

"My study is dedicated to my loving parents, who have always been a source of motivation and inspiration for me, and who have given me the strength and commitment to work with enthusiasm and determination on every task". I dedicate my study to my supervisor and all of my family members as a mark of their support.

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ABSTRACT

Background

Nursing services based on evidence-based practice are essential for population health improvement. Evidence-based practice implementation can improve healthcare safety and patient outcomes. The significant challenge for critical care nurses is to provide safe, evidence-based care to patients with complex illnesses who are at high risk of mortality and complications.

Objective: This study aims to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in the North West Bank hospitals.

Methods: A cross-sectional descriptive study composed of one hundred and fifty-four nurses from ICUs governmental and private hospitals in Palestine's North West Bank participated in the study. The study was conducted through self-administered questionnaire

Results: The analysis revealed that the attitude mean was 5.1± 1.1, followed by knowledge 4.8± 1.4, then practice 4.6± 1.2. Also, the main barriers to EBP implementation were insufficient time to find research reports (3.5±1.0) and insufficient time at work to implement changes in own practice (3.4±0.8). Level of education and attending EBP courses were only have significant difference with all knowledge, attitude and practice of EBP. In addition, the correlation was positively associated between age and EBP implementation, but experience was positively associated with practice only.

Conclusion

This researcher reported that nurses' attitudes about EBP were more favorable than their EBP knowledge/skills and practice. The most significant challenges to developing EBP among Palestinian nurses were a lack of time to find research reports and a lack of time at work to execute changes in their own practice.

Keywords: Evidence based practice, Intensive care unit, nurse

ABBREVIATIONS

Abbreviation	Explanation
AAUP	Arab American University Palestine
ANOVA	Analysis of Variance
ICUs	Intensive care Units
EKAN	Evidence-based Practice Knowledge Assessment in Nursing
JCI	Joint Commission International
(EBPQ.	Evidence-based Practice Questionnaire
DEBPQ	Developing Evidence- Based Practice Questionnaire
SPSS	Statistical Package of Social Science
M	Mean
SD	Standard deviation

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Chapter One

Introduction

1.1 Background

Evidence-based practice (EBP) has received widespread attention in various disciplines in the context of rapidly growing healthcare literature and increasing demand for more reliable healthcare services (Bianchi et al., 2018).

EBP was defined as "a problem-solving approach to the delivery of care that integrates the best available external evidence from systematic research, individual clinical expertise, and patient preferences and values within the context of caring" (Mackey & Bassendowski, 2017). In the nursing profession, EBP has evolved into a major interest for healthcare practitioners, researchers and policymakers. Recently, greater emphasis has been placed on EBP and it is now considered critical for promoting excellence in healthcare (Ammouri et al., 2014).

Health improvement in communities is dependent upon nursing services underpinned by EBP (Li, Cao, & Zhu, 2019). EBP refers to using the best available evidence for decision-making and providing efficient and effective care for patients on a scientific basis (McSherry & Scott, 2009). Systematic implementation of EBP can enhance healthcare safety and improve patient outcomes (Im & Kong, 2017).

An intensive care unit (ICU) is an organized system for the provision of care to critically ill patients that provides intensive and specialized medical and nursing care, an enhanced capacity for monitoring, and multiple modalities of physiologic organ support to sustain life during a period of life-threatening organ system insufficiency (Marshall et al., 2017). Critical care nurses are faced with the difficult challenge of providing safe,

evidence-based care for patients with complex illnesses who are at high risk for complications and death (Phillips, 2015).

It has been emphasized internationally as one of the fundamental provisions of quality health care and health outcomes improvement, including the quality of nursing practice (Institute of Medicine, 2003; Melnyk & Fineout-Overholt, 2015). In addition, stakeholders, including consumers, society, governments, and payers, are expecting care to be based on the latest evidence (Melnyk & Fineout-Overholt, 2015). This assumption emphasizes the employment of evidence to support the decisions and practices of healthcare providers. Nursing care plays a significant role in ensuring quality care that is based on the best available evidence (John, 2016). Consequently, evidence-based practice has been considered a paradigm shift in nursing care (Melnyk & Fineout-Overholt, 2015).

One of the goals of evidence-based practice is to inform nurses of the best available research findings in delivering quality health care (Melnyk & Fineout-Overholt, 2015). Subsequently, It is also critical in keeping nurses up to date on current knowledge, improving clinical decision-making and judgment, and increasing patient engagement in decision-making (Facchiano & Snyder, 2012; Stevens, 2013). Furthermore, evidence-based practice may improve nursing care quality, reduce uncertainty between patients and healthcare providers, and promote healthcare provider accountability (Melnyk & Fineout-Overholt, 2015; Upton, Upton, & Scurlock-Evans, 2014). Additionally, nurses who base their practice on evidence use resources efficiently, increase patient satisfaction, and decrease ineffective or unnecessary practices, which promote more cost-effective care to patients and organizations (Melnyk & Fineout-Overholt, 2015; Melnyk et al., 2018).

Research has shown that 30% to 40% of patients are not treated based on current EBP , and that further 20% to 25% of patients receive harmful or unnecessary care (Abuejheisheh, 2020) . lacking ability to search for and develop an evidence-based model to help them in their practice which , makes EBP to become a significant challenge. For nurses to reach the level of performance to use EBP, knowledge acquisition is crucial.

In behavioral health settings, nurses' studies have indicated that EBP increases the nurses' knowledge and self-confidence, allowing nurses to review practices, offer new evidence, and develop new knowledge and understanding (Moreno-Poyato et al., 2020).

Despite this widespread endorsement of EBP, it has not become the criterion of clinical practice in many institutions (Melnyk et al., 2016). Researchers suggest that the prerequisites to achieving EBP include attitude toward EBP, understanding and confidence in the EBP process, equipping and leadership support (McSherry, Artley, & Holloran, 2006; Schaefer & Welton, 2018). However, the gap between evidence and practice suggests that nurses face a variety of challenges in achieving EBP. There are many barriers to EBP implementation, according to a large body of well-documented research evidence, including a lack of knowledge and skills about EBP, limited access to information, and a lack of time (Bressan et al., 2017; Shayan, Kiwanuka, & Nakaye, 2019; Sundberg et al., 2018).

1.2 Problem statement

EBP is essential to effective and quality outcomes. Lack of knowledge of EBP among nurses working in the ICU will lead to care that is not optimal and empirical. The impact of a lack of knowledge of EBP by nurses working in the ICU is not known.

Finding perceived barriers to EBP practice by nurses working in the ICU will provide further insight into this problem. Nurses in the ICU will benefit from increased access and EBP usage. Using EBP in making a clinical decision would improve quality outcomes regarding patient care and enhance nurses' personal and professional performance (Mahmoud & Abdelrasol, 2019).

In Palestine, increased emphasis on delivering high-quality health care to patients has placed additional strain on the Palestinian government and the Ministry of Health (MOH).The force to provide quality healthcare services led the Palestinian hospitals to attain national and international accreditation such as Joint Commission International (JCI). The application of evidence-based practice may help the Ministry of Health achieve its goals. However, in Palestine and other Middle Eastern countries, the implementation of EBP has been a struggle for nurses and has not been sufficiently addressed (Abu Hasheesh & AbuRuz, 2016; AbuRuz et al., 2017; Al Hadid, Abu Hasheesh, & Al Momani, 2011; Ammouri et al., 2014; Heydari, Mazlom, Ranjbar, & Scurlock-Evans, 2014).

Additionally, nurses in Palestine deliver nursing care based on their own experiences or traditions rather than scientific evidence, putting patients in danger, increases costs, and increases nurses’ workload. However, there is a lack of research evidence on the use and barriers to EBP among nurses in these hospitals, specifically in ICUs. With a better understanding of nurses' attitudes, knowledge, and implementation of EBP activities, an understanding of nurses' role in promoting EBP practice in clinical settings may be established.

1.3 Significance of the study

Literature has shown that EBP implementation is directly associated with improving patient outcomes, better quality care, and lower healthcare expenses (Friesen et al., 2017). As a result, examining nurses' knowledge of, attitudes toward, and implementation of EBP is critical for establishing strategies to encourage EBP in the nursing profession.

Furthermore, the study shed light on further studies on variables that may be found responsible for the knowledge gap. The findings also helped inform planning for training and additional education required for the nurses and the care challenges.

Identifying the knowledge gap started with assessing where the nurses are before any strategic initiative can be implemented. This is significant because it can inform later decisions taken by the health authorities and education administrators to fill the gap.

EBP knowledge among nurses aligns with the purpose of the quadruple aim of healthcare. The Institute for Healthcare Improvement (IHI) recommended improving patient experience, improving the population's health, decreasing healthcare costs, and improving clinician wellbeing (Melnyk, 2018). EBP will assist with getting the IHI initiative towards its goal of achieving improvement in healthcare quality. Through this study, nurses' EBP implementation and perceived barriers to EBP can direct future training and educational needs. This will undoubtedly increase knowledge and practice of EBP in ICUs and competence for high-quality service to ICUs patients.

1.4 Purpose of the study

The purpose of this study is to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in the North West Bank hospitals.

1.5 Research questions

This study addressed the following research questions:

1. What is the level of nurses' knowledge of EBP in the intensive care units in North West Bank hospitals?
2. What is the level of nurses' attitudes in regard to evidence-based practice in intensive care units in North West Bank hospitals?
3. What is the level of nurses' current use of evidence-based practice in daily care in intensive care units in North West Bank hospitals?
4. What is the level of perceived barriers to evidence-based practice among nurses in North West Bank hospitals' intensive care units?
5. Are there significant differences between selected nurses' demographic characteristics and their perceived knowledge, attitude, and practice scores of evidence-based practice?
6. Is there an association between selected nurses' demographic characteristics and their perceived knowledge, attitude, and practice scores of evidence-based practice?

1.6 Variables

Dependent variables: Knowledge, attitude, practice of EBP , perceived barriers to implement EBP.

Independent variables: Demographic data

Demographic characteristics: age, gender, level of education, marital status, job position, experience, attended EBP courses.

1.7 Conceptual and operational definitions

Evidence-based Practice: This is defined as the integration of research information that incorporates patient values and clinical situations in decision-making (Upton et al., 2014).

Operational definition: Total scores of means of respondents on Evidence-Based Practice Questionnaire that measures of knowledge, attitude, and implementation toward EBP.

Perceived barriers to Evidence-based Practice: This is defined as nurses' perceived situations/ circumstances that prevent the successful adoption of EBP (Upton &Upton, 2006).

Operational definition: Perceived barriers to EBP were measured using two subscales of the English version of the Developing Evidence- Based Practice Questionnaire (DEBPQ).

Knowledge: " is defined as a state of understanding obtained through experience and analysis of collected information, and it is promising for vehicular applications" . (Higuchi, Duncan Deveaux, Seyhan Uçar, Jérôme Härri, & Onur Altintas, 2021)

An Attitude : is a learned predisposition to respond in a favorable or unfavorable .manner towards people , an object , an idea or a situation . (fishbein, n.d.)

Practice: is the act of rehearsing a behave our repeatedly, to help learn and eventually master a skill. (Practice (learning method), n.d.)

A barrier : it’s a physical obstacle what prevents the passage or access to a site. It is usually a wooden or metal fence that, according to the needs, is raised or lowered so that one can, or not, advance. (Definition of barrier – What is, Meaning and Concept, 2021)

Summary

The knowledge of nurses is essential for the effective delivery of quality services to their patients. EBP has been a knowledge strategy for nurses to ensure they use the most evidence-based researched information for improved quality. To this end, the current study seeks to measure nurses’ knowledge, attitudes, practice in ICUs about EBP and the perceived barriers to its implementation. This study will further inform the clinicians and administrators at the clinical site of the nurses' gaps in knowledge regarding EBP for future improvement. Also, the perceived barriers revealed during the study will hopefully provide the foundation for improving nursing practice.

Chapter Two

Literature Review

2.1 Introduction

This chapter presented the studies about the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses. Pup-Med , Google Scholar , Science Direct and Sci-hub databases were used in the search for nurse knowledge articles , by using the keywords (EBP , Knowledge , attitude , practice , barriers to EBP , intensive care unites , nurses , nurse of ICU , the practices, attitudes, and knowledge/skills associated with EBP).

Analysis of various studies conducted on knowledge for evidence-based nursing and perceived barriers to implementing EBP in nursing will be presented. The literature review will provide important information that will help inform this study, guide the research questions, and ensure a clear understanding of the topic.

2.2 Evidence-Based Practice Process

The EBP involves acquiring the best possible evidence before it can be integrated into practice. The process starts with an assessment of a client or problem identification; this leads to asking a narrowed down question related to the problem; conduct a literature search to acquire the best possible evidence that address the question; appraise the evidence for appropriateness and applicability; integrate/apply finding into clinical practice; and evaluate the intervention or finding for effectiveness (Amusan, 2021).

2.3 Previous studies

The use of EBP in nursing has significantly been a topic of discussion over the past three decades in the healthcare service industry. The performance based on EBP has benefits to both the patients and the nurses (Atakro et al., 2020). EBP improves the nurses' competencies, which makes their service delivery optimal in the face of intervening for a patient in crisis. The integration of EBP into practice is a challenge for frontline nurses. Limitations that are frequently reported in nurses' implementation were limited by academic skills, negative beliefs towards EBP, limited knowledge of EBP, every patient assignment, family commitments, staff shortages, and lack of time (Al-Busaidi et al., 2019).

2.3.1 Knowledge, attitude and practice of EBP

In a descriptive cross-sectional study conducted by Heydari et al. (2014) to determine the EBP knowledge, attitudes, and practice of clinical nurses and midwives in Mashhad public hospitals in Iran, the study composed of 240 nurses and midwives, answered two valid and reliable questionnaires (demographic and EBP data). According to the findings, the majority of participants reported inadequate knowledge or abilities and practice of EBP, but attitudes were moderate toward EBP.

Ammouri et al. (2014) examined knowledge, attitudes, practice, and perceived barriers amongst nurses working in four major government hospitals. A descriptive, correlational, and cross-sectional study in four major hospitals specializing in medical, clinical, surgical, orthopedic, emergency, and intensive care. The EBPQ was used to measure knowledge, attitudes and practices, and skills among the nurses and DEBPQ was used to measure the barriers to EBP implementation. There were 600 questionnaires mailed out to nurses, and 414 nurses responded - 69% response rate. A

demographic survey was included in the study. General linear regression analysis and descriptive statistics were used to analyze the study. Nurses with more years of experience frequently used EBP ($p<0.01$) and had fewer barriers to finding and utilizing research, $p<0.01$. Baccalaureate-prepared nurses reported fewer barriers to finding and using EBP ($p<0.001$). Nurses who had finished the education before 2005 noted fewer knowledge and less skills related to EBP ($p<0.05$). The study also found that nurses who experienced more difficulty obtaining and analyzing research used less EBP (p0.001). In conclusion, nurses with more baccalaureate-level education had positive correlation with increased knowledge of EBP and fewer barriers to finding and utilizing EBP from research.

In a study conducted by Crabtree, Brennan, Davis, and Coyle (2016) at the Medical University of South Carolina, which has a 700-bed medical center, at the facility, their Center for Evidence-Based Practice partnered with the Center for Professional Excellence and developed a 12-week project-based course to prepare nurses in evidence-based practice. The researchers gave the nurses an overall summary of evidence-based practice, how to ask clinical questions, evaluate evidence, and apply knowledge to existing policy during the training. According to the findings, nurses' confidence in critically reviewing literature increased significantly ($p = 0.001$), as did their perception that evidence-based practice was essential for nursing practice ($p = 0.052$) and their involvement in enhancing skills required to use evidence-based practice ($p =.002$).

Another study conducted by Hagedorn Wonder et al. (2017) to explore the knowledge of evidence-based practice of registered nurses and examine the differences between objective and subjective measures of the nurses’ evidence-based practice

knowledge. The Evidence-based Practice Knowledge Assessment in Nursing (EKAN) and the Evidence-based Practice Questionnaire were utilized as tools (EBPQ). There was a significant difference in the mean EKAN total assessed between participants with a greater level of education and those with a lower level of education (p 0.001).

AbuRuz et al. (2017) studied knowledge, attitudes, and practice about EBP. The purpose of the study was to identify nurses' knowledge, attitude, and practice regarding EBP. The study used a descriptive cross-sectional design and a convenience sample of 500 nurses. The questionnaire used was the EBPQ questionnaire, and it was distributed to nurses in different practice settings of seven major hospitals. Multiple regression analysis was used to analyze the EBPQ. The subscale of knowledge in the EBPQ questionnaire found that nurses with an MSc degree were more knowledgeable about EBP than nurses with a BSc degree ($p< 0.005$). The study involved multiple settings; however, it still supported the positive correlation between educational level and knowledge of EBP among nurses. A trend that has been seen with previous studies.

Friesen et al. (2017) also examined a group of nurses' knowledge of evidence-based practice before and after an evidence-based practice mentoring program. When comparing the pre and post interventions, there was a significant difference in the evidence-based practice implementation ($t = I.75$, $df = 56$, p.05). When the identical pre- and post-tests were compared with attiudes about evidence-based practice, there was no significant difference ($p > 0.05$). The limitations were recognized as having a limited sample, no control group, and a focus on nursing outcomes.

In addition, Connor, Paul, McCabe, and Ziniel (2017) tested out a new survey instrument called the Quick-EBP-VIK survey, which is a 25-questionnaire to measure nurses’ value, implementation, and knowledge of evidence-based practice using a five-

point Likert-type scale. The data for this descriptive study was gathered using a web-based survey distributed in two waves to 1,177 recipients at a Magnet pediatric hospital in the northeast. 382 nurses completed wave one of the survey, and 131 completed wave two, which was sent out two weeks later. There were no significant variations in the findings between respondents from waves one and two. The nurses ranked high on value (3.5 to 4.5), moderate on knowledge (2.2 to 3.2), and low on application (mean score 1.3 to 2.3).

In a cross-sectional study conducted by Melnyk et al. (2018) to describe evidence-based practice attitudes in nurses in the United States and what factors are important for EBP proficiency. A total of 2,344 nurses from 19 different hospitals completed the online email survey, which included Organizational Culture and Readiness for System Wide Integration of EBP Scale, the EBP Implementation Scale (EBPI), , EBP Beliefs Scale (EBPB), EBP Knowledge Scale, and EBP Mentorship Scale. There were considerable positive relationships reported between EBP competency and EBP beliefs (r =.66) and EBP mentoring (r =.69). Age and education were both related to advanced EBP competency ($p < 0.001$). EBP competency did not change significantly by gender, race, or ethnicity, or whether or not one worked in a Magnet organization.

A study conducted by Al-Busaidi et al. (2019) examined nurses working in three different healthcare settings - acute care, primary care, and clinic. The study's objective was to identify nurses' attitudes, knowledge, and practices in three healthcare settings related to EBP and see if there are significant correlations along with demographic variables. This study was a descriptive cross-sectional design that involved 202 nurses. The eligible participants completed two questionnaires – EBPQ (Upton & Upton, 2006)

and the demographic data questionnaire designed by the project's researchers. The demographic data questionnaire had eight variables: age, gender, educational level, years of experience, marital status, current role, years of joining the organization, and nationality. The results of the EBPQ indicated five learning needs among the nurses: research skills, inquiring questions, knowledge of obtaining evidence, awareness of information types and sources, and critical appraisal. A bivariate correlation test analyzed years of nursing experience and EBP knowledge and found statistical significance p= 0.041. Nurses with greater years of work in the practice setting tend to have greater EBP knowledge. Age does not have any correlation with EBP knowledge in the study (p=0.124). The participants' education level breakdown was nursing diploma with 73.5%, advanced diploma with 8.5%, and bachelor's degree with 17.5%. Nursing programs focused on diploma-level education do not adequately teach research methods in literature appraisal compared to bachelor's nursing programs (Al- Busaidi et al., 2019). The authors concluded that EBP was received positively overall; however, the knowledge of EBP was low among nurses.

A mixed methods study was done to explore registered nurses' knowledge, attitudes, practices, and perceived impediments to evidence-based practice in a Ghanaian teaching hospital. Data was gathered via a self-completion questionnaire and individual semi-structured interviews. One hundred and two nurses took part in the survey, and twenty were interviewed. The findings found that the majority of registered nurses had generally high levels of EBP knowledge, attitude, and practice. However, nearly half of the nurses (47.7%) felt that their workload was too heavy to keep up with current evidence. Qualitative results identified training, institutional, and nursing job-

related barriers that impeded full implementation of evidence-based practice among registered nurses within the teaching hospital setting in Ghana (Atakro et al., 2020).

In a descriptive cross-sectional study conducted by Abuejheisheh et al. (2020) to identify the predictors of evidence-based practice among intensive care unit nurses in Jordan. The study utilized 132 intensive care nurses who participated in the study. The Evidence-Based Practice Questionnaire and the Evidence-Based Practice Barrier Scale were used as self-reported questionnaires. The findings suggest that among the 132 nurses in the sample, the findings contributed new information about the prediction of evidence-based practice among intensive care unit nurses. An educational program for nurses on this topic is critical for improving their profession and strengthening nursing care. In addition, nursing schools' curricula should be updated to emphasize the importance of evidence-based practice and to improve students' competencies in research utilization and statistical skills.

Furthermore, Rahmayanti et al. (2020) stated that few nurses in an acute care hospital have competent knowledge using EBP. The study was conducted using a cross-sectional study and a convenient sampling method involving 186 nurses to determine their readiness, limitations, and propensity to use EBP. Rahmayanti et al. (2020) utilized the Evidenced-Based Practice Readiness Scale (EBPRS) questionnaire in the research. The EBPRS questionnaire was used to measure nurses' knowledge and skills; attitude, and beliefs about EBP. The data were analyzed using the descriptive variable method. Data analysis under the knowledge sub-category of the EBPRS showed that more than half of the respondents lack the EBP knowledge to apply evidence into clinical practice. The study revealed that 73% of the nurses in the study reported insufficient resources such as lack of time in searching through sources of evidence as reason not to use EBP

in their practice; 58% reported inadequate equipment and materials to access EBP, and 47.3% reported a lack of understanding of statistical terms used in research studies. The lack of EBP knowledge showed in this body of work, and there is clear evidence in the study limiting the translation of evidence from research into practice.

2.3.2 Barriers to EBP

Alzayyat (2014) explored and analyzed barriers to nursing practice among psychiatric/mental health nurses (PMHN). Alzayyat reviewed the literature and came up with a strategy that classified barriers into four categories. They are organizational factors, contribution of PMHN researchers to EBP, the nature of the evidence, and personal characteristics of psychiatric nurses. The discussions of these barriers identified in the study revealed barriers among nurses working in Behavioral Health Division. Randomized controlled trials (RCTs) are recognized as the gold standard and using RCTs as the standard of evidence in the psychiatric/mental health nursing field has created some controversies (Alzayyat, 2014). The RCTs are limited in their context to inform behavioral health nurses what psychosocial interventions are more relevant for whom and in what circumstances to instruct what a psychiatric nurse should do (Alzayyat, 2014). The surrounding situation/context is essential in a psychiatric setting compared to RCTs that may not consider psychosocial circumstances (Alzayyat, 2014). In another category, the contributions of PMHN interventions are limited. There is a lack of publications by PMHN interventions in international journals – 77(16%) out of 486 publications explored PMHN interventions. The lack of evidence-based interventions around behavioral health nursing indicated that nurses working in behavioral health/psychiatric settings are not contributing enough to EBP knowledge to have a body of evidence relevant to their practice environment. Furthermore, the

characteristics of PMHN may determine the level of barriers that they are exposed to in their practice. For there to be an entrenchment of EBP knowledge in the behavioral health nurse, such a nurse must have the ability to search, appraise and synthesize the research article related to their Practice. The last category is about organizational/system barriers. This category represents the structures and processes around the practice environment of the behavioral health nurse. Insufficient time, fast-paced environment, short staff in the practice environment, assignment/workload commitments, lack of infrastructure for EBP were identified as organizational barriers to EBP knowledge among PMHN (Alzayyat, 2014). Also, organizational barriers may come in the form of lack of leadership support in changing old practices to newer practices that are evidence-based (Alzayyat, 2014).

Sidani et al. (2016) studied the perception of evidence-based practice interventions addressing patient outcomes in eastern Canada. The population consisted of nurses recruited from three institutes. Although 110 nurses responded to the flyers, only 56 completed the interviews. The Intervention Acceptance Scale was employed. The first portion provided directions for the rating task as well as explanations of the traits to be rated for the interventions. The second section included a summary of each evidence-based intervention as well as the items to rate each patient-oriented outcome. Following the nurses' reading of the interventions and results, each participant was interviewed. In the interviews, it was observed that, with the exception of massage, imaging, and relaxation, the nurses agreed with the interventions in the category of relevance to practice. The nurses were unsure if this was something they could do in their practice. Time restrictions and patients with cognitive or language impairments can be barriers to implementation.

Adalin et al. (2017) used a qualitative study to identify how nurses felt about the implementation of evidence-based practice. In a five-hospital system, critical care nurses were needed in a specialized context. Out of a possible 200 nurses, 15 were chosen for the process. The findings were given as a basic overview of what the 15 nurses mentioned during the interviews. The nurses generally understood the method of use and implementation. According to the findings, nurses noted difficulties such as a lack of resources, time, and administrative support. The nurses believed that by providing essential care, they could successfully integrate EBP. The nurses revealed a link between their amount of experience and their capacity to handle problems and make decisions.

In a review conducted by Shayan, Kiwanuka, & Nakaye (2019) to assess barriers to EBP among nurses in low- and middle-income countries, Studies published in peer-reviewed journals in English between 2000 and 2018 were included in the review. The analysis comprised sixteen articles and a total of 8,409 individuals. The review includes both qualitative and quantitative studies. From the eight categories, three significant themes emerged. Institutional hurdles, multidisciplinary barriers, and nurse-related barriers were the three major themes. Four areas emerged as the theme of institutional-related barriers: limited access to information; insufficient staffing; low resources; and a lack of institutional support. Interdisciplinary barriers emerged as a theme from subcategories such as inconsistency between education and practice in the nursing discipline, a lack of communication between academic and clinical practice environments, a lack of teamwork, and the public's negative perception of the nursing profession. Finally, from categories such as perceived constraints in the scope of nurses'

knowledge of EBP work, time,, and individual-related barriers, the topic of nurse-related challenges emerged.

Summary

EBP is necessary in the nursing professional domain's knowledge and Practice (Al- Busaidi et al., 2019). The gain to be derived far outweighed the challenges/barriers identified. The lack of knowledge and perceived barriers may affect patient recovery and quality of care delivered in the ICUs. It is well documented the outcome of the clinical and care decisions that are evidence-based - improved patient outcomes. However, the literature search provided some insight and relevant information to the knowledge, attitude, and practice of evidence-based among nurses. The education of nurses was identified to have an effect in acquiring knowledge of EBP. Some barriers identified were limited or lack of ability to use research, lack of time, paucity of evidence-based interventions in research and lack of organizational support in using EBP, which will be further explained in the study.

Chapter Three

Methodology

Introduction

This study seeks to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units. Finding the extent of nurses' EBP implementation and perceived barriers will offer solutions to nursing practice in the ICU. This section describes the methods and research design used in accomplishing this study, assessing practices, attitudes, and knowledge of EBP and perceived barriers among nurses in the ICU. Included are the study population, data collection, data analysis, validity, and reliability of the data collected. It also entails the sampling method, the inclusion and the exclusion basis, and an explanation of the data collection tools used in the study.

3.1 Study design

This study was a cross-sectional descriptive study to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in the North West Bank hospitals. This was selected because it allowed for comparisons between various populations groupings at the same time. Data can be gathered without interfering with the study environment. The cross-sectional research design makes it easier to collect reliable and accurate data that clearly describes the variables.

3.2 Study setting

The study was conducted on nurses who work in the ICUs in the governmental and private hospitals in the North West Bank districts (Jenin, Tubas, Talkarm, Qalqeliah, Nablus, and Salfeet). The study was conducted from December 2021 to July 2022.

3.3 Study population and sample

The targeted participants of the study were all nurses working in the ICUs in the North West Bank governmental hospitals (Khaleel Sulaiman, Thabet Thabet, Rafedia, Al-Watani, Tubas/Turkey, Darweesh Nazzal, and Yaser Arafat hospitals) and private hospitals (Al-Arabi, Nablus Specialty, Al-Razi, Alenjeli, and AlIttihad hospitals). According to the nursing department in the Palestinian Ministry of Health and private hospitals, the total number of nurses who work in the ICUs in the targeted hospitals is 200 approximately. The sample size was calculated using the Raosoft program with a confidence level of 95%, a margin of error of 5%, and a response rate of 50%. A total sample of 132 participants was needed to conduct this study. The number of nurses was too small to take a sample of them, so all nurses were enrolled in the study.

3.4 Inclusion criteria

- Nurses who approved to participate in the study.
- Nurses who provide direct care to patient and who routinely administer medications to patients.
- Full time nurses

3.5 Exclusion criteria:

- Nurses who didn't work in ICU.
- Part time nurse

3.6 Study instrument

A self-administered questionnaire was used to collect the data from the participants. The questionnaire consisted of three parts (Appendix A):

Part one: The researcher developed demographic characteristics for the participants after reviewing the literature. It is composed of age, gender, marital status, academic qualifications, participant position, years of experience, and the year that each nurse completed their last academic degree.

Part two included the EBP questionnaire developed by Upton & Upton (2006). The EBP questionnaire is a self-administered tool to assess the nurses' use of EBP. The EBPQ has 24 items with three sub-sections: EBP practice has six items, attitudes toward EBP have four, and knowledge of EBP has fourteen.

The questionnaire was tested on a sample of staff nurses (N = 751) and had good internal reliability. The overall Cronbach's alpha was 0.87; .85 for the practice subscale, .79 for the attitudes subscale, and 0.91 for the knowledge scale (Upton & Upton, 2006). All item scores ranged from 1 to 7, with higher scores indicating greater knowledge, positive attitudes, and more evidence-based practice implementation (Upton & Upton, 2006), and a mean score can be calculated from each subscale (Upton et al., 2016). "In the attitudes subscale, each item had two pairs of opposing statements, each with a negative statement and a corresponding positive statement. The respondents were asked to rank their attitudes towards EBP using these statements. Responses were considered

positive if scores were greater than four". The questionnaire has been widely used in other clinical research to measure EBP implementation (Al-Busaidi et al., 2019; Toole et al., 2013; Upton et al., 2014).

Part three included barriers to EBP. This part was measured by using two subscales of the English version of the Developing Evidence-Based Practice Questionnaire (DEBPQ) (Gerrish et al., 2007). "The first 10-item subscale focused on barriers to finding and reviewing evidence; the second five-item subscale addressed barriers to changing practice. A five-point Likert scale ranging from 1 (strongly disagree) to 5(strongly agree) was used to measure items. The mean scores for each item and for subscales were calculated; higher scores indicated a greater perception of EBP barriers. The questionnaire was previously shown to be a valid and reliable instrument" (Gerrish et al., 2007).

The instruments have been translated into Arabic by an English-skilled nursing lecturer who was raised with Arabic as his first language. To determine conceptual equivalency, this copy was translated back into English by a bilingual academic lecturer who was unfamiliar with the original scale. The translated version was compared to the original.

3.7 Validity and reliability

The instrument's validity was proven by delivering the questionnaire to three professionals with experience in clinical and academic nursing. These experts assessed the full questionnaire and provided feedback and ideas on its content. On the basis of the feedback of the experts, certain changes were made to the questionnaire. These three specialists assisted with word selection and assessed each section. They all stated that the questionnaire's content was clear and unambiguous.

The reliability of the instrument was also established via piloting the tool to examine whether the three parts, which were: the demographic characteristics, nurses' EBP implantation, and the barriers to EBP implementation, in the questionnaire had internal consistency. The researcher conducted piloting on 30 nurses who completed the questionnaire, where Cronbach's alpha was 0.91 for the entire scale, .90 for the implementation subscale, .83 for the attitudes' subscale, and 0.96 for the knowledge subscale. Cronbach's alpha coefficient for internal consistency was 0.82 for the barriers to finding and reviewing evidence subscale and 0.79 for the barriers to changing practice subscale. The internal consistency and reliability of the scales was high.

3.8 Pilot study

A pilot study was conducted on 30 participants. They were provided with a clear explanation of the study and its objectives. The pilot study was done to ask them about the difficulties, the average time to fill out the questionnaire, and their opinion of the questionnaire. The participants consider it clear, without comments, and the time ranges between 10-15 minutes to complete the questionnaire. The participants were excluded from the actual study.

3.9 Data collection

After obtaining permission to conduct the study from Arab American University and the Ministry of Health, the researcher visited the hospitals and met the head of nurses and ICUs head nurses. The researcher explained to them the objectives of the study and asked them to prepare a list of names of nurses and the schedule duty to meet them. Also, the researcher explained the objectives of the study to the nurses. The nurse

who agreed to participate assigned the informed consent and then completed the questionnaire in Arabic version.

3.10 Ethical considerations

Ethical approval was obtained from Arab American University and the Palestinian Ministry of Health. A consent form was provided for every participant prior to the study. Voluntary participation was explained. Confidentiality was assured personal information about the participants. All data was kept confidential and was used for study purposes only. No harm or consequences due to participation refusal, such as care quality or privileges. A clear explanation was given to each participant about the study objectives and tool. Enough time was given for questions.

3.11 Data analysis

Data were analyzed using the Statistical Package of Social Science (SPSS, Version 23; SPSS Inc., Chicago, Illinois). Descriptive statistics for all parameters included in this analysis were performed. These analyzes included distributions of means and standard deviations. Analysis of t, ANOVA test, and correlation also were performed to verify if there is a significant difference EBP implementation and selected demographic characteristics.

Summary

This chapter explains how the study was conducted. It covered the study design, population, inclusion and exclusion criteria, sampling, study setting, study period, study tool, data collection, data analysis, and ethical considerations. The structure of the questionnaire and the technique of collecting data were also explained. This descriptive

cross-sectional study was aimed to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in North West Bank hospitals. The participants involved in this study were all nurses who were working in ICUs in governmental and private hospitals in the North West Bank. This study was conducted from December 2021 to July 2022

CHAPTER FOUR

Results

4.1 Introduction

This chapter deals with the data collected for analysis. The statistical method allowed the investigator to deduce, analyze, coordinate, measure, evaluate, and convey the numerical information. The aim of data analysis is to provide answers to questions about the study. The data analysis strategy comes directly from the question, the design of the data collection process, and the level of measurement of the data. This chapter edits, tabulates, analyzes, and interprets the data collected.

This chapter expresses the findings concerning the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in North West Bank hospitals. Statistical analyses were directed to explore three research questions.

1. Is the nurses' knowledge of evidence-based practice high in the intensive care units in North West Bank hospitals?
2. "Are the nurses' attitudes high in regard to evidence-based practice in intensive care units in North West Bank hospitals"?
3. "Is the nurses' current use of evidence-based practice high in daily care in intensive care units in North West Bank hospitals"?
4. Are perceived barriers to evidence-based practice high among nurses in North West Bank hospitals' intensive care units?

5. “Are there significant differences between selected nurses’ demographic characteristics and their perceived knowledge, attitude, and practice scores of evidence-based practice”?

6. “Is there an association between selected nurses’ demographic characteristics and their perceived knowledge, attitude, and practice scores of evidence-based practice”?

4.2 Response rate

The nurses in the current study are composed of all nurses working in the ICUs in the governmental and private hospitals in the North West Bank / Palestine. One hundred and four out of 200 questionnaires (77% response rate) were completed and returned by the nurses.

From an organizational point of view, the response rate obtained for this research was good; as such, the findings should include more reflective details about the nursing population.

4.3 Participants’ Characteristics

The findings revealed that the mean of the participants’ age was 29.2±6.3 and the range was between 22 and 52 years. With regard to gender, the majority of 93(60.4%) were males, and 80(51.9%) were married. Also, the majority of the participants 113(73.4%) have bachelor's degrees, and 122 (79.2%) are staff nurses. The mean of the partcipants’ experience was 6.1±4.9 years. Approximately 60% of the partcipants work in governmental hospitals. Furthermore, the analysis revealed that 80 (51.9%) attended EBP courses, as seen in table (4-1).

Table 4-1: "Demographic characteristics of the participants" (N=154)

Characteristics		M (SD)	N (%)
Age		29.2(6.3)	
Gender	Male		93(60.4
	Female		61(39.6
Marital status	Single		74(48.1
	Married		80(51.9
Educational level	Diploma		24(15.6
	Bachelor		113(73.4
	Master and above		17(11.0
Job position	Practical nurse		26(16.9
	Staff nurse		122(79.2
	Head nurse		6(3.9
Experience		6.1(4.9)	
Hospital	Governmental		92(59.7
	Private		62(40.3
Attending EBP courses	Yes		80(51.9
	No		74(48.1

M= Mean, SD= standard deviation

The analysis revealed that the knowledge subscale mean was 4.8± 1.4. Also, nurses indicated "Ability to review your own practice" was used most frequently (4.9±1.6), whereas "Research skills" was used less frequently (4.1±1.6), as seen in (Table 4-2).

Table 4-2: knowledge of EBP among nurses (N=154)

	Knowledge of EBP	M	(SD)
1	"Research skills"	4.0974	1.63207
2	"IT skills"	4.7857	1.60051
3	"Monitoring and Reviewing of practice skills"	4.5065	1.83377
4	"Converting information needs into a question"	4.8442	1.48689
5	"Awareness of information types and sources"	4.8117	1.52010
6	"Able to identify gaps in your own practice"	4.7597	1.52562
7	"Knowledge of how to retrieve evidence"	4.7597	1.47331
8	"Ability to analyze critical evidence against set standards"	4.8831	1.58814
9	"Ability to determine the validity of material"	4.8377	1.53167
10	"Able to determine usefulness of material"	4.6299	1.69564
11	"Apply information to individual cases"	4.7922	1.58702
12	"Sharing of ideas and information with colleagues"	4.8377	1.54865
13	"Dissemination of new ideas about care to colleagues"	4.7922	1.56211
14	"Ability to review your own practice"	4.9351	1.61154
	Total knowledge	4.8	1.4

T

he analysis revealed that the attitude subscale mean was 5.1± 1.1. Also, nurses indicated "New evidence is so important that I make the time in my work schedule" was the highest mean item (5.2±1.3), whereas "My practice has changed because of evidence I have found" was used the lowest mean item (4.9±1.4), as seen in (Table 4-3).

Table 4-3: Attitude of EBP among nurses (N=154)

	Attitude	M	(SD)
1	"New evidence is so important that I make the time in my work schedule"	5.2273	1.29111
2	"I welcome questions on my practice"	5.1558	1.28912
3	"Evidence based practice is fundamental to professional practice"	5.1883	1.51148
4	"My practice has changed because of evidence I have found"	4.8571	1.40228
	Total attitude of EBP	5.1071	1.06407

T

he analysis revealed that the Practice subscale mean was 4.6± 1.2. Also, nurses indicated “Share info with colleagues” was the highest mean item (5.1±1.6), whereas “Critically appraised literature” was the lowest mean item (3.5±1.3), as seen in (Table 4-4).

Table 4-4: Practice of EBP among nurses (N=154)

		M	**(SD)**
1	“Formulate clear question”	4.0974	1.76298
2	“Track down relevant evidence”	4.9026	1.52010
3	“Critically appraised literature”	3.5455	1.28892
4	“Integrate evidence with expertise”	4.9351	1.43566
5	“Evaluate outcomes of practice”	4.9416	1.55188
6	“Share info with colleagues”	5.0714	1.62137
	Total practice of EBP	4.5823	1.22892

The analysis revealed that the Barriers to finding and reviewing research subscale mean was 3.2± 0.8. Also, nurses indicated “Insufficient time to find research reports ” was the most barrier (3.5±1.0), whereas “Not knowing how to find appropriate research reports” was less barrier (3.1±1.0).

According to the Barriers to changing practice, the analysis revealed that the mean of the subscale was 3.2±0.8. Also, nurses indicated “Insufficient time at work to implement changes in own practice” was the most barrier (3.4±0.8), whereas “Lack of confidence about beginning to change own practice” was less barrier (3.1±1.1), as seen in table (4-5).

4-5: perception of barriers of EBP among nurses (N=154)

	Item	M	(SD)
	Barriers to finding and reviewing research	3.1974	.79647
1	"Research reports are not easy to find"	3.2597	.93449
2	"Insufficient time to find research reports"	3.4870	.97844
3	"Lack of confidence in judging the quality of research reports"	3.2597	.94146
4	"Difficulty identifying the implications of research findings for own practice"	3.1818	1.08739
5	"Difficulty understanding research reports"	2.9675	1.11683
6	"Not knowing how to find appropriate research reports"	3.0974	1.01472
7	"Difficulty identifying the implications of organizational information (guidelines/ protocols etc.) for own practice"	3.1299	1.02709
8	"Insufficient time to find organizational information"	3.1948	1.03582
9	"Organizational information is not easy to find	3.2532	.98725
10	"Not knowing how to find organizational information"	3.1429	1.09323
	Barriers to changing practice	3.2714	.72335
1	"Insufficient resources (e.g. equipment) to change own practice"	3.3247	.89941
2	"Insufficient time at work to implement changes in own practice"	3.3831	.83391
3	"Team culture is not receptive to changing practice"	3.2727	.95844
4	"Lacking the authority to change practice"	3.2987	1.12098
5	"Lack of confidence about beginning to change own practice"	3.0779	1.14065

As showed in Table 4-6, the results of the independent sample t test revealed no significant differences in perceived knowledge, attitude, and practice between male and female participants.

Regarding educational qualification, as showed in Table 4-6, results of the one way ANOVA test revealed that participants with master and above level education revealed a statistically significant higher knowledge, attitude, and practice toward EBP than undergraduates ($P < .05$).

Also, table 4 -6 shows that participants who reported that they had previously attended courses in EBP reflected a statistically significant higher perception of knowledge, attitude, and practice associated with EBP (5.2±1.3, 5.3±1.1, 5.0±1.1) than participants who didn't attend courses (4.3±1.3, 4.9±1.0, 4.2±1.2) respectively ($P < .005$).

Table 4-6: "Differences in Participants' Perceived Knowledge, Attitude, and Practice toward EBP, and Selected Demographic Characteristics"

Variable			Knowledge			Attitude			Practice		
		n	M(SD)	test	P. value	M(SD)	test	p. value	M(SD)	test	p. value
Gender	Male	93	4.9(1.3	t=.947	.339	5.1(1.1)	t=-.071	.943	4.7(1.2)	1.5	.134
	Female	61	4.6(1.4			5.1(1.1)			4.4(1.3)		
Educational level	Diploma	24	3.8(1.1	F= 9.7		4.0(1.1)	F=18.8		3.5(1.0)	F= 19.5	
	Bachelor	113	4.9(1.3		0.001	5.3(0.9)		0.001	4.7(1.1)		0.001
	Master and above	17	5.5(1.2			5.2(1.0)			5.6(1.0)		
EBP course	Yes	80	5.2(1.3	t= 4.3	0.001	5.3(1.1	t=2.0	0.001	5.0(1.1	t= 4.3	0.001
	No	74	4.3(1.3			4.9(1.0			4.2(1.2		

Table 4-7 shows a significant positive association between the participant's age and the knowledge, attitude, and practice of EBP(r = 0.159, 0.234, 0.289) respectively (P < .05). However, there were only significant associations between participants' years of experience in ICU and their perceived practice (r-0.177, p<0.05).

Table 4-7: "correlation between Participants' Perceived Knowledge, Attitude, and Practice toward EBP, and Selected Demographic Characteristics"

Variable	Knowledge		Attitude		Practice	
	R	p. value	r	P. value	r	p. value
Age	.159	.049	.234	.004	.289	.001
Experience	.032	.691	.084	.302	.177	.029

"Correlation is significant at the 0.01 level (2-tailed)"
"Correlation is significant at the 0.05 level (2-tailed)".

CHAPTER FIVE

Discussion, Recommendations, and Conclusion

Introduction

In this chapter, discussion, conclusions, and recommendations will be explained. The conclusion will be formulated according to the purpose of the study. “The purpose of this study was to assess the practices, attitudes, and knowledge/skills associated with EBP, as well as the perceived barriers to EBP implementation among nurses in intensive care units in North West Bank hospitals”.

5.1. Discussion

There were numerous nursing studies that has been completed to address the problem of using evidence-based knowledge. The importance of EBP cannot be underestimated. Hospitals/ and Medical Centers are expected to be safe and highly reliable in the care they provide to their patients. Organizations that are highly reliable make use of EBP to create an optimal care environment (Friesen et al., 2017). Implementation of EBP has been found to lead to safe and quality health care, improved health outcomes, teamwork among health professionals, and job satisfaction (Carrier, 2016; Kim et al., 2017). Increasing expectations of higher quality nursing care in hospitals make it necessary for nurses to provide care based on current evidence (Zou, Hao, Guo, & Liu, 2016). Furthermore, the Institute of Medicine recommended that nurses lead and influence collaborative working relationships with the multidisciplinary health care team to improve and redesign practice environments and health systems (Institute of Medicine, 2011).

5.1.1 “Practices, attitudes, and knowledge/skills towards EBP”

The results of this study indicated that nurses’ attitudes had the highest mean score, followed by knowledge and practice, as perceived by Palestinian nurses in ICUs. This shows that nurses had more positive attitudes and knowledge. However, their practice of evidence-based practice mean scores did not reflect their attitudes and knowledge. These results were supported by previous studies that assessed nurses’ attitudes, knowledge, and practice regarding evidence-based practice (AbuRuz et al., 2017; Ammouri et al., 2014; Connor et al., 2017; White-Williams et al., 2013; Salah & Abu-Moghli, 2020; Wonder et al., 2017; Yadav & Fealy, 2012). However, the results were not consistent with the study that was conducted among nurses in Saudi Arabia (Abu Hasheesh & AbuRuz, 2017). Abu Hasheesh and AbuRuz (2017) found nurses’ knowledge and practice were higher than their attitudes toward evidence-based practice. The findings of the current study could be clarified in light of the complex context of the ICUs and the highly critical condition of patients, which makes nurses in ICUs better able to recognize the importance and significance of basing their interventions/activities on up-to-date evidence. This means that nurses in ICUs are required not only to perform routine or daily nursing care but also, essentially, to keep up with the best practice recommendations. Critical thinking, participating in interdisciplinary rounds and decision-making, administering highly sensitive therapies and medications, and applying advanced lifesaving interventions are key skills required by nurses in ICUs, necessitating a continuous search for the recommended best practice through the adoption of the EBP process.

5.1.2 Barriers towards EBP

According to the barriers to EBP, the majority of the participants had identified barriers that may have decreased their effort to engage in the evidence-based practice process. They identified that insufficient time to find research reports and insufficient time at work to implement changes in their own practice were the greatest barriers nurses face regarding the implementation of evidence-based practice. Our findings were similar to other studies that reported barriers regarding the adoption of evidence-based practice (Dalheim et al., 2012; Majid et al., 2011; Melnyk et al., 2012).

5.1.3 “Difference in nurses' perceived knowledge, attitude, and practice of EBP in icu based on selected demographic characteristics”

The findings of the current study indicated no significant differences in perceived knowledge, attitude, or practice between male and female participants. This may be because male and female RNs are from comparable backgrounds in terms of education and practice. These findings are consistent with previous studies, showing no difference in EBP knowledge, attitude, or implementation between male and female RNs (Heydari et al., 2014; Kang & Yang, 2016).

The results of the current study revealed that participants with a master's or above degree revealed a statistically significant higher level of knowledge, attitude, and practice of EBP than participants with only an undergraduate education (Bachelor or diploma). Similar results were reported by a Jordanian study (AbuRuz, et al., 2017). Other studies from various countries have also reported that higher educational preparation, with master or doctoral degrees, positively influenced EBP knowledge, attitude, and implementation (Heydari et al., 2014; Skela-Savič, Pesjak & Lobe, 2016;

Warren et al., 2016; Park, Ahn, & Park, 2015; Baird & Miller, 2015; Rose Bovino et al., 2017). The current study suggests that nurses who hold a graduate degree have received in-depth education related to scientific research and continue to search for the latest information. Generally, undergraduate nursing education in most developing countries puts more emphasis on professional knowledge and skills than on the cultivation of students' scientific research ability. Moreover, the teaching of EBP and its related skills is reserved for postgraduate studies (Al Qadire, 2019).

The results of this study showed that attending evidence-based practice courses can influence nurses' knowledge, attitude, and practice of EBP. This finding is consistent with a previous study that found that training and education in EBP were associated positively with EBP implementation (Skela-Savič, Pesjak & Lobe, 2016). In addition, the findings of the current study are comparable to those of Kang and Yang (2016) and Thorsteinsson (2013), who found that research-active nurses reported significantly higher EBP implementation. Farokhzadian et al. (2015) also found that nurses who had previously received training on EBP reported significantly higher scores on EBP knowledge. However, this result was not similar to prior studies that found no significant relationship between attending evidence-based practice training and knowledge (Abu Hasheeshu & AbRuz, 2017; Majid et al., 2011; White-Williams et al., 2013).. EBP training programs can fill gaps in EBP knowledge and skills for those nurse managers who have not received EBP education in school. Furthermore, educational training or workshops would update the understanding of EBP and facilitate communication among professionals.

5.1.4 The correlation between nurses' perceived knowledge, attitude, and practice of EBP in the icu based on selected demographic characteristics.

The findings of the current study indicated that there was a significant positive association between participants' age and their knowledge, attitude, and practice of EBP. These findings are inconsistent with previous studies (AbuRuz et al., 2017; AbuHasheesh, & AbuRuz, 2016; Jordan, Bowers& Morton, 2016; Thorsteinsson, 2013; Warren et al., 2016; Salah & Abu Mogli, 2020), which found that younger nurses had a better understanding of EBP than those of older age, had positive attitudes toward EBP, and were more likely to practice based on evidence. In addition, the results of this study showed that experience can influence nurses' practice of EBP. These results are supported by a study by Al-Busaidi et al. (2019), which indicated a positive association with years of experience and EBP due to greater exposure to EBP and training as part of continuous professional development of nurses in the study.

5.2 Recommendations of the study

Keeping in view of the results of the current study, the researcher recommends the following recommendations:

- Appropriate interventions and strategies, such as effective education and training programs, as well as the development and implementation of a hospital-wide EBP culture and infrastructure, should be designed and implemented to improve nurses' knowledge and implementation of EBP.

- Very important to increasing knowledge about the EBP among nurse , and the impact of nurse education about high EBP on their work environment and provide the holistic care to patient .
- More rigorous study, i.e., longitudinal research, is recommended to investigate factors impacting nurses' evidence-based practice attempts at more than one time point and increase the generalizability of the findings.
- Further research into organizational characteristics and their relationship to nurses' involvement in the process is also proposed.
- Very important to increase working and cooperation by all nursing staff, administration and other caregivers at hospital, because they are achieve the highest level of EBP and provide a high quality of caring to all patient.

5.3. Limitations of the study

The current study has some limitations. The study relied on a self-reported questionnaire, which could lead to reporting bias due to the respondent's interpretation of the questionnaire or desire to express their experiences. The cross-sectional design of the study does not allow for the identification of true cause-and-effect relationships. Additionally, the data was collected from North West Bank hospitals. Therefore, the generalizability of the findings might be affected and may not represent the perceptions of nurses in other districts of Palestine.

5.4 Strengths of the study

The response rate was high. This study also marked the first study in the West Bank hospitals among nurses.

5.5 Conclusion

The healthcare system requires nurses to be competent and capable, which requires nurses to function at their professional ability. For this to become a reality, the knowledge of EBP must be acquired by nurses, including nurses working in ICUs.

The findings of this study provide a basis from which Palestinian organizations can begin educational initiatives to increase the utilization and implementation of EBP among nurses.

This study confirmed that nurses' attitudes towards EBP were more positive than their knowledge/skills and practices of EBP. The greatest barriers to developing EBP among nurses in Palestine were insufficient time to find research reports and insufficient time at work to implement changes in their own practice. The study confirms significant differences between levels of education and those who attended EBP courses with knowledge, attitude, and practice towards EBP. Also, age was positively associated with EBP attitudes, practice, and knowledge/skills, and experience was positively associated with the practice of EBP. Organizations must ensure that the required resources and support are available for nurses.

The study recommended appropriate interventions and strategies, such as effective education and training programs, as well as the development and implementation of a hospital-wide EBP culture and infrastructure, should be designed and implemented to improve nurses' knowledge and implementation of EBP.

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Appendix A

Questionnaire

Knowledge, attitudes, practice and perceived barriers associated with Evidence Based practice among nurses in Intensive care units in North West bank hospitals

Part one: demographic characteristics

- Age: _____
- Gender: Male Female
- Marital Status: Single Married Other
- Years of experience: _____
- Job Title: Practical Nurse Staff Nurse Head Nurse
- Educational level: Diploma Bachelor Master and above
- Type of hospital Governmental Private
- Attending EBP courses yes No

Part two: Evidence Based Practice Questionnaire (EBPQ).

This questionnaire is designed to gather information and opinions on the use of evidence based practice amongst health professionals. There are no right or wrong answers for we are interested in *your* opinions and *your* own use of evidence in *your* practice.

1. Considering your practice in relation to an individual patient's care over the *past* year, how often have you done the following in response to a gap in your knowledge (please v or X):

Formulated a clearly answerable question as the beginning of the process towards filling this gap:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

Tracked down the relevant evidence once you have formulated the question:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

Critically appraised, against set criteria, any literature you have discovered:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

Integrated the evidence you have found with your expertise:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

Evaluated the outcomes of your practice:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

Shared this information with colleagues:
Never ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Frequently**

2. Please indicate (by v or X) where on the scale you would place yourself for each of the following pairs of statements:

1. My workload is too great for me to keep up to date with all the new evidence	☐ ☐ ☐ ☐ ☐ ☐ ☐	New evidence is so important that I make the time in my work schedule
2. I resent having my clinical practice questioned	☐ ☐ ☐ ☐ ☐ ☐ ☐	I welcome questions on my practice
3. Evidence based practice is a waste of time	☐ ☐ ☐ ☐ ☐ ☐ ☐	Evidence based practice is fundamental to professional practice
4. I stick to tried and trusted methods rather than changing to anything new	☐ ☐ ☐ ☐ ☐ ☐ ☐	My practice has changed because of evidence I have found

3. On a scale of 1 to 7 (with 7 being the best) how would you rate your

	Please circle one number for each statement	**Poor**						**Best**
1	Research skills	1	2	3	4	5	6	7
2	IT skills	1	2	3	4	5	6	7
3	Monitoring and reviewing of practice skills	1	2	3	4	5	6	7
4	Converting your information needs into a research question	1	2	3	4	5	6	7
5	Awareness of major information types and sources	1	2	3	4	5	6	7
6	Ability to identify gaps in your professional practice	1	2	3	4	5	6	7
7	Knowledge of how to retrieve evidence	1	2	3	4	5	6	7
8	Ability to analyse critically evidence against set standards	1	2	3	4	5	6	7
9	Ability to determine how valid (close to the truth) the material is	1	2	3	4	5	6	7
10	Ability to determine how useful (clinically applicable) the material is	1	2	3	4	5	6	7
11	Ability to apply information to individual cases	1	2	3	4	5	6	7
12	Sharing of ideas and information with colleagues	1	2	3	4	5	6	7
13	Dissemination of new ideas about care to colleagues	1	2	3	4	5	6	7
14	Ability to review your own practice	1	2	3	4	5	6	7

Part three: Perceived barriers to evidence based practice

1 (strongly disagree) to 5 (strongly agree) was used to measure items

	Barriers to finding and reviewing research	**1**	**2**	**3**	**4**	**5**
1	Research reports are not easy to find					
2	Insufficient time to find research reports					
3	Lack of confidence in judging the quality of research reports					
4	Difficulty identifying the implications of research findings for own practice					
5	Difficulty understanding research reports					
6	Not knowing how to find appropriate research reports					
7	Difficulty identifying the implications of organizational information (guidelines/ protocols etc.) for own practice					
8	Insufficient time to find organizational information					
9	Organizational information is not easy to find					
10	Not knowing how to find organizational information					
	Barriers to changing practice	**1**	**2**	**3**	**4**	**5**
1	Insufficient resources (e.g. equipment) to change own practice					
2	Insufficient time at work to implement changes in own practice					
3	Team culture is not receptive to changing practice					
4	Lacking the authority to change practice					

ملخص الدراسة

خلفية الدراسة: يعتمد تحسين الصحة في المجتمعات على خدمات التمريض التي تدعمها الممارسة القائمة على الأدلة. يمكن أن يؤدي التنفيذ المنهجي للممارسة القائمة على الأدلة إلى تعزيز سلامة الرعاية الصحية وتحسين نتائج المرضى. يواجه ممرضو الرعاية الحرجة التحدي الصعب المتمثل في توفير رعاية آمنة وقائمة على الأدلة للمرضى المصابين بأمراض معقدة والمعرضين لخطر كبير للمضاعفات والوفاة

هدف الدراسة: تهدف هذه الدراسة إلى تقييم الممارسات والمواقف والمعرفة / المهارات المرتبطة بـ EBP ، بالإضافة إلى العوائق المتصورة أمام تطبيق EBP بين الممرضات في وحدات العناية المركزة في مستشفيات شمال الضفة الغربية.

طريقة البحث: دراسة وصفية مقطعية مكونة من مائة وأربعة وخمسين ممرضًا من وحدات العناية المركزة في المستشفيات الحكومية والخاصة في شمال الضفة الغربية بفلسطين. أجريت الدراسة من خلال استبيان ذاتي

النتائج: أظهر التحليل أن متوسط الموقف كان 5.1 ± 1.1 ، تليها المعرفة 4.8 ± 1.4 ، ثم الممارسة 4.6 ± 1.2. أيضًا ، كانت العوائق الرئيسية أمام تنفيذ EBP هي الوقت غير الكافي للعثور على تقارير البحث (3.5 ± 1.0) والوقت غير الكافي في العمل لتنفيذ التغييرات في الممارسة الخاصة (3.4 ± 0.8). كان مستوى التعليم وحضور دورات EBP لهما فرق كبير فقط مع كل المعرفة والمواقف والممارسات الخاصة بـ EBP. بالإضافة إلى ذلك ، كان الارتباط مرتبطًا بشكل إيجابي بين العمر وتنفيذ EBP ، لكن التجربة كانت مرتبطة بشكل إيجابي بالممارسة فقط.

استنتاج :أكدت هذه الدراسة أن مواقف الممرضات تجاه EBP كانت أكثر إيجابية من معارفهم / مهاراتهم وممارساتهم في EBP. كانت أكبر العوائق التي تحول دون تطوير EBP بين الممرضات في فلسطين هي الوقت غير الكافي للعثور على التقارير البحثية والوقت غير الكافي في العمل لتنفيذ التغييرات في ممارساتهم الخاصة.

الكلمات المفتاحية: الممارسة المبنية على الدليل ، وحدة العناية المركزة ، الممرضة