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Knowledge, attitudes, practice, and perceived barriers toward evidence-based practice among Palestinian nurses in intensive care units

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Abstract

Background Evidence-based practice (EBP) implementation can improve healthcare safety and patient outcomes. The significant challenge for intensive care nurses is providing safe and evidence-based care to patients with complex illnesses who are at high risk of complications and death. This study aimed to assess the knowledge, attitudes, and practice of EBP, and the perceived barriers to EBP implementation among nurses in intensive care units (ICUs) in the North West Bank hospitals.

Methods A cross-sectional descriptive correlational design was employed, with 154 registered nurses from governmental and private ICU hospitals in the North West Bank of Palestine participating. Data were collected using a self-reported questionnaire from December 2022 to July 2023.

Results The findings revealed that the attitudes mean was ($M=5.1$ $SD\pm 1.1$), followed by knowledge ($M=4.8$, $SD\pm 1.4$), and practice ($M=4.6$, $SD\pm 1.2$). The main barriers to EBP were insufficient time to find research reports ($M=3.5$, $SD\pm 1.0$) and inadequate time at work to implement changes in own practice ($M=3.4$, $SD\pm 0.8$). A correlation was found between knowledge, attitudes, and practice of EBP with Levels of education ($t=2.68$, $p<0.01$; $t=2.98$, $p<0.01$; $t=4.83$, $p<0.01$, respectively), attending EBP courses ($t=4.30$, $p<0.01$; $t=20.0$, $p<0.01$; $t=4.30$, $p<0.01$, respectively), and age ($r=0.159$, $p<0.05$; $r=0.234$, $p<0.01$; $r=0.289$, $p<0.01$, respectively). In contrast, the experience was associated with the practice of EBP ($t=1.77$, $p<0.05$).

Conclusion The intensive care nurses had positive knowledge, attitudes, and practice of EBP, while attitudes were more favorable than knowledge and practice. Thus, the findings can assist policymakers and hospital administration in developing appropriate interventions and strategies, such as effective continuing education and developing and implementing a hospital-wide EBP culture to improve nurses' knowledge and practice of EBP.

Keywords Attitudes, Evidence-based practice, Intensive care unit, Knowledge, Practice

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Introduction

Evidence-based practice (EBP) has received widespread attention in various disciplines in the context of rapidly growing healthcare and increasing demand for more reliable healthcare services to provide patient-centered care and quality improvement [1–3]. EBP is a problem-solving method for delivering care that integrates the best accessible external evidence from systematic research, individual clinical expertise, and patient preferences and values within the context of caring [4]. EBP involves using the best research evidence to inform decision-making and deliver efficient, effective patient care, grounded in scientific principles [5]. EBP has become a major interest for healthcare practitioners, researchers, and policymakers. Systematic implementation of EBP can enhance healthcare safety and improve patient outcomes [6]. EBP is considered critical in nursing for promoting excellence in healthcare [7, 8]. Community health improvement depends on nursing services underpinned by EBP [5].

An intensive care unit (ICU) is an organized system for providing care to critically ill patients, which provides intensive and specialized medical and nursing care [9]. This unit enhances the capacity for monitoring and providing multiple modalities of physiologic organ support to sustain life during life-threatening organ system insufficiency [10]. Intensive 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 [11, 12]. The ICU is a critical area for delivering quality healthcare and improving health outcomes, including enhancement of nursing practice [13, 14]. This enhancement highlights the use of EBP to inform the decisions and practices of healthcare professionals, including nurses. Nursing care is vital in delivering high-quality care grounded in the best available evidence [4, 15]. Consequently, EBP has been considered a paradigm shift in nursing care that provides nurses with the best available research findings in delivering quality health care [16].

EBP ensures that nurses stay current with the latest knowledge, enhancing their problem-solving abilities, clinical decision-making, and judgment skills [4, 6]. Furthermore, EBP can improve the quality of nursing care, reduce uncertainty between patients and healthcare professionals, and foster accountability among healthcare professionals [17, 18]. Also, it encourages patient engagement in decision-making [19]. Nurses who practice evidence-based care use resources efficiently, improve patient satisfaction, and reduce unnecessary or ineffective procedures, ultimately leading to more cost-effective care for patients and healthcare institutions [8, 14, 20].

It was found that 30 to 40% of the patients are not treated based on current EBP, and almost 20–30% of patients receiving intervention may not be needed [21].

Nurses' ability to search for and develop an evidence-based model to help them in their practice is lacking, causing EBP to become a significant challenge [22, 23]. Knowledge acquisition about EBP is important for nurses to reach a high level of performance and practice [24]. It was indicated that EBP increases nurses' knowledge and self-confidence, allowing nurses to review guidelines, offer new evidence, and develop new knowledge and understanding [19, 25]. Unfortunately, previous studies reported that nurses lacked EBP knowledge and skills and had positive attitudes toward applying EBP in practice [26–28].

Despite the widespread endorsement of EBP, it has not become the criterion of clinical practice in many institutions [29]. Researchers suggested that the prerequisites to achieving EBP include attitudes toward EBP, understanding and confidence in the EBP process, equipping, and leadership support [29]. However, the gap between evidence and practice suggests that nurses face varying challenges and barriers to EBP practice including a lack of knowledge and skills of EBP, limited access to information, and a lack of time [30, 31]. Also, a previous study indicated that nurses face moderate organizational barriers, and EBP implementation varies based on sex, educational level, experience, and job position [32]. Thus, improving nurses' understanding and applying the best available scientific resources in their daily clinical decisions and practices is necessary. This can be achieved by offering comprehensive training, access to resources, managerial support, and mentorship from experienced nurses in EBP [26].

In Palestine, nurses often provide care based on personal experiences or traditional practices rather than scientific evidence. This approach can result in unintended consequences, including patient safety risks, higher costs, and increased nurses' workload. Nurses in the West Bank still need to translate research into practice, regardless of whether some hospitals got the health accreditation and have policies about using research in their practice decisions [33]. However, there is a significant gap in research regarding the use of EBP among nurses in these hospitals, particularly in ICUs. Gaining insights into nurses' attitudes, knowledge, and practice of EBP could clarify their role in fostering EBP within clinical settings. This study can provide policy-makers and healthcare professionals with a database for developing educational interventions and programs to address these barriers and enhance EBP implementation among nurses. Therefore, this study aimed to assess the knowledge, attitudes, and practices associated with EBP and the barriers to EBP among registered nurses in North West Bank hospitals ICUs.

Methods

Design, setting, population, and sample

A cross-sectional, descriptive correlational design was adopted. This study was conducted in ICUs in non-accredited governmental ($N=6$) and private hospitals ($N=5$) in the North West Bank districts from December 2022 to July 2023.

The targeted population for this study was registered nurses working in the selected hospitals. According to the nursing department of the Palestinian Ministry of Health and the private hospitals, approximately 200 nurses are employed in the ICUs of these hospitals. The sample size was determined using the Raosoft program, with a confidence level of 95%, a margin of error of 5%, and an anticipated response rate of 50%. Thus, a total sample of 132 participants was required for the study. All eligible nurses were included in this study. The eligibility criteria included full-time registered nurses (to maintain a sample homogeneity) who agreed to participate and provide direct care to patients. The nurses in administrative positions were excluded.

Instruments

Three tools were used to collect data including demographic characteristics (e.g., age, sex, marital status, educational levels, experience/ years, hospital sector, and attending EBP course), EBP Questionnaire (EBPQ), and two subscales of the Developing Evidence-Based Practice Questionnaire (DEBPQ).

The EBPQ was created by Upton and Upton [34] to assess nurses' use of EBP. This questionnaire consisted of 24 items distributed on three subscales: knowledge (14 items), attitudes (4 items), and practice (6 items). These items responded on a scale ranging from 1 to 7, with higher scores indicating higher knowledge, positive attitudes, and more practice of EBP [34], and a mean score was calculated for each subscale [35]. The subscales were positive if the means were higher than 4 [35]. The original EBPQ is valid and reliable [35] with a Cronbach's alpha of 0.96 for the total questionnaire; and 0.95, 0.82, and 0.93 for knowledge, attitudes, and practice subscales [36]. In this study, Cronbach's alpha for the entire questionnaire was 0.91, and 0.96, 0.83, and 0.90 for knowledge, attitudes, and practice subscales.

The two subscales of the DEBPQ were used to measure barriers to EBP [37]. The first subscale consisted of 10 items discussing the barriers to finding and reviewing evidence, and the second subscale consisted of 5 items assessing barriers to changing practice. The responses were rated on a Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree.". The scoring was calculated according to the mean for each item and subscales; higher scores indicated a greater perception of EBP barriers. The questionnaire was valid and reliable

with a Cronbach's alpha of 0.88 [38]. This study showed that Cronbach's alpha was 0.82 and 0.79 for the barriers to finding and reviewing evidence and barriers to changing practice subscales.

Data collection

After obtaining approval to conduct the study, meetings were held with ICU head nurses to facilitate data collection. During these meetings, the study objectives were clarified, and the nurses were asked to assist by providing a list of nurses along with their scheduled shifts. Eligible nurses who agreed to participate were informed about the study's goals. The researchers distributed the English-language questionnaires which were collected one week later.

Ethical considerations

Ethical approval was obtained from the Palestinian Ministry of Health with reference No# 162/811/2022. After explaining the study's purposes, informed consent was obtained from each participant. Participation was voluntary, and no names or personal information were mentioned, ensuring confidentiality. All data were kept secure and used only for research purposes.

Data analysis

Data were analyzed using the Statistical Package of Social Science (SPSS, Version 23; SPSS Inc., Chicago, Illinois). Descriptive statistics (e.g., mean, SD, frequency, and percentage) for all variables were performed. The correlation was performed using a t-test, and Pearson's test. The level of significance was at $p \leq 0.05$.

Results

One hundred and fifty-four out of 200 questionnaires were returned with a response rate of 77%. The findings revealed that the mean participants' age was 29.2 years ($SD \pm 6.3$) and the range was between 22 and 52 years. More than half of the participants (60.4%) were males, 39.6% were females, and 51.9% were married. Also, 73.4% of them had bachelor's degrees. The mean of experience was 6.1 ($SD \pm 4.9$) years. Approximately 60% of the participants worked in governmental hospitals and 51.9% attended EBP courses (Table 1).

The findings revealed that the mean of the knowledge subscale was 4.80 ($SD \pm 1.40$), indicating a high knowledge of EBP. Also, the statement "ability to review your own practice" had the highest mean ($M=4.93$, $SD \pm 1.61$), while "research skills" had the lowest mean ($M=4.09$, $SD \pm 1.63$) (Table 2).

The analysis revealed that the mean of the attitudes subscale was 5.10 ($SD \pm 1.06$), indicating positive attitudes toward EBP. Also, the statement "new evidence is so important that I make the time in my work schedule" had

Table 1 Demographic characteristics of the participants (N = 154)

Characteristics	Categories	N (%)
Sex	Male	93(60.4)
	Female	61(39.6)
Marital status	Single	74(48.1)
	Married	80(51.9)
Educational level	Bachelor	137(89.0)
	Higher than bachelor	17(11.0)
Hospital sector	Governmental	92(59.7)
	Private	62(40.3)
Attending EBP courses	Yes	80(51.9)
	No	74(48.1)
	Mean (SD)	
Age/years		29.2(6.3)
Experience/years		6.1(4.9)

N: Number; %: Percentage; M=Mean, SD=Standard deviation

Table 2 Knowledge of EBP among nurses (N = 154)

Statement	M	SD
1 "Ability to review your own practice"	4.93	1.61
2 "Ability to analyze critical evidence against set standards"	4.88	1.58
3 "Converting information needs into a question"	4.84	1.48
4 "Ability to determine the validity of material"	4.83	1.53
5 "Sharing of ideas and information with colleagues"	4.83	1.54
6 "Awareness of information types and sources"	4.81	1.52
7 "Apply information to individual cases"	4.79	1.58
8 "Dissemination of new ideas about care to colleagues"	4.79	1.56
9 "IT skills"	4.78	1.60
10 "Able to identify gaps in your own practice"	4.76	1.52
11 "Knowledge of how to retrieve evidence"	4.76	1.47
12 "Able to determine usefulness of material"	4.62	1.69
13 "Monitoring and reviewing of practice skills"	4.51	1.83
14 "Research skills"	4.09	1.63
Mean of the total knowledge subscale	4.80	1.40

M=Mean, SD=Standard deviation

the highest mean (M=5.22, SD±1.29), while "my practice has changed because of evidence I have found" had the lowest mean (M=4.86, SD±1.40) (Table 3).

The findings indicated that the mean of practice subscale was 4.58 (SD±1.22), reflecting the satisfactory practice of EBP. Also, the statement "share information with colleagues" had the highest mean (M=5.07, SD±1.62), while "critically appraised literature" had the lowest mean (3.54±1.28) (Table 3).

The results revealed that the mean of the barriers to finding and reviewing research subscale was 3.19 (SD±0.79). Also, the "insufficient time to find research reports" was the highest barrier (M=3.48, SD±0.97), while "difficulty understanding research reports" was the lowest barrier (2.96±1.11) (Table 4). Additionally, the findings revealed that the mean of the barriers to

Table 3 Attitudes and practice of EBP among nurses (N = 154)

Statements	M	SD
Attitudes toward EBP		
1 "New evidence is so important that I make the time in my work schedule"	5.22	1.29
2 "Evidence based practice is fundamental to professional practice"	5.18	1.51
3 "I welcome questions on my practice"	5.16	1.28
4 "My practice has changed because of evidence I have found"	4.86	1.40
Mean of the total attitudes subscale	5.10	1.06
Practice of EBP		
1 "Share information with colleagues"	5.07	1.62
2 "Evaluate outcomes of practice"	4.94	1.55
3 "Integrate evidence with expertise"	4.93	1.43
4 "Track down relevant evidence"	4.90	1.52
5 "Formulate clear question"	4.09	1.76
6 "Critically appraised literature"	3.54	1.28
Mean of the total practice of EBP subscale	4.58	1.22

M=Mean, SD=Standard deviation

Table 4 Perception of barriers to EBP among nurses (N = 154)

Statement	M	SD
Barriers to finding and reviewing research		
1 "Insufficient time to find research reports"	3.48	0.97
2 "Research reports are not easy to find"	3.25	0.93
3 "Lack of confidence in judging the quality of research reports"	3.25	0.94
4 "Organizational information is not easy to find"	3.25	0.98
5 "Insufficient time to find organizational information"	3.19	1.03
6 "Difficulty identifying the implications of research findings for own practice"	3.18	1.08
7 "Not knowing how to find organizational information"	3.14	1.09
8 "Difficulty identifying the implications of organizational information (guidelines/ protocols etc.) for own practice"	3.12	1.02
9 "Not knowing how to find appropriate research reports"	3.09	1.01
10 "Difficulty understanding research reports"	2.96	1.11
Mean of the total barriers to finding and reviewing research subscale	3.19	0.79
Barriers to changing practice		
1 "Insufficient time at work to implement changes in own practice"	3.38	0.83
2 "Insufficient resources (e.g. equipment) to change own practice"	3.32	0.89
3 "Lacking the authority to change practice"	3.29	1.12
4 "Team culture is not receptive to changing practice"	3.27	0.95
5 "Lack of confidence about beginning to change own practice"	3.07	1.14
Mean of the total barriers to changing practice subscale	3.27	0.72

M=Mean, SD=Standard deviation

Table 5 Correlation between perceived knowledge, attitudes, and practice of EBP and selected demographic characteristics

Variable	Category	Knowledge					Attitudes					Practice				
		M(SD)	t-test	p-value	95% Confidence Interval		M(SD)	t-test	p-value	95% Confidence Interval		M(SD)	t-test	p-value	95% Confidence Interval	
					Lower	Upper				Lower	Upper				Lower	Upper
Sex	Male	4.9(1.3)	0.95	0.339	-0.233	0.662	5.1(1.1)	-	0.943	-0.360	0.335	4.7(1.1)	1.50	0.134	-0.095	0.702
	Female	4.6(1.4)					5.1(1.1)	0.07				4.4(1.3)				
Educational level	Bachelor	4.9(1.3)	2.86	0.001**	-1.545	-0.190	4.6(1.3)	2.98	0.001**	-0.632	0.448	4.7(1.1)	4.83	0.001**	-1.762	-0.566
	Higher than bachelor	5.5(1.2)					5.2(1.0)					5.6(1.0)				
EBP course	Yes	5.2(1.3)	4.30	0.001**	0.481	1.300	5.3(1.1)	2.00	0.001**	0.001	0.672	5.0(1.1)	4.30	0.001**	0.447	1.188
	No	4.3(1.3)					4.9(1.0)					4.2(1.2)				
			r	p. value			r	p. value				r	p. value			
Age		0.159		0.048*			0.234		0.004**			0.289		0.001**		
Experience		0.032		0.691			0.084		0.302			0.177		0.029*		

M=Mean, SD=Standard deviation

* significant at $p \leq 0.05$ and ** significant at $p \leq 0.01$

changing practice subscale was 3.27 (SD±0.72). Also, the “insufficient time at work to implement changes in own practice” was the highest barrier (M=3.48, SD±0.97), in contrast, the “lack of confidence about beginning to change own practice” was the lowest barrier (3.07±1.14) (Table 4).

Table 5 reveals no significant correlation between perceived knowledge, attitudes, and practice of EBP and gender ($p > 0.05$). In contrast, a significant correlation was found between educational level and knowledge, attitudes, and practice of EBP ($t = 2.68$, $p < 0.01$; $t = 2.98$, $p < 0.01$; $t = 4.83$, $p < 0.01$, respectively), reflecting higher educational levels correlated with higher perceptions of knowledge, attitudes, and practice of EBP. Attending EBP courses significantly correlated with knowledge, attitudes, and practice of EBP ($t = 4.30$, $p < 0.01$; $t = 2.00$, $p < 0.01$; $t = 4.30$, $p < 0.01$, respectively), indicating participants who attended EBP courses had higher perceptions of knowledge, attitudes, and practice of EBP. Also, there was a significant correlation between knowledge, attitudes, and practice of EBP and age ($r = 0.159$, $p < 0.05$; $r = 0.234$, $p < 0.01$; $r = 0.289$, $p < 0.01$, respectively), reflecting advancing age correlated with higher knowledge, attitudes, and practice of EBP. However, there were only significant correlations between years of experience in the ICU and the practice of EBP ($t = 1.77$, $p < 0.05$), indicating higher experience correlated with better practice of EBP.

Discussion

The findings revealed that Palestinian intensive care nurses had higher attitudes toward EBP than knowledge and practice, which are supported by previous studies [9, 24, 26, 30, 31, 32, 36]. However, the study results were inconsistent with the study conducted among nurses in Saudi Arabia [39], which found that nurses' knowledge

and practice were higher than attitudes toward EBP. This may be due to fewer barriers in Saudi Arabia compared to Palestine helping ICU nurses have more knowledge and practice. Our findings should be understood within the complex context of ICUs, where patients frequently present with critical conditions. In this environment, ICU nurses are particularly motivated to base their interventions on the latest evidence to ensure optimal patient care [19]. Nurses are responsible for providing routine care and staying informed about the latest best practice recommendations [40].

Our study revealed that participants had a knowledge level higher than those in previous studies among ICU Jordanian nurses [9, 36] and other countries [41, 42]. In contrast, Jordan et al. [43] found that ICU nurses were unfamiliar with EBP knowledge and other studies found that nurses lacked knowledge of EBP [26–28]. The study's findings might be related to the participants' characteristics where all of them were registered nurses in the ICU who need to be up-to-date with the latest guidelines, involving certification in courses such as Basic Life Support and Advanced Cardiac Life Support. As a result of these requirements and complicated situations, ICU nurses felt that they possessed knowledge of EBP.

Furthermore, this study found that participants had positive attitudes toward EBP, which is similar to previous studies [9, 26–28, 30–32, 36, 44–46] and contradicts a previous study demonstrated that nurses had unfavorable attitudes toward EBP [39]. The findings of this study could be interpreted within the complex context of ICUs and critical patients' conditions [47]. This environment enables registered nurses in ICUs to appreciate the importance of grounding their interventions and activities in current evidence.

Additionally, our findings demonstrated satisfactory practice of EBP, which is similar to previous studies [9,

30–32, 36, 48]. Basic skills such as critical thinking, participation in interdisciplinary rounds, decision-making, and administering sensitive therapies and advanced life-saving interventions are essential [9]. Registered nurses in ICUs are expected to provide routine nursing care and stay updated on the latest best practice recommendations. Therefore, nurses in ICUs must continuously seek out and adopt EBP [19]. Implementation of EBP has been found to lead to safe and quality health care, improved health outcomes, teamwork among health professionals, and job satisfaction [49–51]. Expectations of higher-quality nursing care in hospitals continue to increase, thus, nurses need to deliver care based on the latest evidence [52].

Our study indicated that the participants identified inadequate time to find research reports and inadequate time to apply changes in their practice as the greatest barriers among ICU nurses in implementing EBP. Our findings are similar to previous studies [23, 32, 53]. This result could be related to an overcrowded work environment and the instability of patients' conditions that require close monitoring and care [54].

This study indicated no significant differences in perceived knowledge, attitudes, and practice between male and female participants. These findings are consistent with previous studies, showing no difference in EBP knowledge, attitudes, and practice between male and female nurses [9, 32, 41]. This result could be related to sample characteristics where they had the same cultural background, work environment and conditions, and education.

The results of the current study revealed that participants with higher educational levels had higher levels of knowledge, attitudes, and practice of EBP, which is similar to earlier studies [32, 36, 50, 55]. The current study indicates that nurses with graduate degrees benefit from comprehensive education in scientific research and actively seek out the latest information. In contrast, undergraduate nursing programs in many developing countries prioritize professional knowledge and skills over the development of students' research abilities. Additionally, education on EBP and related skills is primarily reserved for postgraduate studies [56].

This study showed that attending EBP courses correlated with nurses' knowledge, attitudes, 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 practice [24, 42]. Farokhzadian et al. [24] and Alqahtani et al. [24] found that nurses who previously received training on EBP reported higher EBP knowledge. However, this result was not similar to a prior study that found no significant relationship between attending EBP training and knowledge [39]. EBP training programs can fill gaps in knowledge and skills of EBP and

enhance professional values for those nurses who have not received EBP education in school [57]. Furthermore, educational training or workshops would update the knowledge of EBP and facilitate communication among healthcare professionals [4, 58].

Our findings indicated a significant positive association existed between participants' age and their knowledge, attitudes, and practice of EBP. These findings are inconsistent with previous studies [9, 36, 39, 43], which found that younger nurses had better knowledge of EBP, positive attitudes toward EBP, and were more likely to practice EBP. This result may be interpreted as older nurses having more knowledge, attitudes, and practices due to their experience. In addition, the results of this study showed that experience correlated with nurses' practice of EBP, which is supported by Al-Busaidi et al. [59]. This result could be due to increased exposure to EBP and training as part of nurses' continuous professional development [59].

Strengths and limitations of the study

This study is one of the first that examined EBP among ICU nurses in Palestine. However, it has several limitations, including relying on a self-reported questionnaire, which may introduce reporting bias due to respondents' interpretations or their desire to present their experiences in a certain light. Additionally, the cross-sectional design limits the ability to establish true cause-and-effect relationships. Furthermore, since data were collected from hospitals in the North West Bank, the generalizability of the findings may be limited, and they might not accurately reflect the perceptions of nurses in other regions of Palestine. Thus, future studies are recommended to conduct this study in different geographical areas.

Implications for nursing practice

The findings of this study provide a basis for Palestinian hospitals to establish educational programs to improve the utilization and application of EBP in ICU nurses. The findings of this study can assist policymakers and hospital administrators in developing appropriate interventions and strategies, such as effective continuing education programs and training workshops, as well as developing and implementing a hospital-wide EBP culture to improve nurses' knowledge and practice of EBP. These programs should consider the correlated factors such as educational level and training courses. Moreover, the hospital work environment should be enhanced to encourage the adoption of EBP in practice and patient care to promote the quality of care and safety culture. The nursing curriculum for undergraduates should include knowledge of EBP and its importance in patient care. Further research into organizational characteristics

and their relationship to nurses' involvement in the process is also proposed.

Future studies are recommended to examine the factors influencing nurses' attempts at EBP over multiple time points, enhancing the generalizability of the findings.

Conclusion

This study highlights critical insights into the knowledge, attitudes, practices, and perceived barriers toward EBP among Palestinian nurses in ICUs. While nurses demonstrated a moderate understanding and a generally positive attitude toward EBP, their practical application of evidence-based methods remains limited due to significant institutional and personal barriers. The main barriers to developing EBP among nurses in Palestine were a lack of time to locate research reports and insufficient time during work hours to implement changes in practice. The findings indicate a significant correlation between educational levels and participation in EBP courses and nurses' knowledge, attitudes, and practices of EBP. Additionally, age was positively correlated with EBP knowledge, attitudes, and practice, while experience was positively correlated with the practice of EBP. These findings emphasize the urgent need for targeted strategies, such as enhanced training programs, improved access to evidence-based resources, and supportive institutional policies, to foster the integration of EBP in ICU settings.

Abbreviations

EBP Evidence based practice

Acknowledgements

Not applicable.

Author contributions

Z.D. and D.T. designed the study and provided the data. M.M. and A.A. conducted data analyses, prepared tables. All authors wrote the main manuscript text and D.T. supervised the study and provided valuable comments during the drafting of the manuscript. M.M. and R.A. edited the manuscript and provided valuable comments. All authors reviewed and approved the manuscript.

Funding

The study was not funded.

Data availability

Available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Approval was obtained in accordance with the Declaration of Helsinki from the Helsinki Committee in Palestine, and the Institutional Review Board (IRB) at the Palestinian Ministry of Health with reference No# 162/811/2022. Participants provided informed written consent. Confidentiality of the data was maintained throughout data collection and analysis.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 2 November 2024 / Accepted: 19 December 2024

Published online: 23 December 2024

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