

Knowledge, Attitudes and Practices Regarding Evidence-Based Practice: A Cross-Sectional Study of Nurses at Sultan Ahmad Shah Medical Centre @IIUM (SASMEC @IIUM), Kuantan, Pahang, Malaysia

Norfadzilah Ahmad^{1*}, Aniwani Makhtar², Nik Aisyah Abdullah³ & Suhaiza Mohd Fadzil⁴

¹Department of Professional Nursing Studies, Kulliyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

²Department of Special Care Nursing, Kulliyah of Nursing, International Islamic University Malaysia, Pahang, Malaysia

³Gleneagles Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

⁴Department of Nursing, Sultan Ahmad Shah Medical Centre @IIUM, Pahang, Malaysia

ABSTRACT

Background: The aim of this study was to assess the knowledge, attitudes and practices (KAP) related to evidence-based practice (EBP) among nurses at Sultan Ahmad Shah Medical Centre @IIUM (SASMEC @IIUM) and to examine the relationship between these factors and socio-demographic characteristics.

Methods: A cross-sectional survey was conducted from April to May 2022 among 122 nurses using a structured questionnaire, including the Evidence-Based Practice Questionnaire (EBPQ). The data were analysed using SPSS version 23.

Results: The majority of nurses demonstrated moderate EBP knowledge (63.9%), positive attitude (96.7%), and moderate practice level (50%). A significant correlation was found between EBP knowledge and participation in EBP-related programs ($p < 0.05$).

Conclusion: While most nurses at SASMEC @IIUM have moderate EBP knowledge and practice, their attitudes towards EBP are overwhelmingly positive. It is recommended to improve EBP implementation through continuous education and targeted interventions.

Keywords: Nurses; Knowledge; Attitude; Practice; Evidence-based practice (EBP)

*Corresponding author

Norfadzilah Ahmad
Department of Professional Nursing Studies,
Kulliyah of Nursing,
International Islamic University Malaysia,
Pahang, Malaysia
Email: fadzilah_hmd@iium.edu.my

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INTRODUCTION

Evidence-based practice (EBP) is a foundational framework in modern nursing that aims to improve patient care and outcomes by integrating the best available research evidence, clinical expertise, and patient preferences. This approach ensures that clinical decisions are grounded in the most current and reliable evidence, promoting high-quality care and driving continuous improvement in healthcare delivery. Over the years, the concept of EBP has evolved, reflecting advancements in research methodologies and an increasing emphasis on patient-centred care.

Globally, EBP is defined through slightly different lenses, but the core principles remain consistent: the integration of evidence, clinical expertise, and patient values. Melnyk and Fineout-Overholt describe EBP as “a problem-solving approach to clinical practice that incorporates the best evidence from well-designed studies, patient values, and clinical expertise” (1). Similarly, the Institute of Medicine (IOM) defines it as “the integration of the best research evidence with clinical expertise and patient values” (2). The Agency for Healthcare Research and Quality (AHRQ) expands on this by defining EBP as “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (3). The National Institute for Health and Care Excellence (NICE) frames it as “the process of making decisions about patient care based on the best available evidence” (4). These definitions highlight the universal essence of EBP: combining solid research findings with clinical judgment and respecting the values and preferences of patients to guide care decisions.

In Malaysia, the concept of EBP is aligned with these global definitions, though it is adapted to the specific healthcare environment. For example, Awang et al. define EBP as “a process that integrates the best available evidence with clinical expertise and patient values to guide healthcare decisions and improve patient outcomes” (5). This definition mirrors international perspectives but emphasizes its contextual application within Malaysian healthcare settings. Another study by Hassan and Shah similarly describes EBP as “a systematic approach to clinical practice that involves using current best evidence from research, alongside clinical expertise and

patient preferences, to inform decision-making” (6). Both definitions reflect the core components of EBP but highlight the practical challenges and considerations unique to Malaysia.

As in other parts of the world, implementing EBP among nurses in Malaysia is critical to improving the quality of healthcare services. EBP is linked to enhanced patient outcomes, increased safety, and reduced healthcare costs, making it an essential component of modern nursing practice (6). However, the successful implementation of EBP depends on several factors, including organizational climate, nurse competency, and access to resources (7). This study assumes that socio-demographic factors, such as age, educational level, years of experience, and department, play a significant role in shaping nurses' knowledge, attitudes, and practices (KAP) towards EBP⁷. These assumptions are based on the idea that personal and professional backgrounds can affect how individuals perceive and adopt EBP in their daily practice. A supportive organizational environment with adequate salary, EBP-related education, and practical experience significantly promotes EBP implementation (8). Additionally, continuous professional development, particularly through web-based training programs, is crucial for enhancing nurses' EBP competencies (9).

Nursing professional development specialists play a key role in embedding EBP in nursing culture by bridging the gap between theoretical knowledge and practical application (6). Addressing barriers such as lack of time, management support, and access to research is essential to improving EBP uptake (10). Positive attitudes and beliefs towards EBP are linked to higher competence and utilization in clinical practice (11). Therefore, promoting positive attitudes through targeted educational programs and supportive organizational interventions can enhance EBP implementation (7). Nurse leaders also play a crucial role in building capacity and allocating resources to support EBP (8).

Integrating EBP into nursing education is vital for preparing future nurses to apply EBP in their practice (7). Teaching basic knowledge and skills related to EBP and incorporating practical teaching during clinical years can significantly improve EBP skills (9). A

multifaceted approach, including organizational support, continuous education, positive attitudes, and strong leadership, is necessary to promote and sustain EBP among nurses in Malaysia and beyond.

An important theme in the literature is the relationship between nurses' knowledge, attitudes, and practices regarding EBP. Studies have shown that higher levels of knowledge about EBP are associated with increased implementation (6). However, knowledge alone is insufficient; attitudes towards EBP also play a crucial role (10). Positive attitudes towards EBP can promote its use, while negative attitudes can hinder it, despite good knowledge (11).

Barriers such as lack of time, resources, and organizational support often prevent nurses from translating positive attitudes and knowledge into practice (9). Addressing these barriers through better organizational support and access to research resources is essential for improving EBP implementation (7). Improving EBP use among nurses requires a comprehensive approach, including continuous education, fostering positive attitudes, providing organizational support, and promoting practical application through supportive leadership (6).

The main objective of this study is to comprehensively assess the knowledge, attitudes, and practices related to EBP among nurses at Sultan Ahmad Shah Medical Centre. This includes examining the relationships between socio-demographic factors and nurses' knowledge of EBP, as well as how this knowledge relates to attitudes and practical application. The study hypothesizes that socio-demographic factors, such as years of experience, level of education, and department/ward, are significantly associated with nurses' knowledge, attitudes, and practices regarding EBP. Improve clinical handover efficacy, and the factors that promote and impede clinical handover effectiveness among the emergency staff.

METHODS

This study utilized a quantitative cross-sectional design to assess the knowledge, attitude, and practice (KAP) towards Evidence-Based Practice (EBP) among nurses at Sultan

Ahmad Shah Medical Centre @IIUM (SASMEC @IIUM) in Kuantan, Pahang.

Study Setting

The study was conducted at SASMEC @IIUM, a tertiary care hospital in Kuantan, Pahang. A convenient sampling method was employed, which is a non-probability sampling technique where participants are selected based on availability and willingness to participate. The target population for this study consisted of registered nurses working at SASMEC @IIUM. The inclusion of this population was crucial to understand the current state of EBP practices among professionals directly involved in patient care and clinical education. The participant was randomly selected from nine different wards within SASMEC @IIUM, including gynaecology, orthopaedics (1 and 2), internal medicine (1 and 2), surgery (1 and 2), and paediatrics. These wards were chosen because they are frequently used for clinical placements, which made them relevant for assessing the KAP towards EBP.

Sample Size Determination

The sample size was calculated using the Raosoft sample size calculator, considering a margin of error of 5%, a confidence level of 95%, and an estimated response rate of 50%. To account for potential non-responses, an additional 10% was added to the calculated sample size, resulting in a final sample size of 168 participants.

Data Collection Instruments

The data collection for this study was carried out using a structured paper-based survey, which consisted of two main parts: Part A (Socio-Demographic Information) and Part B (Evidence-Based Practice Questionnaire, EB PQ). Each part of the survey was designed to gather specific information relevant to the study's objectives. Part A of the questionnaire was designed to collect socio-demographic data from the participants. This section consisted of 9 items aimed at capturing essential background characteristics of the nurses involved in the study. The primary instrument used for data collection was the Evidence-Based Practice Questionnaire (EB PQ), developed by Upton and Upton (12). The EB PQ is a validated tool consisting of 24 items divided into three subscales: Knowledge

(14 items), Attitudes (4 items), and Practice (6 items). Each item is rated on a 7-point Likert scale, where higher scores indicate a more favourable response towards EBP. For this study, the questionnaire was translated into Malay and back-translated into English to ensure linguistic and conceptual equivalence. A pilot study involving 10% of the sample size ($n = 15$) was conducted to test the reliability of the translated questionnaire. The pilot study resulted in a Cronbach's alpha of 0.972 for the knowledge subscale, 0.921 for the practice subscale, and 0.782 for the attitude subscale, indicating strong internal consistency.

Data Collection

Data were collected from April to May 2022 through a paper-based survey administered to the selected nurses at SASMEC @IIUM. Prior to data collection, participants were provided with a Participant Information Sheet detailing the study's purpose, procedures, and assurances of confidentiality. Participants who agreed to participate signed an informed consent form. The survey was conducted during work hours, and participants were given approximately 20-30 minutes to complete the questionnaire. The completed questionnaires were collected immediately after completion. Incomplete questionnaires were excluded from the final data analysis to maintain data integrity.

Statistical Analysis

Data analysis was conducted using SPSS version 25. Descriptive statistics, including means, standard deviations, and frequencies, were used to summarize the demographic characteristics of the sample and the responses to the EBPQ. Inferential statistics, such as t-tests and ANOVA, were employed to examine differences in KAP towards EBP among different demographic groups. The significance level was set at $p < 0.05$.

RESULTS

A total of 122 nurses responded to the survey, yielding a response rate of 73% from the initial 168 participants. The majority of the respondents were female (89.3%), Malay (98.4%), and diploma holders (100%). Most respondents were staff nurses (99.2%) with an average age of 27.25 years ($SD = 3.076$). Nearly

half of the respondents (46.7%) had 2 to 4 years of work experience, and only 15.6% had attended an EBP-related program or training. The sociodemographic characteristics of the respondents are summarized in **Table 1**.

Level of Knowledge on EBP Among Nurses in SASMEC

The level of knowledge among nurses regarding EBP was measured using the EBPQ. The findings, as summarized in **Table 2**, indicate that a significant portion of the participants (63.9%) had a moderate level of knowledge, while 36.1% had a good level of knowledge. None of the participants fell into the poor knowledge category.

Level of Attitude and Practice Towards EBP Among Nurses

As shown in **Table 3**, a majority of the nurses (73%) displayed a positive attitude towards EBP, with the remaining 27% exhibiting a negative attitude. The data on nurses' practice towards EBP, presented in **Table 4**, shows that 50.0% of the respondents had a moderate level of practice, closely followed by 49.2% who demonstrated a good level of practice. Only one respondent (0.8%) exhibited a poor level of practice towards EBP.

Association Between Sociodemographic Characteristics and Nurses' Knowledge on EBP

To explore the association between sociodemographic characteristics and nurses' knowledge of EBP, Mann-Whitney and Kruskal-Wallis tests were conducted. The results, as shown in **Table 5**, reveal that there was a significant difference in knowledge levels between participants who had attended an EBP-related program and those who had not, with a p -value of 0.039. However, there were no significant differences in knowledge levels with respect to gender, experience in research projects, race, position, age, years of experience, or specialty ($p > 0.05$).

Table 1: Sociodemographic background characteristics (N=122)

Variable	Category	Frequency (n)	Percentage (%)	Mean (SD)
Gender	Male	13	10.7	
	Female	109	89.3	
Age	Under 25	42	34.5	27.25 (3.076)
	26-28	41	33.6	
	Above 29	39	31.9	
Ward	Gynaecology	15	12.3	
	Orthopaedic 1	11	9.0	
	Orthopaedic 2	12	9.8	
	Internal medicine 1	15	12.3	
	Internal medicine 2	13	10.7	
	Internal medicine 3	13	10.7	
	General surgery 1	16	13.1	
	General surgery 2	14	11.5	
	Paediatric	13	10.7	
	Total years experiences	<1	13	10.6
2-4		57	46.7	
5-7		36	29.5	
>8		16	13.2	
Have attending any program, training, or workshop related to EBP	Yes	19	15.6	
	No	103	84.4	

Table 2: The level of knowledge towards EBP (N=122)

Variables		Frequency (n)	Percentage (%)	Mean (SD)
Knowledge of nurses	Total score			69.20 (9.56)
	Good	71-98	44	36.1
	Moderate	43-70	78	63.9
	Poor	14-42	0	0

Table 3: The level of attitude towards EBP (N=122)

Variables		Frequency (n)	Percentage (%)	Mean (SD)
Attitude of nurses	Total score			19.07 (3.54)
	Positive	17-28	89	73
	Negative	4-16	33	27

Table 4: The level of practice towards EBP (N=122)

Variables		Frequency (n)	Percentage (%)	Mean (SD)
Practice of nurses	Total score			30.56 (5.03)
	Good	31-42	60	49.2
	Moderate	19-30	61	50.0
	Poor	6-18	1	0.8

Table 5: The relationship between sociodemographic characteristics and level of knowledge (N=122)

Variable	n	Mean (SD)	Mean rank	Sum of rank	p-value
Attending any program related to EBP					0.039
Yes	19 (15.6)	69.20 (9.56)	76.84	1460.00	
No	103 (84.4)		58.67	6043.00	

Notes. Mann-Whitney test, *p < 0.05 as significant level 95% CI

Association Between Nurse’s Knowledge and Attitude Towards EBP

The analysis revealed a statistically significant correlation between nurses' knowledge and their attitudes towards Evidence-Based Practice (EBP), with a p-value of 0.015, which is below the 0.05 threshold for significance. This finding suggests that as nurses' knowledge of EBP increases, their attitudes towards its implementation become more positive. However, it is important to note that while the correlation is statistically significant, the strength of the association is relatively weak, with a Spearman's correlation coefficient (r) of 0.277. This weak positive correlation indicates that although there is a relationship between knowledge and attitude, other factors may also play a significant role in shaping nurses' attitudes towards EBP.

Similarly, the study found a statistically significant correlation between nurses' attitudes towards EBP and their actual practice of EBP, with a p-value of 0.01, indicating a meaningful relationship between these variables. However, like the knowledge-attitude correlation, the strength of this association is also weak, with a Spearman's correlation coefficient (r) of 0.240 (Table 6). This suggests that while nurses with more positive attitudes towards EBP are somewhat more likely to integrate EBP into their clinical practice, the relationship is not strong, and other influencing factors may contribute to the extent of EBP practice among nurses. Table 6 shows the Spearman Correlation between level of Attitude and Practice towards EBP.

Table 6: Spearman correlation between level of attitude and practice towards EBP (N=122)

Variables	Domain	r-value	p-value
Attitude	Practice	0.240	0.01

Notes. Spearman correlation test, **p* < 0.05

DISCUSSION

The primary aim of this study was to assess the knowledge, attitudes and practices (KAP) related to evidence-based practice (EBP) among nurses at SASMEC @IIUM. The results showed that while the majority of nurses (63.9%) had moderate knowledge of EBP and a large proportion showed a positive attitude (73%), only half (50%) exhibited moderate practice of EBP, with minimal poor practice (0.8%). This

suggests a notable gap between positive attitudes and practical application of EBP that warrants further investigation.

The weak positive correlation between knowledge and attitude (Spearman’s *r* = 0.277, *p* = 0.015) suggests an important but limited influence of knowledge on shaping attitudes towards EBP. This result reflects previous research findings that knowledge is important but not sufficient to ensure the successful implementation of EBP (1). This weak correlation suggests that nurses' ability to translate their knowledge into a positive attitude – and ultimately into practice – depends on other factors, even if they have the appropriate knowledge. These factors may include organizational infrastructure, the availability of mentors, and a supportive work environment conducive to the integration of EBP. As highlighted by previous researchers, simply increasing knowledge without removing structural barriers is unlikely to lead to improvements in EBP implementation (3).

Also, the weak correlation between attitude and practice (Spearman’s *r* = 0.240, *p* = 0.01) suggests that while nurses with more positive attitudes toward EBP are slightly more likely to engage in EBP, the relationship is not strong. This suggests that it is difficult to translate a positive attitude into concrete clinical practices. Previous studies have highlighted this issue and found that even when nurses have a positive attitude towards EBP, practical application can be hindered by systemic issues such as insufficient time, limited resources or lack of institutional support (11). Therefore, the findings of this study highlight the importance of organizational factors, such as fostering a culture of EBP through ongoing education, improving access to EBP-related tools and materials, and ensuring that leadership supports the integration of research into daily practice (5). Without these supportive structures, even nurses with positive attitudes and knowledge will struggle to fully implement EBP.

Although no significant influence of clinical experience or years of service on EBP practice was found in this study, as has been the case in other research (10), this may be due to the specific context of SASMEC @IIUM. Hospital-specific factors such as resource allocation or the extent of institutional prioritization of EBP might have a stronger influence on practice

than the individual level of experience. This emphasizes the need for tailored approaches in different healthcare settings, as the size, resources, and policies of an institution can significantly influence the adoption of EBP (2).

The weak correlations found in this study underline the complexity of implementing EBP in practice. While knowledge and attitudes are important, they alone are not sufficient to drive the consistent application of EBP. Healthcare organizations need to take targeted action to close the gap between EBP knowledge and practice. Regular hospital-sponsored workshops that focus on both the theoretical and practical aspects of EBP could help bridge the gap between knowledge and practice (13). These programs should include hands-on activities that simulate real-world clinical decision making based on evidence to ensure that nurses can directly apply what they learn to their practice.

Creating mentorships where experienced nurses or clinical leaders provide guidance on integrating EBP into daily routines could foster a supportive environment. Mentors could also address barriers nurses face, such as time management and finding credible research, facilitating smoother adoption of EBP (13,14,15). Hospitals should also ensure easy access to databases, journals, and other resources that support evidence-based decision making. Allowing nurses time during their shifts to study the current literature could help integrate EBP into routine practice without placing additional time burdens on staff. In addition, leadership should actively promote EBP by recognizing and rewarding nurses who successfully integrate EBP into their work. Creating an organizational culture that places a high value on EBP can be instrumental in moving nurses from a positive attitude to consistent practice. Leaders should also focus on removing systemic barriers, such as inadequate staffing or high workloads, which often prevent nurses from practicing EBP despite their positive attitudes (13,14,15).

This study shows a difference between nurses' positive attitudes towards EBP and their ability to apply it effectively, mainly due to the weak correlation between knowledge, attitude and practice. Although nurses are generally well informed and positive about EBP, the practical application of EBP is limited by factors beyond individual knowledge and attitude. These

findings suggest that facilities need to go beyond simply improving nurses' knowledge and attitudes and address organizational and systemic barriers if EBP is to be fully implemented in the clinical setting. Interventions such as tailored EBP training, mentorship programs, and leadership support are essential for promoting the consistent use of evidence in clinical practice. Future research should focus on exploring these factors in more detail to identify effective strategies for bridging the gap between EBP knowledge, attitudes and practice.

CONCLUSION

In conclusion, this study highlights the need for targeted interventions to enhance the knowledge, attitudes, and practices related to EBP among nurses at SASMEC @IIUM. By addressing the identified barriers and promoting a culture that supports EBP, the hospital can improve the quality of care provided to patients. These findings underscore the importance of a multifaceted approach to promoting EBP, which includes both individual and organizational-level interventions.

LIMITATIONS AND RECOMMENDATIONS

While this study provides valuable insights into the KAP related to EBP among nurses, it has several limitations. The study was conducted in a single medical centre, which may limit the generalizability of the findings to other healthcare settings. Additionally, the reliance on self-reported data may introduce bias, as nurses may overestimate their knowledge or underreport barriers to EBP implementation. Future research should consider using objective measures of EBP practices and expanding the study to include multiple healthcare settings for a more comprehensive understanding of the factors influencing EBP among nurses.

CONFLICT OF INTEREST

The authors declared no conflict of interest.

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AUTHOR CONTRIBUTIONS

NA: writing the manuscript, support with literature content and, finalizing and editing the manuscript.

NAA: assist in data collection and data analysis.

SMF: assist in data collection.

AM: Finalizing and editing the manuscript.

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