Original Article :

Attitudes and Knowledge about Evidence-Based Practice among Saudi Postgraduate Nursing Students

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Abstract

Background and Aims:
Evidence-based practice (EBP) has helped nurses in taking medical decisions and staying up-to-date with the latest knowledge in nursing care. Nurses need to have a positive attitude, enough knowledge, and an awareness of relevant research to apply EBP and promote high-quality nursing care effectively. This study was carried out to assess Saudi postgraduate nursing students' attitudes, knowledge, and practice about evidence-based practice.

Methods:
A descriptive survey with cross-sectional data collection was conducted online by applying the evidence-based practice questionnaire (EBPQ) to 311 Saudi postgraduate nurses.

Results:
The overall mean EBPQ score was 5.44±.74. Attitude had the highest mean score (5.81±1.08), followed by knowledge (5.52±.85) and practice (5.00±.94). Low-to-moderate significant correlations were found among the three EBPQ components (practice-attitude: r=.257; practice-knowledge: r=.296; attitude-knowledge: r=.569; P<.001). Age, marital status, and smoking status had a significantly impacted on the participants' responses (P<.05). Nurses aged 41–50 had the highest attitude score among all age groups. Married nurses had higher knowledge scores than the other groups, while smokers had higher practice scores than non-smokers.

Conclusions:
Here, the average total score was higher than those reported in previous studies, indicating the willingness of Saudi nurses to contribute to evidence-based practice by improving their knowledge and attitudes.

Keywords:
Nursing, evidence-based practice, knowledge, attitude, practice

Introduction

Nurses provide a wide variety of services in all healthcare contexts, from specialist hospitals to health centers and communities. Nursing is considered the largest professional category in the health sector, representing more than 50% of the entailed professional occupations, with a constantly growing size and expansion to different field [1]. Nevertheless, this growth is uneven and insufficient to meet the rapidly increasing demands, with some countries lagging as reflected by the great diversity in the density of nursing personnel in the population [1]. In Saudi Arabia, the density of the nursing workforce was 50–74 per 10,000 people in 2018, which is higher than that of developing countries. Yet, the challenge of even distribution and retention of nurses remains.

Nurses are under constant pressure because of the increasing expectations of the stakeholders for high-quality patient care. To achieve this, evidence-based practice (EBP) is one of the major keys. The origins of EBP appeared during the times of Florence Nightingale. EBP gained popularity in the 1990s when nursing research was innovated. EBP is a combination of the best current evidence and clinical experience with an emphasis on patient preferences and values [2]. In this context, nursing professionals explore and implement the connection between research and practice through evidence [2].

EBP is defined as the application or translation of research outcomes to the routine administration of patient care and clinical processes [3]. By applying it, the best available evidence is combined with clinical insights and proficiency, while considering patients' exclusive needs and personal preferences. If this process is constantly implemented, ideal patient outcomes would be achieved [3].

The implementation of EBP has six steps [3]. The first step is to ask a question; for instance, what and why works well, and what could be improved? The second step is to obtain evidence by conducting literature research based on the clinical question proposed in the first step. The third step is literature appraisal; that is, to organize, read, and critique peer-reviewed studies. The fourth step is to apply the findings to decision-making in clinical practice by integrating the evidence into skills and patient preferences and making evidence-based recommendations for day-to-day practice. The fifth step is to evaluate the outcomes by reviewing the collected data and recording the approach including any revisions or changes. The final step is information dissemination by sharing the results with others, which inspires optimal

practices, prevents duplicate work, and contributes to the existing resources that support or oppose the practice [3].

Many studies have examined nurses' knowledge, attitudes, and practice of EBP worldwide, revealing that nurses have good or excellent knowledge, positive attitude, and a good level of EBP implementation [3,4]. Nonetheless, some studies found low or moderate levels of nurses' EBP-related knowledge, attitudes, and practice. In study [5] conducted in Iran and focused on self-efficacy, nurses' attitudes towards EBP and the required training to successfully implement this approach documented unfavorable attitudes and insufficient self-efficacy. The nurses who participated also demonstrated a moderate demand for training in all EBP aspects. These results suggest that nurses do not adequately apply EBP.

In addition, some studies examine the Knowledge, attitudes, and practice of nursing students on evidence-based practice. For example, the exploratory, descriptive, analytical study conducted by [6] among 125 nursing students used the scale of the Evidence-based Practice Questionnaire (EBPQ). The result of the study found that the mean score for the questionnaire was 4.73 (SD = 0.79), with a higher score in the Attitudes domain. In addition, this study confirms the gap between the Knowledge and skills associated with the Evidence-Based Practice of nursing undergraduate students. Another study done to examine the knowledge and attitude of applying EBP of 82 nursing students in Randhawa by [7] found that most students had high knowledge of the steps of EBP, however, half of them reported negative attitudes of applied EBP.

In Saudi Arabia, there is limited research on nurses' knowledge, attitudes, and practice of EBP. In a survey with 227 staff nurses, attitude toward EBP had the highest mean score followed by knowledge and implementation [8]. Moreover, a similar study conducted with a descriptive design and 262 staff nurses showed that most nurses had a high level of knowledge and negative attitudes [9]. In the same study, a relationship between knowledge and educational attainment was found, while nurses' perception of EBP was associated with sociodemographic information, such as gender, career experience, and educational level. In a recent study, nurses presented good knowledge, positive attitudes, and EBP application as evaluated by the overall EBP score [10]. Additionally, nurses' marital status, nationality, highest educational degree, job title, and years of experience significantly affected the implementation of EBP.

Nowadays, the goal is to develop EBP

for nursing, with the best up-to-date research evidence applied to providing high-quality healthcare combining it with patient preferences and clinical skills to achieve, eventually, patient outcomes. EBP implementation should be one of the most important educational objectives in nursing education. In this context, determining the extent of postgraduate nursing students' knowledge, attitudes, and practice of EBP in the workplace is important since it can provide crucial information to identify areas requiring improvement.

To the best of the author's knowledge, there is no study on postgraduate nursing students' knowledge, attitudes, and practice of EBP. This study is the first to examine these aspects in this population in the Kingdom of Saudi Arabia.

The teaching of EBP was not common in the nursing education programs. [11] Mention stated that prior to 2000, EBP was not included in the curriculum of the nursing education program. However, in the last decade, there has been more intention to incorporate EBP in the teaching of nursing programs in most of the world. In Saudi Arabia, most universities usually have one course focusing on EBP.

Therefore, there is a need to examine postgraduate students' knowledge, attitude, and practice regarding EBP. For example, suppose the nursing students have appropriate knowledge, good practice, and a positive attitude toward EBP. Consequently, they will be familiar with EBP and research development, which may lead to higher self-confidence and improved clinical practice, which may lead to improving patient care and safety. Examining the student's knowledge of EBP will lead to a comprehensive evaluation of how EBP is taught, learned, and practiced by postgraduate students. Therefore, this study aims to identify the knowledge, skills, and attitudes of postgraduate nursing students in Saudi Arabia regarding evidence-based practice.

Methods

Design

The study used a quantitative cross-sectional approach relying on data collected via the EBP questionnaire (EBPQ).

Sampling and Procedure

The questionnaire was administered to all master nursing students at Majmaah, Hail, and Hafer Albaten universities. This study was used a convenience sampling method and a total of 311 out of ~400 students completed the questionnaires (response rate: ~78%). The questionnaire was administered via Google Forms and was sent to the participants through email and WhatsApp.

Study permission was requested from the

Research Ethics Committee of Majmaah University (MUREC) (approval number: MIJREC-March.14/COM-2021/27-2). The participants were informed that the study had scientific research purposes only and that participation was voluntary. They were allowed to refuse to participate or withdraw from the study at any time. The principle of confidentiality and anonymity was preserved throughout the research to protect the participants' rights.

The EBPQ Instrument

EBPQ is a short inventory that was created by Upton and Upton [11] in 2006 to evaluate nurses' EBP knowledge, attitudes, and practice and has been previously used in research [11-13]. The questionnaire includes 24 items split into three subscales: knowledge (14 items), attitude (4 items), and practice (6 items). A higher score is linked to a more positive awareness, attitude, and use of EBP, respectively. Each item is assessed on a 7-point Likert scale (1: "Poor/Never"; 7: "Best/Frequently"). When a response scored > 4, it was considered positive [14].

The scale shows high internal consistency (Cronbach's alpha [α] = .92 for the complete tool). Furthermore, the three subscales demonstrate adequate-to-excellent internal consistency (attitude: α = .79; knowledge: α = .94; practice: α = .85).

Socio-Demographic Information

A short inventory with eight closed-ended items was used to document the respondents' social and demographic characteristics. The questions were selected based on previous findings showing that socio-demographic factors are associated with EBP aspects.

Statistical Analysis

The completed questionnaires were saved as Excel files, and the data were transferred to the IBM SPSS Statistics 28.0 statistical software package for analysis. Demographic information was summarized using counts (N) and percentages (%). Participants' responses were summarized as means (M) and standard deviation (SD). The normality assumption was tested using skewness (skewness index absolute value >3) and kurtosis (kurtosis index absolute value >10) for each item [18]. The results showed that the assumption was not violated (Table 1–3). Cronbach's alpha was calculated to assess the questionnaire's internal consistency (reliability). One-sample Student's t-test was performed to assess the response positivity. Two-sample Student's t-test and One-way ANOVA were performed to examine the effect of demographic differences in the dimensions of EBP (i.e., knowledge, attitudes, and practice). Correlation analysis

was also performed to reveal any significant relationships between the study variables. P-values <.05 were considered significant.

Results

The majority of the nurses were aged 21–40 (86.2%). Males (59.2%) represented a larger proportion than females (40.8%). The majority were married (61.1%), while 36% were single and only 2.9% were divorced. Only 55 nurses (17.7%) were smokers. All participants were Saudi nationality with 100%. The participants' profile is summarized in Figure 1.

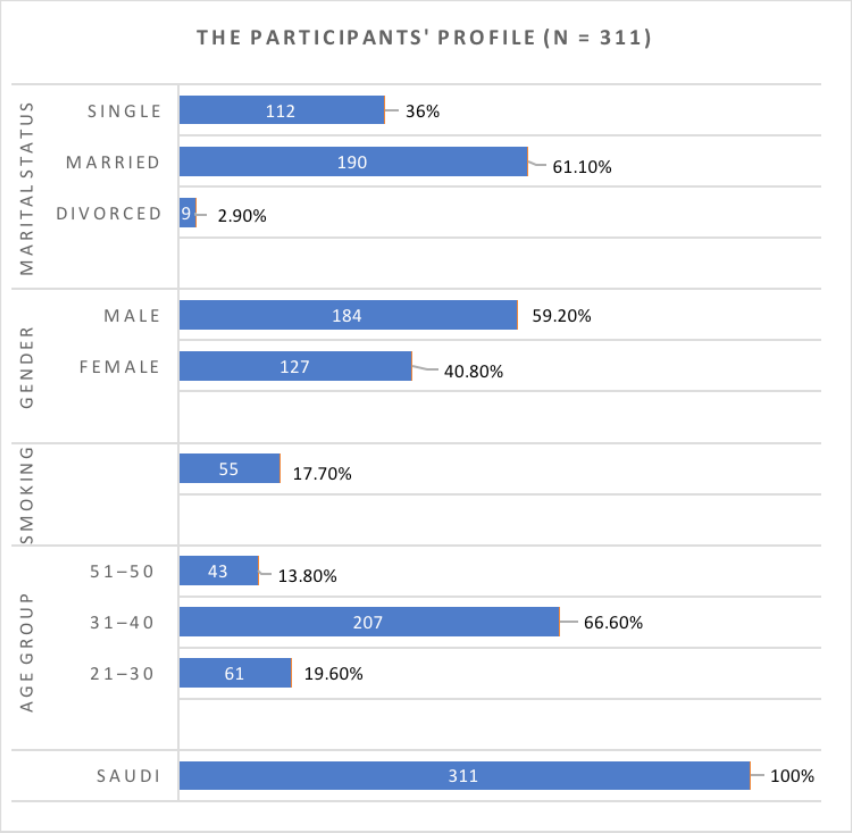


Figure 1. The participants' profile (N = 311).

Practice presented the least positive scores (71.6%) among the three dimensions (M=5.01, SD=0.91) (Table 1), while attitude had the highest positive scores (83.2%) (M+5.82, SD=1.07) (Table 2), followed by knowledge (positive scores: 79.1%M=5.53, SD=0.82) (Table 3).

A one-sample t-test for the questionnaire items was used to determine whether nurses' scores were positive (i.e., > 4). Mean scores were significantly higher than 4 (P<.001), meaning that all items are considered positive. The correlation analysis indicated significant positive associations among the three EBP variables (practice-attitude: r=0.26; practice-knowledge: r=0.30; knowledge-attitude: r=0.57; P<.001).

Table 1. Descriptive summary for practice (*N*= 311).

Item		% (+)	M±SD	Skew	Kurt	MD (*t*)
Practice		71.6	5.01±0.910	-.303	-.204	1.01 (19.58)*
1	Formulated a clearly answerable question to fill this gap	70.6	4.95±1.528	-.584	-.196	0.95 (10.91)*
2	Tracked down relevant evidence once the question was formulated	67.4	4.72±1.353	-.041	-.842	0.72 (9.35)*
3	Critically appraised, against set criteria, any discovered literature	65.2	4.56±1.17	.237	-.528	0.56 (8.48)*
4	Integrated the found evidence with their expertise	73.8	5.17±1.259	-.690	.685	1.17 (16.35)*
5	Evaluated the outcomes of the practice	75.3	5.27±1.126	-.397	-.261	1.27 (19.88)*
6	Shared this information with colleagues	77.1	5.40±1.195	-.444	-.47	1.4 (20.64)*

** P<.001*

% (+): Percentage of positive scores; Kurt: kurtosis; M ± SD: mean ± standard deviation; MD: mean difference Skew: skewness;

Table 2. Descriptive summary for attitude (*N*= 311).

Item		% (+)	M±SD	Skew	Kurt	MD (t)
Attitude		83.2	5.82±1.068	-1.106	1.029	1.82 (30.11)*
1	New evidence is so important that I make the time in my work schedule	79.2	5.55±1.469	-1.186	.988	1.55 (18.57)*
2	I welcome questions about my practice	85.9	6.02±1.309	-1.655	2.801	2.02 (27.17)*
3	Evidence-based practice is fundamental to professional practice	87.4	6.12±1.226	-1.481	2.065	2.12 (30.44)*
4	My practice has changed because of evidence I have found	80.2	5.62±1.463	-1.251	1.220	1.62 (19.50)*

** P<.001*

% (+): Percentage of positive scores; Kurt: kurtosis; M ± SD: mean ± standard deviation; MD: mean difference Skew: skewness;

Table 3. Descriptive summary for knowledge (*N*= 311).

Item		% (+)	M±SD	Skew	Kurt	MD (t)
Knowledge		79.1	5.53±.823	-.344	-.085	1.53 (32.85)*
1	Research skills	77.4	5.42±1.178	-.329	-.572	1.42 (21.29)*
2	Information technology skills	79.4	5.56±1.137	-.166	-1.143	1.56 (24.14)*
3	Monitoring and reviewing practice skills	80.0	5.60±1.111	-.627	-.107	1.60 (25.42)*
4	Converting information needs into a research question	77.0	5.39±1.139	-.352	-.593	1.39 (21.56)*
5	Awareness of major information types and sources	81.6	5.71±0.980	-.302	-.642	1.71 (30.77)*
6	Ability to identify gaps in one's professional practice	77.7	5.44±1.131	-.995	1.552	1.44 (22.46)*
7	Knowledge of how to retrieve evidence	78.2	5.48±1.040	-.204	-.648	1.48 (25.02)*
8	Ability to critically analyze the evidence against set standards	74.5	5.21±1.305	-.434	-.468	1.21 (16.38)*
9	Ability to determine how valid the material is	75.8	5.31±1.119	-.618	.857	1.31 (20.62)*
10	Ability to determine how useful the material is	78.9	5.52±1.071	-.436	-.007	1.52 (25.10)*

Item		% (+)	M±SD	Skew	Kurt	MD (t)
11	Ability to apply information to individual cases	79.6	5.57±1.099	-.831	1.645	1.57 (25.18)*
12	Sharing of ideas and information with colleagues	86.6	6.06±.977	-.729	-.453	2.06 (37.21)*
13	Dissemination of new ideas about care to colleagues	79.5	5.57±1.162	-.515	.165	1.57 (23.77)*
14	Ability to review one's own practice	80.5	5.63±1.063	-.783	.598	1.63 (27.10)*

** P<.001*

% (+): Percentage of positive scores; Kurt: kurtosis; M ± SD: mean ± standard deviation; MD: mean difference; Skew: skewness;

The relationships between demographic factors and EBPQ scores are presented in Table 4. There was a significant difference between age groups in the practice, attitudes, and the total EBPQ mean scores (P<.05). Post-hoc analysis revealed that the 41–50 age group had the highest mean attitude scores among all age groups (P<.05). As for the total EBPQ score, the age group 41–50 had higher scores than the 31–40 age group (P<.05).

A significant difference was found in the mean practice and knowledge scores according to marital status (P<.05). However, the post-hoc test did not reveal significant pair differences among the three marital status variables. Smokers had a significantly higher practice mean score (M=5.26, SD=1.01) than non-smokers (M=4.96, SD=0.88) (t=-2.09, P=.04).

Table 4. Comparison of EBPQ and subscale mean scores of the participants in terms of demographics.

Socio-demographics M±SD	Practice		Attitude		Knowledge		Total EBPQ	
	TS & p	M±SD	TS & p	M±SD	TS & p	M±SD	TS & p	
Gender								
Female	5.01±.87	*t*=-.037	5.95±.94	*t*=1.718	5.57±.76	*t*=.700	5.51±.66	*t*=1.107
Male	5.01±.94	*P*=.970	5.74±1.14	*P*=.087	5.51±.87	*P*=.485	5.42±.75	*P*=.269
Age Group								
21–30	5.20±.55	*W*=4.42	5.86±.71	*W*=17.56	5.50±.63	*W*=1.025	5.52±.45	*W*=8.32
31–40	4.92±.99	*P*=.014*	5.66±1.14	*P*<.001**	5.51±.85	*P*=.363	5.36±.77	*P*<.001**
41–50	5.17±.90		6.54±.82		5.71±.91		5.81±.64	
Marital Status								
Divorced	4.65±.57	*W*=4.76	5.81±1.05	*F*=0.010	4.99±.60	*F*=3.05	5.15±.54	*F*=.950
Married	4.94±1.02	*P*=.018*	5.82±1.15	*P*=.990	5.60±.84	P=.049*	5.45±.75	*P*=.390
Single	5.17±.70		5.83±.92		5.46±.79		5.49±.67	
Smoking								
Non-smoker	4.96±.88	*t*=-2.09	5.84±1.06	*t*=.46	5.49±.78	*t*=-1.850	5.43±.66	*t*=-1.260
Smoker	5.26±1.01	*P*=.040*	5.76±1.10	*P*=.645	5.75±.97	*P*=.068	5.59±.92	*P*=.212

** P<.05; ** P<.01.*

F: One-way ANOVA; M ± SD: mean ± standard deviation; t: Student's t-test; TS: t-statistics; W: Welch statistic by One-way ANOVA.

Discussion

The present study was conducted to assess Saudi postgraduate nursing students' attitudes, knowledge, and application of EBP. The mean score for the total EBPQ was 5.44±.74, a score that is higher than that of previous reports [14-16]. More specifically, in a study conducted in China, the mean EBPQ score was 4.24±.79 16. In another study conducted in Spain, the mean EBPQ score was 5.02 [15].

In the present study, attitude acquired the highest scores (5.81±1.08), followed by knowledge (5.52±0.85), while practice had the lowest scores (5.00±.936). This is consistent with two studies conducted with Chinese and Jordanian nurses [16,17]. However, this study disagrees with a study done by [7], who found that about 50% of the nursing students reported negative attitudes of applied EBP. One possible reason why the postgraduate nursing students in this study have high knowledge, positive attitude, and good practice of EBP is that they are more participation required from the students in the academic's research activities through research courses and during their working on a thesis which improves their knowledge, an attitude of EBP.

The attitude score of the postgraduate nursing students in this study resulted in a mean score of (5.81±1.08). This outcome come with somewhat with the results reported by [19], who determined a mean score for the attitude of (5.5 ± 1.2). Moreover, [20] reported roughly the same scores compared to the present study.

In particular, the participants' score in the Knowledge aspect (5.52±0.85) implies that the postgraduate nursing students had a high level of knowledge about EBP. This result is higher than findings from a study in Oman showing a level of EBP knowledge of (4.9±1.2) [19]. This outcome suggests that the postgraduate nursing students might have been exposed to several factors that might have increased their knowledge of EBP, reflecting [21] assertions that healthcare professionals who were exposed to scientific research tended to improve their EBP knowledge and attitude compared to those who had not.

The present study also reported that the level of practice of EBP among postgraduate nursing students was high, with a score of (5.00±.936). This finding is higher than the results of a study conducted in the United States that reported a mean score of (2.16±0.67) [22]. Previously, in a Jordanian study, males and females presented different mean scores in the individual EBPQ subscale [17]. However, this study does not confirm these results. Importantly, here, significant differences in scores depended on age groups, marital status, and smoking status.

Limitations

This study had three limitations. First, it was conducted in three universities, so it cannot be generalized to the rest of the Kingdom of Saudi Arabia. Moreover, this study used quantitative data, blurring the understanding of the context of the phenomenon. Last, since the study focused on postgraduate nursing students, the results cannot be generalized to other postgraduate students or nurse staff.

Conclusion

This study showed that postgraduate nurses in Saudi Arabia had a positive attitude, knowledge, and applicability of EBP, indicating their willingness to contribute to this process. However, nurses' practice scores imply that there is a need for improvement so that they are in line with the attitude and knowledge aspects of EBP. Based on the significant correlation found between practice, attitude, and knowledge, it is recommended to improve the level of attitude and knowledge among postgraduate nurses to raise their engagement in practice when implementing EBP.

There are certain recommendations that may improve the knowledge, attitude, practice of applying EBP. Postgraduate nursing programs must evaluate their current EBP curriculum and their need to increase the number of teaching contents of evidence-based practice (EBP) in postgraduate courses. In addition, postgraduate nursing students need role models from nursing faculties in the clinical area. In addition, nursing faculty members need to be appropriately knowledgeable and qualified with modern teaching techniques to be models from nursing faculties in the clinical area so they can influence nursing students. Finally, there is a need to increase the clinical components related the EBP. Consequently, this will lead to an improved quality of healthcare services and the development of the nursing field in Saudi Arabia, reducing the gap between healthcare needs and the nurses' workforce.

Conflict of interest

The author declares no conflict of interest

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