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Nurses' Knowledge, Attitudes, and Implementation of Evidence- based Practice in Medina, Saudi Arabia

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Abstract

Background: The EBP is an essential competency that all healthcare professionals, including nursing staff, should master. The importance of EBP lies in that it facilitates the delivery of effective, efficient, and safe patient care. Thus, examining the use of EBP among nurses in Madinah's hospitals is essential. Aim: The aim of the study is to identify the knowledge, attitudes, and practices of nurses regarding evidence-based practice, and the relationship between the subscales. Methods: The study used a descriptive cross-sectional design with a self-administered survey. Results: In this study, the nurses had positive views regarding EBP. Specifically, the knowledge/skills subscale had the highest score followed by the practice subscale and then the attitude subscale. There was a significant difference between nurses' work experiences and knowledge/and skills. There was a significant positive relationship between EBP subscales. Conclusion: The hospitals in Medina need to improve their infrastructure in order to support evidence- based practice (EBP) and research.

Keywords: *nursing; healthcare; health disparities; social determinants of health; culturally competent care; nursing education; healthcare advocacy.*

Introduction

Background

Evidence-based practice (EBP) is a vital aspect of providing high-quality care which involves the integration of current research, clinical expertise, and patient preferences to inform clinical decision-making (Schutte et al., 2022). It results in higher quality care and improved patient outcomes compared to care based on traditional approaches and methods (Melnyk et al., 2018; Mokhtar et al., 2012). EBP in nursing improve performance and clinical decision-making skills based on evidence and facilitates the development of personalized care plans, which means that more effective patient care is offered (Crable et al., 2020; Majid et al., 2011; Shifaza & Hamiduzzaman, 2019). Implementation of evidence-based practice (EBP) decreases healthcare costs, geographic variation in healthcare delivered, and limitation of unnecessary variations in practice by bridging the gap between research and practice (Crable et al., 2020; Melnyk & Fineout- Overholt, 2015; Mohammad et al., 2024a; Mohammad et al., 2023a; Mohammad et al, 2024b). When nurses actively engaged in EBP, they experience increased job satisfaction and empowerment, which in turn increase in the retention rate in healthcare settings (Melnyk & Fineout-Overholt, 2015). Additionally, this approach helps nurses stay up to date with technological advancements, contribute substantially to quality and patient safety initiatives, and enhance uniformity and efficiency in care delivery.

Nurses' knowledge and positive attitude toward EBP are crucial for effective healthcare implementation (Chen et al., 2020; Hashish et al., 2020). It significantly influences the adoption, implementation, and maintenance of evidence-based practices in clinical settings (Holt et al., 2010; Kitson et al., 2008;

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Mohammad et al., 2023b; Al-Hawary et al., 2020; Al-Husban et al., 2023). The significance of attitudes toward EBP in healthcare settings has been increasingly discussed in the literature (Ma'moun & Abu-Moghli, 2020; Mudderman et al., 2020; Pervin & Hagmayer, 2022).

Previous studies revealed a gap between positive attitudes toward EBP and actual implementation, (Kaseka & Mbakaya, 2022; Zammar, 2022). Similarly, national studies showed that nurses had inadequate knowledge and skills, low practices despite having a positive attitude toward EBP (Alqahtani et al.,2019; Elarab et al., 2012; Al-Nawafah et al., 2022; Alolayyan et al., 2018).

The available literature suggests that nurses acknowledge the value of EBP; however, its implementation varies due to various factors. These have been identified in multiple studies as limited time, resources, support, knowledge, competencies, autonomy, finance, and access restrictions (Alqahtani et al., 2019; Bahadori et al., 2016). Though healthcare providers, including nurses, in Saudi Arabia, have begun implementing EBP, further investigation into their knowledge, attitudes, and adoption of EBP is still required. The barriers that prevent the use of research findings can be overcome by gaining knowledge of research methods and the ability to evaluate research reports, which can enhance healthcare quality critically. Therefore, having a positive attitude, sufficient knowledge, and practical research utilization skills are necessary for nurses to implement EBP and support quality care.

There are limited studies done in Saudi Arabia's healthcare settings regarding nursing evidence- based practice (EBP). This lack of knowledge represents a gap in the literature and may impede the successful implementation of EBP in healthcare settings. Hence, the current study was conducted to identify nurses' knowledge, attitudes, and practices regarding evidence-based practice.

Study Objectives and Research Questions

The aim of the study is to identify the knowledge, attitudes, and practices of nurses regarding evidence-based practice, and the relationship between the subscales. Therefore, the research questions as follows:

- What are the characteristics of nurses working in Madinah Cluster hospitals in Saudi Arabia?
- What is the level of nurses' knowledge, attitudes, and practices regarding EBP in Medina Health Cluster hospitals?
- Are there any significant differences in nurses' knowledge, practices, and attitudes related to EBP based on their characteristics?
- Is there a relationship between EBPQ subscales?

METHODOLOGY

Research Design

The study design was a descriptive cross-sectional design using an online reliable and valid self-administered questionnaire. The selected design aids to describe the current situation with evidence-based nursing practice in Medina Health Cluster.

Settings

The current study was conducted in several hospitals in Medina Health Cluster in Medina, Saudi Arabia. Registered nurses from several Medina Health Cluster hospitals participated in the current study.

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Sample

The minimum sample size is 385, and that was determined based on 50% of subjects having a factor of interest, 0.95 level of confidence, and 0.05 margin of error (Dhand, & Khatkar, 2014; Alzyoud et al., 2024; Mohammad et al., 2022; Rahamneh et al., 2023). Furthermore, convenience sampling technique was used in this study to recruit nursing staff from the hospitals in the medina health cluster who met the inclusion and exclusion criteria as follows:

Inclusion criteria:

- Must be a registered nurse.
- Nurses who provide direct care to the patients in the hospital units.
- Must provide informed consent to participate in the study.

Exclusion criteria:

- Nurses intern and who in the orientation program.
- Nurses who declined to give consent and who are not available during study period.

Instruments

Evidence-Based Practice Questionnaire (EBPQ) was used in this study. EBPQ was developed by (Upton & P.M. Upton, 2005). It is designed to gather information and opinions on the use of evidence-based practice among 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. The EBPQ has 24 items, divided into three subscales: attitudes, knowledge/skills, and EBP practice. Every item was scored from one to seven on a Likert-type scale, with a higher score indicating a more positive answer (i.e., a more positive attitude or greater use and knowledge of EBP). In the current study, the internal reliability for the questionnaire was tested using Cronbach's alpha and had an excellent level (0.96). Also, excellent levels were for knowledge/ skills subscale (0.97) and practice subscale (0.93). An acceptable internal reliability (0.77) for the attitude subscale.

Data Collection

The researchers contacted the hospitals in Medina Health Cluster to obtain approval for the data collection. An official letter from the health cluster to the hospitals was obtained. After receiving the approval, the researchers contacted target hospitals for data collection. In addition, the researchers met with the nursing directors of each hospital to seek their cooperation regarding data collection. Next, a link for online survey was sent to all hospitals in Medina Health Cluster.

Ethical Considerations

Approval was obtained from Institutional Review Board (IRB) of Medina Health Cluster. An explanation of the study was provided to all nurses in electronic form. In addition, the first question is the consent of approval which explain their right to the study and if someone refuses to participate, there will be no penalty or loss of benefits. Moreover, as part of the study, the participants will be kept confidential despite that the survey is not asking for a name or any identity. Therefore, identity will never be revealed. The self-administered survey of EBP nurses was used after a written approval consent from the source.

Data Analysis

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Data was entered using Statistical Package for Sciences (SPSS) version 27. A descriptive statistic was used to illustrate the nurses' characteristics (number and percentages), and the mean scores and standard deviations of score of knowledge, attitude, and practice of EBP of the nurses. In addition, inferential statistics were used for further explanation of the study variables. A normality test will be used to assess statistical assumptions of normality. Inferential statistics like correlation independent t test, and ANOVA were utilized to find links between variables and make conclusions about the research. The statistical analysis results were then presented to answer the research questions and provide valuable conclusions. The alpha level was set at 0.05 and 0.01 and the results were displayed in tables.

RESULTS

Table 1: Demographic Characteristics of the Studied Nurses (n=264)

Nurses Characteristics	Frequency	Percent
Gender		
Female	241	91.3%
Male	23	8.7%
Age		
20 - 30	59	22.3%
31 - 40	154	58.3%
Above 40	51	19.3%
Nationality		
Saudi	72	27.3%
Non-Saudi	192	72.7%
Qualification		
Nursing Diploma	44	16.7%
BSN	196	74.2%
Graduate Studies	24	9.1%
Work experience		
Less than 5 years	50	18.9%
5 - 10 years	86	32.6%
More than 10 years	127	48.1%

Table 1 describes the frequency and the percentage of demographic characteristics for studied nurses in Medina Health Cluster hospitals. Female nurses making up the majority (91.3%) while male nurses making up only 8.7%. Above half of the nurses (58.3%) were between the ages of 31 and 40. Around three-quarters of nurses were non-Saudi with 72.73% and held a BSN with 74.2%. Regarding years of experience, around half of the nurses (48.1%) had work experience for more than 10 years whereas those who had less than 5 years constitute the lowest group of nurses with 18.9%.

Table 2: Mean Scores and Standard Deviations of EBPQ Subscales(n=264)

Items	Mean ± SD
Knowledge/skills	**5.30 ± 1.081**

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Research skills	5.06 ± 1.252
IT skills	5.09 ± 1.265
Monitoring and reviewing of practice skills	5.52 ± 1.196
Converting your information needs into a research question	5.02 ± 1.290
Awareness of major information types and sources	5.16 ± 1.301
Ability to identify gaps in your professional practice	5.36 ± 1.344
Knowledge of how to retrieve evidence	5.20 ± 1.285
Ability to analyse critically evidence against set standards	5.17 ± 1.342
Ability to determine how valid (close to the truth) the material is	5.16 ± 1.336
Ability to determine how useful (clinically applicable) the material is	5.20 ± 1.292
Ability to apply information to individual cases	5.30 ± 1.275
Sharing of ideas and information with colleagues	5.78 ± 1.248
Dissemination of new ideas about care to colleagues	5.60 ± 1.257
Ability to review your own practice	5.66 ± 1.266
Attitude	**4.92 ± 1.276**
New evidence is so important that I make the time in my work schedule	4.94 ± 1.541
I welcome questions on my practice	5.09 ± 1.522
Evidence based practice is fundamental to professional practice	4.64 ± 2.025
My practice has changed because of evidence I have found	5.02 ± 1.466
Practice	**5.05 ± 1.155**
Formulated a clearly answerable question as the beginning of the process towards filling this gap	4.98 ± 1.309
Tracked down the relevant evidence once you have formulated the question	4.91 ± 1.287
Critically appraised, against set criteria, any literature you have discovered	4.75 ± 1.355
Integrated the evidence you have found with your expertise	5.02 ± 1.325
Evaluated the outcomes of your practice	5.25 ± 1.347
Shared this information with colleagues	5.39 ± 1.399

Descriptive data allow for an evaluation of nurses' levels of evidence-based practice knowledge/skills, attitude, and practice in hospitals within Medina Health Cluster in Saudi Arabia. As shown in Table 2, knowledge/skills subscale had the highest mean score (5.30 ± 1.08) followed by the practice subscale (5.05 ±1.15) and then the attitude subscale (4.92 ± 1.27). On the knowledge/skills subscale, the mean scores were varied from (5.78 ± 1.24) to (5.02 ± 1.29), the highest score was for sharing of ideas and information with colleagues while converting

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information needs into a research question had the lowest score. For practice subscale, the highest mean score (5.39 ± 1.39) was for shared information with colleagues whereas the lowest mean score (4.75 ± 1.35) was about critically appraised, against set criteria. The highest mean score for attitude subscale items was for welcome questions on their practice (5.09 ± 1.52) while considering evidence-based practice as fundamental to professional practice had the lowest score (4.64 ± 2.02). The differences between nurses' demographic characteristics and EBPQ Subscales were indicated in Table 3. There were no significant differences between gender, nationality, age, and educational level with EBPQ subscales. Knowledge/skill subscale had only significant differences with years of experience (F= 5.697, p-value = 0.004). Nurses with work experience from 5 to 10 years and those with more than 10 years had the highest mean score (5.48 ± 1.01(0.98 ± 5.35) ,(

respectively more than those with less than 5 years of experience.(1.29 ± 4.86)

Pearson correlation test was performed to examine the correlation between EBPQ subscales. The results revealed that there was a significant strong positive relationship between knowledge/skill subscale and practice subscale (r = 0.809, p-value < 0.001). There were significant moderate positive relationships between knowledge/skill subscale and attitude subscale (r = 0.531, p-value < 0.001), and practice subscale and attitude subscale (r = 0.624, p-value < 0.001).

Table 3: Independent t-tests and one-way ANOVA for the differences between Nurses' Demographic Characteristics and EBPQ Subscale

		Knowledge/skills			Practice			Attitude		
Nurses Characteristic	**Categories**	**Mean ± SD**	**t/F value**	**p-value**	**Mean ± SD**	**t/F value**	**p-value**	**Mean ± SD**	**t/F value**	**p-value**
Gender [a]	Male	5.02 ± 1.385	-1.302-	0.194	4.88 ± 1.30	-.717-	0.474	4.82 ± 1.425	-0.425-	0.672
	Female	5.33 ± 1.047			5.07 ± 1.142			4.93 ± 1.264		
Nationality [a]	Saudi	5.09 ± 1.285	-1.706-	0.091	4.86 ± 1.335	-1.438-	0.153	4.95 ± 1.376	0.192	0.848
	Non - Saudi	5.38 ± 0.986			5.12 ± 1.076			4.91 ± 1.240		
Age [b]	20 - 30	5.09 ± 1.227	2.136	0.120	4.97 ± 1.241	0.302	0.740	4.77 ± 1.388	0.948	0.389
	31 - 40	5.32 ± 1.050			5.05 ± 1.124			4.92 ± 1.229		
	Above 40	5.51 ± 0.962			5.14 ± 1.162			5.10 ± 1.279		
Educational level [b]	Nursing Diploma	5.29 ± 1.308	0.157	0.855	5.03 ± 1.358	0.016	0.984	4.96 ± 1.375	0.225	0.799
	BSN	5.29 ± 1.049			5.05 ± 1.123			4.90 ± 1.247		
	Graduate Studies	5.42 ± 0.899			5.08 ± 1.058			5.07 ± 1.368		
Work Experiences [b]	Less than 5 years	4.86 ± 1.294	5.697	0.004*	4.85 ± 1.261	2.242	0.108	4.80 ± 1.266	0.356	0.701
	5 -10 years	5.48 ± 1.019			5.24 ± 1.034			4.94 ± 1.299		
	More than 10	5.35 ±			4.98 ±			4.97 ±		

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	years	0.981			1.170			1.257		

a Independent t-test. ***b*** One-way ANOVA test.

* Statistically significant differences at the p≤0.05 level.

Table 4: Pearson Correlation Matrix for EBPQ Subscales

Variable	Knowledge/Skills	Practice	Attitude
Knowledge/Skills	1		
Practice	0.809**	1	
Attitude	0.531**	0.624**	1

** Correlation is significant at the p-value < 0.001

DISCUSSION

To improve the quality and efficiency of patient care, nurses are increasingly being asked to incorporate current evidence into practice (Atakro et al., 2020; Zou et al., 2016; Al-Azzam et al., 2023; Al-Shormana et al., 2022; Al-E'wesat et al., 2024). Thus, this study aimed to determine the level of knowledge, attitudes, and implementation of evidence- based practice among nurses. The results of the study revealed that the nurses held positive views about evidence-based practice (EBP). This finding is consistent with most previous studies that have described the nurses' knowledge, attitudes, and proficiency in adopting EBP. (Ammouri et al., 2014; Atakro et al., 2020; Kaseka & Mbakaya, 2022; Zou et al., 2016). Nevertheless, a study conducted by Alkhatib et al in 2021 found that a significant proportion of nurses held a negative attitude toward evidence-based practice (EBP). Additionally, another study highlighted that most nurses had insufficient knowledge and more than two-thirds of them exhibited a negative attitude and poor practice in relation to EBP (Maskey et al., 2019). Pérez-Campos et al.,2014 reported that the nurses had a moderate level of EBP.

Surprisingly, knowledge/skills subscale in the current study obtained the highest score, followed by the practice subscale and then the attitude subscale. These findings were solely consistent with a prior study conducted in Medina, Saudi Arabia (Abu Hasheesh & AbuRuz, 2017). In contrast, most studies reported that nurses' attitudes had the highest score followed by knowledge and then practice (AbuRuz, et al., 2017; Al-Busaidi et al., 2020; Alqahtani et al., 2019; Ammouri et al., 2014; Kaseka & Mbakaya, 2022; Zou et al., 2016).

Medina Hospitals face several challenges in implementing Evidence-Based Practice including the infrastructure that does not support EBP, and limited research resources available. Additionally, nurses are experiencing high workloads and a shortage of staff. This environment could impact their perception of the importance of EBP in their practice and their

willingness to dedicate time to EBP within their work schedules. Various studies support this point of view that highlighted the organizations limited communication and dissemination of EBP, workload, and lack of time as barriers to EBP (Alqahtani et al., 2019; Brown et al., 2009; Crable, et al., 2020; Teixeira et al., 2020). It is crucial for nursing leaders in hospitals to possess a thorough comprehension of the EBP process. Moreover, they should demonstrate the capability to effectively explain its significance, and implementation (Kaseka & Mbakaya, 2022; Warren et al., 2016). In order to implement evidence-based practice and align with Magnet principles, it is essential for each hospital to have transformational nurse leaders. Those leaders communicate the vision of EBP implementation and actively embrace Magnet principles (Warren et al., 2016). They also have a vital role in engaging staff members at all levels, fostering a culture of EBP, and allocating resources to establish the infrastructure needed to support clinical decision-making based on the best available evidence (Kaseka & Mbakaya, 2022; Newhouse, 2006).

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Concerning the demographic characteristics and level of EBP, nurses in this study who have been working for more than 5 years have a higher level of knowledge and skills in evidence-based practice (EBP) compared to those with less than 5 years of experience. This finding aligns with previous research that also observed a positive correlation between years of work experience and EBP knowledge. (Al-Busaidi et al., 2020; Kaseka & Mbakaya, 2022; Zou et al., 2016). This could be explained that higher experience for nurses leads them to exposure to conflicting situations encountered in the profession which pushes them to recognize the best knowledge sources such as scientific valid research, clinical evidence, and clinical guidelines to help them in their clinical decision. Meanwhile, other studies reported that no statistically significant difference was found between nurses' work experience and their Knowledge of EBP (Alkhatib et al.,2021; Ammouri et al., 2014; Pérez-Campos et al.,2014).

The present study displayed that there were no significant differences between gender, age, and educational level with each subscale of EBP. Similarly, several studies were not found any relation between nurses' gender and EBP (Al-Busaidi, et al., 2020; Ammouri et al., 2014; Kaseka & Mbakaya, 2022; Pérez-Campos et al., 2014). One national study was consistent with our findings regarding nurses' age, nationality, and qualification with EBP levels (Alqahtani et al., 2019). On the other hand, a study found that the mean scores for attitudes toward evidence- based practice were higher among senior nurses when compared to junior nurses (Al-Busaidi, et al., 2020). Several studies displayed that a higher academic level was directly related to a greater Knowledge and implementation of EBP (Kaseka & Mbakaya, 2022; Malik et al., 2015; Pérez-Campos et al., 2014). In this study, it appears that vast majority of respondents have completed a bachelor's degree or higher, while only 16.7% had a diploma degree. This finding may help interpret the absence of significant differences in evidence-based practice levels based on qualifications.

Regarding the correlation between EBPQ subscales, this study found that there is a strong positive correlation between the knowledge/skill subscale and practice subscale. Furthermore, it was found moderate positive relationships between the knowledge/skill subscale and attitude subscale, as well as the practice subscale and attitude subscale. This implies that nurses who have a better understanding and proficiency in evidence-based practice also tend to have more positive attitudes toward it. These findings align with previous research which has shown that nurses' knowledge, skills, and attitudes play a crucial role in their adoption and implementation of evidence-based practice (Alqahtani et al., 2019; Kaseka & Mbakaya, 2022; Salem, Alamrani, & Albloushi, 2009; Teixeira et al., 2020).

Conclusion and Relevance to Clinical Practice

In this study, the nurses had positive views regarding EBP. Specifically, the knowledge/skills subscale had the highest score followed by the practice subscale and then the attitude subscale. The nurses with more than 5 years of experience show more knowledge/and skills than those with less than 5 years. There was a significant positive relationship between EBP subscales.

The hospitals in Medina need to improve their infrastructure in order to support evidence- based practice (EBP) and research. This study was conducted as building blocks by the New Knowledge and Innovation Council to establish an EBP training and education program within Medina Health Cluster. The aim of this initiative will enhance nurses' understanding of the significance of EBP, as well as their ability to convert information needs into research questions, develop research skills, and critically evaluate evidence according to specific criteria. Finally, further investigation is needed to identify the barriers that nurses in Medina Health Cluster face in implementing EBP.

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