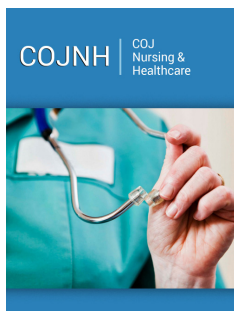


Integrating Evidence-Based Practice in the Clinical Decision-Making of Nurses: Cross-Sectional Design

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ISSN: 2577-2007



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Submission:  May 06, 2024

Published:  August 29, 2024

Volume 9 - Issue 1

How to cite this article: Ma Ana Flor C Pascua*, Arianne Katrina Coballes, Mary Anna Mendoza, Tyrone L Bitanga, et al. Integrating Evidence-Based Practice in the Clinical Decision-Making of Nurses: Cross-Sectional Design. COJ Nurse Healthcare. 9(1). COJNH. 000705. 2024. DOI: [10.31031/COJNH.2024.09.000705](https://doi.org/10.31031/COJNH.2024.09.000705)

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Abstract

The researchers' objective was to describe the crucial role of nurses in utilizing evidence-based practice to make decisions about the quality of patient care delivery in a tertiary care academic medical center in Riyadh, Saudi Arabia, through a cross-sectional online survey. The study population consisted of 570 nurses, with a mean duration of 7.9 years. The findings of this study underscore the importance of nurses in the current state of EBP in Saudi nursing and identify areas for improvement. The results showed that nurses working across the three entities of tertiary care academic medical center in Riyadh, Saudi Arabia, viewed EBP favorably. However, their knowledge of where to search for and critique EBP was lacking, indicating a potential area for significant improvement. Although they were aware of ongoing EBP initiatives, there is a clear need for further development of their capacity to retrieve and critically appraise evidence, which could significantly enhance their ability to advocate for EBP. The nurses' responses also indicated that they were not fully practicing EBP due to significant challenges, such as a lack of time and institutional support. These challenges are authentic and valid, and it is crucial to acknowledge them. However, if these barriers are addressed, they could potentially lead to a more widespread and effective implementation of EBP, significantly improving the quality of patient care in Saudi Arabia. Implications for practice include conducting a baseline unit-specific assessment to determine readiness for EBP, implementing robust educational programs (such as workshops, seminars, and online courses) with the highest priority for access to evidence and evidence appraisal, and considering changing nurses' work schedules to provide adequate time for further training in EBP and critically reviewing the literature. Recommendations include promoting EBP through educational initiatives and policy changes, providing resources to nurses and medical professionals, and continuing their education and training throughout their careers.

Keywords: Evidence-based practice; Cross-sectional survey; Nursing practice; Patient care delivery

Introduction

Nurses in Saudi Arabia are on the brink of making significant contributions to global healthcare equity in the coming decade. They have the potential to drive substantial progress by taking on expanded roles, working in new settings innovatively, and partnering with communities and other sectors. In the current healthcare landscape, there is a growing emphasis on decision-making based on scientific knowledge and integrating Evidence-Based Practices (EBP) into the care process, all aimed at improving the quality of healthcare services. This transition is particularly significant for Saudi nurses, who are not only moving from traditional care methods to more evidence-based models but also actively influencing the direction of healthcare around the globe [1]. In the United States, the American Nurses Credentialing Center, a branch of the American Nurses Association, has been instrumental in setting nursing standards. Their Magnet® Recognition Program, designed to recognize healthcare organizations that provide high-quality nursing care and enhance the nursing profession's standards and reputation, underscores the significance of EBP and nursing research in achieving Magnet status [2].

The Saudi health sector is undergoing significant reform to address the challenges posed by the growing population. The first theme of the National Transformation Program is “Transform health care,” which aims to create a comprehensive system with a new Ministry of Health (MOH) that focuses on public health, prevention, and health awareness. The plan includes expanding health facilities, improving geographical distribution, and expanding e-health services. The focus is on continuous improvement of health services, ensuring benefits for beneficiaries, and promoting prevention against health risks. The Saudi government also focuses on improving patient experience and satisfaction [3]. Thus, the challenge is that most nursing care services in Saudi Arabia are comfortable with the conventional care method, which needs to be more evidence-based to improve the quality of nursing care to ensure patient experience and satisfaction. The researchers’ objective was to describe the nurses’ perspectives and experiences of utilizing evidence-based practice to make decisions about the quality of patient care delivery in a tertiary care academic medical center in Riyadh, Saudi Arabia.

Methods

For this study, a cross-sectional observational study was employed to describe the characteristics of staff nurses in the three multi-facility areas. The aim was to determine the nurses’ use of EBP in their decision-making impacting patient care from August to September 2021.

Population and sampling

Nurses working in the three hospitals (King Khalid University Hospital, King Abdulaziz University Hospital, and Dental University Hospital) of King Saud University Medical City (KSUMC) were the study population. At the time of data collection, there were 320 nurses in KAUH, 1869 nurses in KKHU, and 72 nurses in DUH. The calculated sample was 329 with a 95% confidence level and a 5% margin of error using Raosoft online sample size calculator. This ensured that a representative sample including diverse demographic groups can counteract biases related to population characteristics. Convenience sampling was used in all clinical settings. Excluded from the study participants are those performing non-nursing functions (e.g., administrative staff) and nonregistered staff (e.g., student nurses, nursing interns, etc.). This exclusion was based on the focus of the study on practicing nurses and their experiences with EBP. The final sample size used for the data analysis was 924.

Data collection instrument

The data for this study was meticulously collected using an online questionnaire. The questionnaire was thoughtfully divided into three sections. The first section was the consent form, which indicated the staff’s willingness to participate in the study-the second section, demographic data, comprised eight items. The third section, the Nursing EBP Survey 2019, is a validated tool with 15 questions and five supplementary questions on pursuing advanced degrees and barriers and facilitators to evidence-based practice in their nursing care environment. The survey assessed the nurses’

perspectives and experiences of utilizing evidence-based practice in their decision-making processes.

The Nursing Evidence-Based Practice Survey 2019 (Nursing EBP 2019) was first developed by the Department of Nursing Services and Patient Care at the University of Iowa Hospitals and Clinics. It has five factors for analysis: Practice Climate, Access to Evidence, Evidence Appraisal, Data Collection, and Implementation. The 15 items in the questionnaire were rated on a five-point Likert-type scale, with a higher score representing a more positive response. This scale was chosen to provide a nuanced understanding of the respondents’ attitudes and experiences (e.g., one equals Strongly Disagree and five equals Strongly Agree). Through a psychometric evaluation by Kaiser Permanente, Southern California, Regional Nursing Research, and EBP programs, the Nursing EBP Survey 2019 showed a reliable Cronbach’s alpha of .79-92 on the five identified factors.

Ethical considerations and data collection

The authors were granted permission for this study from the King Saud University- Institutional Review Board (IRB Approval of Research Project No. E-22-6718). Informed consent was obtained from the study participants before answering the questionnaire. The voluntary nature of the participants’ involvement was emphasized. The study was conducted following the principles of the Declaration of Helsinki, ensuring the highest ethical standards were maintained throughout.

Data analysis

Before analysis, the data was checked for missing values and outliers. Cases with extreme values (beyond three standard deviations from the mean) were assessed and either retained or excluded based on their validity. The nurses’ demographic characteristics were summarized using descriptive statistics, including frequencies, percentages, means, and standard deviations, to provide an overview of the sample characteristics. All data were analyzed using IBM SPSS Statistics version 28. A sensitivity analysis was conducted to test the robustness of the findings. This involved re-running the analysis after removing extreme values and recalculating statistics.

Results

The total population of nurses across the three hospitals during the data collection period was 2261, with a sample size of 329, and the response rate was 41% (n=924). Fourteen questionnaires were excluded from the data analysis with significant missing answers, extreme values, or duplicate responses (Figure 1). The mean age of the participants was 37 years (SD=8.3). The majority were females (n=814; 88%). In terms of educational level attained, 67% (n=623) of the nurses were bachelor’s or baccalaureate degree holders, 28% (n=255) were diploma holders, and 5% (n=47) held higher academic degrees (master’s degree or doctorate level). The mean duration of the length of stay of the participants was 7.9 years (SD=5.5). More than half of the respondents were Filipino (n=568, 62%) clinical staff nurses (n=763, 83%) (Table 1).

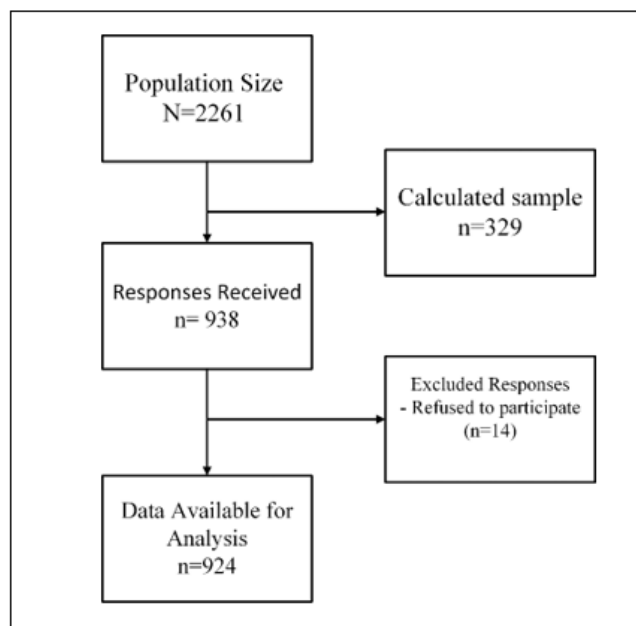


Figure 1: Participant Flow Diagram.

Table 1: Characteristics of Participants.

		Count	Column N %
Age	23-35 years old	460	49.80%
	36-45 years old	297	32.10%
	46-55 years old	146	15.80%
	56 years and above	21	2.30%
Gender	Male	107	11.60%
	Female	814	88.10%
	I prefer not to say	3	0.30%
Nationality	Filipino	568	61.50%
	Indian	277	30.00%
	Jordanian	13	1.40%
	Pakistani	12	1.30%
	Saudi	43	4.70%
	Others	11	1.20%
Job Title	Clinical Resource Nurse	30	3.20%
	Dental Assistant	34	3.70%
	Dental Nurse	21	2.30%
	Head Nurse	41	4.40%
	Health Care Assistant	9	1.00%
	Nurse Educator	14	1.50%
	Quality Nurse	3	0.30%
	Specialty Manager	9	1.00%
Staff Nurse	763	82.60%	
Highest Educational Attainment	Diploma	250	27.10%
	Associate degree	5	0.50%
	Bachelor's degree	623	67.40%
	Master	44	4.80%
	PhD/DNP	2	0.20%

Length of Stay in KSUMC	Less than one year	78	8.40%
	1-2 years	108	11.70%
	3-5 years	160	17.30%
	6-10 years	324	35.10%
	11-15 years	156	16.90%
	16-20 years	74	8.00%
	21 years and above	24	2.60%

EBP survey factors

Each item on the Nursing Evidence-Based survey is scored from 1 to 5 (1=Strongly Disagree, 5=Strongly Agree), and the average score was calculated for each subscale or factor (Practice Environment, Access to Evidence, Evidence Appraisal, Data Collection & Implementation) (Table 2). A higher score indicates

a more positive attitude towards initiating and implementing EBP. The 'Practice Climate' factor, which showed the highest mean score (M=4.13, SD=.74), is significant as it reflects the overall environment and culture of the workplace regarding EBP. Practice Climate score was derived from questions 1, 4, 5, 9, and 10, where 288 participants (31%) responded Strongly Agree, and 487 (52%) responded Agree.

Table 2: Descriptive Statistics for EBP Survey.

		N	%	Mean±SD
Practice Climate	Strongly Disagree	6	0.60%	4.13±.73
	Disagree	11	1.20%	
	Neutral	132	14.30%	
	Agree	487	52.70%	
	Disagree	288	31.20%	
Access to Evidence	Strongly Disagree	31	3.40%	3.57±.87
	Disagree	88	9.50%	
	Neutral	215	23.30%	
	Agree	428	46.30%	
	Disagree	162	17.50%	
Evidence Appraisal	Strongly Disagree	17	1.80%	3.60±.84
	Disagree	48	5.20%	
	Neutral	338	36.60%	
	Agree	403	43.60%	
	Disagree	118	12.80%	
Data Collection	Strongly Disagree	25	2.70%	3.72±.93
	Disagree	46	5.00%	
	Neutral	277	30.00%	
	Agree	393	42.50%	
	Disagree	183	19.80%	
Implementation	Strongly Disagree	2	0.20%	3.97±.73
	Disagree	31	3.40%	
	Neutral	141	15.30%	
	Agree	473	51.20%	
	Disagree	277	30.00%	

Questions 2 and 3 resulted in an Access to Evidence score (M=3.57, SD=0.87). The highest responses from participants were Agree (n=428, 46%) and Neutral (n=215, 23%). Questions 6, 7, and 8 described the respondents' skill in Evidence Appraisal (M=3.60, SD=0.84). Questions 13, 14, and 15 described the respondents' participation in Data Collection (M=3.72, SD=0.93). Like Access to Evidence, the participants also mainly responded with Agree and

Neutral for Evidence Appraisal (n=403, 44%; n=338, 37%) and Data Collection (n=393, 43%; n=277, 30%). Lastly, the Implementation score (M=3.97, SD=0.73) was derived from questions 11 and 12. The participants mostly responded with Agree (n=471, 51%) and Strongly Agreed (n=277, 30%).

Additional questions were included. They examined the respondents' inclination to pursue an advanced degree and their

awareness of EBP projects in their practice environment. Twenty-two percent were actively pursuing advanced degrees, while 52% said they were planning to. The high percentage of staff (83%) who

responded positively to question 18 indicates that the participants are aware of ongoing EBP projects in the organization (Table 3).

Table 3: Optional questions.

		Yes	No
16. I am planning to pursue an advanced degree.	Row N %	52%	48%
	Count	478	446
17. I am actively pursuing an advanced degree (i.e., currently in graduate school).	Row N %	22%	78%
	Count	199	725
18. I am aware of evidence-based practice projects implemented in my organization.	Row N %	83%	17%
	Count	770	154

Note: It is adapted from the Nursing Evidence-Based Practice Survey by ©Kaiser Permanente, Southern California, Regional Nursing Research and EBP Programs, 2019.

Discussion

This study aimed to understand nurses' decision-making regarding their level of orientation in utilizing evidence-based practice to deliver safe patient care. The results strongly imply that the practice climate or environment appreciates the significance of Evidence-Based Practice, and having human, material resources, and institutional support would be helpful in effectively obtaining research articles to support the nurses' decision-making in the prevention, treatment, and management of illness. This process also aids in preserving physical and mental well-being through services provided by the nurses at the KSUMC institution. These findings support previous studies indicating a significant association between EBP subscales and EBP among nurses [4].

Access to evidence

Despite the positive attitude towards evidence-based practice and a good knowledge of EBP, the study reveals a significant challenge. There is uncertainty about the convenience of access to nursing journals or research findings and evidence-based clinical guidelines to guide their practice in decision-making. This underscores the need for improved access to or use of available research, patients' preferences, and clinical expertise in decision-making processes, which are crucial for patient safety and quality of care [5].

Evidence Appraisal

Findings show that as nurses gain more experience, their knowledge and skills in EBP increase. Presumably, experienced nurses participate in more training courses offered by their organization, allowing them to enhance their understanding of EBP [6]. Nevertheless, nurses require a more transparent comprehension of EBP, including strengths, weaknesses, judgment, and synthesis, as indicated by the relatively high percentage of those who agree they can understand research reports.

Implementation

The results of this study support the promotion of competencies required for implementing evidence-based nursing, such as

increasing knowledge and discussion regarding scientific research and implementing research findings into clinical practice. They also support the previous suggestion that journal clubs facilitate collaboration and promote discussion and shared learning between participants [7]. It is worth noting that the study found no relation between the use of EBP and participants' age. This finding is reassuring, indicating that age does not hinder EBP engagement.

This study emphasizes the importance of the practice environment in promoting Evidence-Based Practice (EBP) among nurses at KSUMC, highlighting the necessity of supportive resources and institutional backing for effective decision-making. While nurses exhibit positive attitudes and solid foundational knowledge of EBP, accessing relevant research and clinical guidelines remains challenging, potentially affecting patient safety and care quality. Experienced nurses show more excellent EBP competencies from increased training, yet a deeper understanding of EBP appraisal is still needed. The findings recommend initiatives like journal clubs to enhance knowledge sharing and collaboration, improving research implementation in practice. Furthermore, there was no significant correlation between EBP use and participants' age, indicating that age does not affect EBP engagement.

Implication for Practice

Nurse views on using research in practice

Findings from one aspect of a study that explored nurses' views on using research in practice suggest that nurses generally value research. However, this does not necessarily mean that they base individual decisions on research findings or that research is considered the most critical evidence in direct practice. The resources that enable nurses to find, appraise, and make decisions about using research are not always readily available in practice settings. It can be concluded that for research utilization to increase, time, resources, role models, and environments that support and emphasize other critical forms of nursing knowledge, such as patient views and experiences and professional expertise in promoting evidence-based practice, are essential (Pitsillidou M et al., 2021).

Length of stay and five factors

Findings showed that the nurses stayed longer in the institution and became more experienced in utilizing evidence-based practice in their decision-making for delivering safe and quality patient care. The same applies to nurses' poor utilization of EBP [8].

Educational attainment to the evidence appraisal

A study found a connection between participants' educational attainment and their ability to understand available research evidence or results.

Barriers identified

Nurses are not averse to applying research findings to their clinical practice; however, the study found various barriers to achieving competency in applying EBP in decision-making to deliver patient care. Generally, barriers include a lack of time and the need to provide more education surrounding research use. Aynalem et al. [8] suggested that teaching and research expectations should focus on applying research to practice. Reviewing and critiquing research should help to make decisions about its practical applications rather than for academic use.

Limitations

One limitation of this research is its reliance on cross-sectional data, which provides a snapshot of the population at a single point in time. This design prevents the establishment of causal relationships and limits the ability to observe changes over time. Additionally, self-reported data may introduce response bias, as participants might provide inaccurate or socially desirable answers. Finally, external factors influencing the outcomes may not have been accounted for, potentially confounding results. Several factors influence the generalizability of this study's results. First, the research was conducted at a single institution, KSUMC, which may limit the applicability of the findings to other healthcare settings with different cultures, resource levels, or patient demographics. Moreover, while the study highlights the importance of institutional support and training in enhancing EBP competencies, results may vary in environments that lack such resources.

Conclusion

Nurses gain new knowledge and perspectives on their work and utilize it to develop their clinical practice. Nursing managers can provide support, facilities, and a persuading environment to focus nurses on evidence-based practice. Nursing Authorities are responsible for preparing nurses to adopt EBP from the early stages. Strategies to increase nurses' competence in using EBP for informed healthcare decisions. More studies should be conducted in various clinical settings to gather nationwide data on EBP utilization for safe and quality patient care. EBP training courses could be initiated, followed by randomized clinical trials to assess their effectiveness in changing the attitudes, knowledge, and practice of nurses who attend them. A regular journal club could be initiated and integrated into the workplace's professional development time. Continuing education for nursing educators on EBP is essential for enhancing their EBP skills and competencies in teaching EBP. Nurse

educators must be proficient in formulating answerable questions, locating and evaluating various research studies, and synthesizing gathered data to base decisions on reliable knowledge.

EBP is crucial for improving knowledge and skills in academic and clinical settings. Healthcare professionals with master's programs perceive higher skill levels, but organizational factors are essential. Barriers and facilitators of critical appraisal of research articles remain unclear. Nurses perceive research education as essential but sometimes express negative feelings [9]. Nursing journal clubs are helpful for clinical practice, improvement of the quality of care, and professional development [10]. Thus, through the journal club program, nurses can become more knowledgeable and skillful in critically appraising research articles and applying the best evidence to clinical practice [11-13]. Future studies should include a larger, more diverse sample from multiple institutions and geographical locations to enhance generalizability. This would provide a more comprehensive understanding of EBP implementation and confirm whether the observed trends apply broadly across nursing.

Other Information

The present study received no external funding. This independence allowed the researchers to maintain complete autonomy over the study design, data collection, and analysis, ensuring that the findings and interpretations were solely driven by the research objectives and ethical considerations rather than external influences.

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