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KNOWLEDGE AND PERCEPTION REGARDING EVIDENCE-BASED PRACTICE AMONG UNDERGRADUATE NURSING STUDENTS

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Abstract

Background: *Evidence-Based Practice (EBP) is an essential component of contemporary nursing practice that promotes the integration of the best available research evidence, clinical expertise, and patient preferences in clinical decision-making. Undergraduate nursing students require adequate knowledge and positive perceptions of EBP to develop evidence-based clinical competencies.*

Objective: *To assess the knowledge and perception regarding Evidence-Based Practice among undergraduate Bachelor of Science in Nursing (BSN) students.*

Methods: *A descriptive cross-sectional study was conducted among 321 undergraduate BSN students at a university. Participants were recruited using a convenience sampling technique. Data were collected through a structured, self-administered questionnaire adapted from a previously published study. The questionnaire consisted of three sections covering demographic and academic characteristics, knowledge regarding EBP, and students' perceptions of EBP. Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the findings.*

Results: *Among the 321 participants, the largest age group was 21 years (30%). Female students constituted 55% of the sample, while male students represented 45%. Regarding academic year, 38% of participants were in the third year, 32% in the second year, and 30% in the fourth year. Assessment of EBP knowledge revealed that 145 (45%) students demonstrated good knowledge, 112 (35%) had moderate knowledge, and 64 (20%) had poor knowledge. Similarly, 145 (45%) students demonstrated good perception, 112 (35%) had moderate perception, and 64 (20%) had poor perception regarding EBP. The mean score for both knowledge and perception were 2.25 on the three-point classification scale.* ***Conclusion:*** *The study findings indicate that*

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the largest proportion of undergraduate nursing students demonstrated good knowledge and positive perceptions regarding EBP. However, moderate and poor levels among a considerable proportion of participants highlight the need for strengthening EBP education through structured academic courses, research-based learning, and practical clinical training. Integrating EBP more effectively into undergraduate nursing education may improve students' preparedness to incorporate research evidence into clinical nursing practice.

INTRODUCTION

Evidence-Based Practice (EBP) is an essential component of modern nursing that promotes safe, effective, and high-quality patient care. It involves the integration of the best available research evidence, clinical expertise, and patients' preferences and values to guide clinical decision-making. EBP enables nurses to make informed decisions, improve patient outcomes, reduce unnecessary interventions, and maintain professional standards of healthcare (1,2) Undergraduate nursing students represent the future nursing workforce; therefore, developing adequate knowledge and a positive perception of EBP during their academic education is crucial. Knowledge of EBP includes understanding research methods, formulating clinical questions, searching scientific literature, critically appraising research findings, and applying relevant evidence to clinical practice. In addition, students' perceptions influence their willingness to adopt research-based approaches and incorporate scientific evidence into patient care (3,4). Previous studies have identified variations in nursing students' knowledge, attitudes, and competencies regarding EBP. A study conducted among Tunisian nursing students reported that students demonstrated more positive attitudes toward EBP than knowledge and practical skills, highlighting the need for improved research methodology and statistical education (4). Similarly, a cross-sectional study involving 470 undergraduate nursing students in Thailand found that attitudes toward EBP were relatively higher than their ability to retrieve and review research evidence (5). A systematic review and meta-analysis involving 4,557 nursing students further demonstrated that students generally had positive attitudes toward EBP but lacked sufficient practical knowledge and skills (6). Furthermore, educational interventions have demonstrated the potential to improve students' EBP competencies, critical thinking, and problem-solving abilities. Structured EBP education and appropriate academic support can strengthen students' capacity to understand and apply scientific evidence in clinical settings (7). However, barriers such as limited access to research databases, inadequate research skills, insufficient faculty guidance, and difficulties in critically appraising scientific literature may negatively influence students' understanding and perception of EBP (8,9). In Pakistan, limited research has examined undergraduate nursing students' knowledge and attitudes toward EBP. A cross-sectional study conducted in Khyber Pakhtunkhwa highlighted the importance of assessing students' knowledge, attitudes, and practices regarding EBP (10). Therefore, assessing knowledge and perception regarding evidence-based practice among undergraduate nursing students is important to identify existing knowledge gaps, understand students' perceptions, and determine areas requiring educational improvement. The findings may assist nursing educators and academic institutions in strengthening nursing curricula, promoting research engagement, and developing evidence-based competencies among future nursing professionals.

Methodology

A descriptive cross-sectional study design was employed to assess knowledge and perception regarding Evidence-Based Practice (EBP) among undergraduate nursing students. The study was conducted at a university, where data were

collected from a total of 321 undergraduate nursing students. A convenience sampling technique was used to recruit participants who were available during the data collection period and voluntarily agreed to participate. Students from different academic semesters were included to obtain a broader understanding of their knowledge and perceptions regarding EBP. Data were collected using a structured, self-administered questionnaire adapted from a previously published study related to evidence-based practice. The questionnaire was modified according to the study objectives and the educational context of undergraduate nursing students. It consisted of three sections. The first section collected demographic and academic information, including age, gender, and academic semester. The second section assessed knowledge regarding EBP through questions related to its definition, components, importance, and application in nursing practice. Sample questions included: "What is Evidence-Based Practice?", "What are the main components of EBP?", "What is the primary purpose of EBP in nursing?", and "Which source provides reliable evidence for clinical decision-making?" The third section assessed students' perceptions regarding EBP, including its usefulness, importance, and application in clinical settings. Sample statements included: "Evidence-based practice improves the quality of patient care," "Research evidence should be incorporated into clinical decisions," and "EBP contributes to improved patient safety." Responses to perception-related statements were recorded using a five-point Likert scale ranging from strongly disagree to strongly agree. Ethical approval was obtained from the relevant institutional ethical review committee before the commencement of data collection. Permission was also obtained from the concerned university authorities. The purpose of the study was explained to all participants, and informed consent was obtained before questionnaire administration. Participation was voluntary, and confidentiality and anonymity were maintained throughout the research process. The collected data were reviewed for completeness, coded, and entered into the Statistical Package for the Social Sciences (SPSS), version 26, for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participants' demographic characteristics, knowledge levels, and perceptions regarding EBP. The findings were presented in tables and interpreted according to the study objectives.

Results

A total of 321 Bachelor of Science in Nursing (BSN) students participated in this study. The demographic characteristics of the participants included age, gender, and academic year. The age of the participants ranged from 20 years to 24 years and above. The largest group of participants was 21 years old, representing 30% of the total sample, followed by participants aged 20 years, 23 years, and 24 years or above, each comprising 20% of the participants. The smallest group consisted of students aged 22 years, representing only 10% of the total participants. The mean age of the participants was 21.91 years, the median age was 22 years, and the mode was 21 years, indicating that most of the students belonged to the younger age group. Regarding gender distribution, female students were in the majority. Out of 321 participants, 177 (55%) were female, while 144 (45%) were male. This shows that female nursing students participated more than male nursing students in the study. In terms of academic year, 3rd-year BSN students formed the largest group, with 122 (38%) participants. The second largest group was 2nd-year students, comprising 103 (32%) participants, while 4th-year students represented 96 (30%) of the participants. Overall, the demographic data show that the study sample included students from different academic years, with slightly higher representation of 3rd-year students.

Table 1: Demographic Characteristics of BSN Students (N = 321)

Variable	Category	Frequency (f)	Percentage (%)
Age (years)	20	64	20%
	21	96	30%
	22	32	10%
	23	64	20%
	24 and above	65	20%
Gender	Male	144	45%
	Female	177	55%
Academic year	2nd year	103	32%
	3rd year	122	38%
	4th year	96	30%
Total		**321**	**100%**

Mean age = 21.91 years; Median age = 22 years; Mode = 21 years.

Knowledge of BSN Students

The knowledge of BSN students was assessed and categorized into three levels: poor, moderate, and good. The findings revealed that 145 (45%) students had good knowledge, which was the highest percentage among all categories. In addition, 112 (35%) students showed moderate knowledge, while 64 (20%) students had poor knowledge. These results indicate that nearly half of the BSN students possessed an adequate or good level of knowledge regarding the topic under study. When the knowledge levels were assigned scores, where poor knowledge was scored as 1, moderate knowledge as 2, and good knowledge as 3, the mean knowledge score was found to be 2.25. The median knowledge score was 2.00, and the mode was 3, which represents good knowledge. This shows that good knowledge was the most frequently observed category among the participants.

Table 2: Knowledge Level of BSN Students (N = 321)

Knowledge level	Frequency (f)	Percentage (%)
Poor	64	20%
Moderate	112	35%
Good	145	45%
Total	**321**	**100%**

Mean = 2.25; Median = 2.00; Mode = 3 (Good).

Perception of BSN Students

The perception of BSN students was also assessed and divided into poor, moderate, and good categories. The results showed that 145 (45%) students had a good perception, 112 (35%) had a moderate perception, and 64 (20%) had a poor perception. Similar to the knowledge results, the highest percentage of students demonstrated a good perception, which reflects a positive attitude among the majority of the participants.

When perception levels were scored as poor = 1, moderate = 2, and good = 3, the mean perception score was 2.25. The median perception score was 2.00, while the mode was 3, indicating good perception. Therefore, the findings suggest that most BSN students had a favorable perception regarding the subject of the study.

Table 3: Perception of BSN Students (N = 321)

Perception level	Frequency (f)	Percentage (%)
Poor	64	20%
Moderate	112	35%
Good	145	45%
Total	**321**	**100%**

Mean = 2.25; Median = 2.00; Mode = 3 (Good).

Summary of Findings

The results of this study demonstrate that the majority of BSN students were young adults, with the highest percentage belonging to the age group of 21 years. Female students were more frequently represented than male students, and 3rd-year students formed the largest academic group. The overall findings indicate that 145 (45%) BSN students had good knowledge and 145 (45%) had good perception, while 112 (35%) demonstrated moderate knowledge and perception. Only 64 (20%) of the students had poor knowledge and poor perception.

Overall, the study concludes that most BSN students possessed a good level of knowledge and a positive perception. However, a considerable proportion of students still had moderate or poor knowledge and perception, which highlights the need for further educational sessions, awareness programs, and training to improve their understanding and attitudes.

DISCUSSION

The present study assessed knowledge and perception regarding Evidence-Based Practice (EBP) among 321 undergraduate BSN students. The findings revealed that 45% of participants had good knowledge and 45% demonstrated good perception regarding EBP. However, 35% showed moderate levels and 20% demonstrated poor levels in both domains. These findings suggest that although many students recognize the importance of EBP, further educational efforts are needed to strengthen their understanding and application of evidence-based nursing principles. The demographic findings showed that most participants were 21 years old (30%), and female students represented 55% of the sample. Third-year students constituted the largest academic group (38%). Similar demographic patterns were reported by Alruwaili et al. (2025), who examined EBP knowledge and attitudes among nursing students and found differences in perceived knowledge according to students' demographic characteristics [13]. Likewise, Abu Ejheisheh et al. (2025) reported that academic progression was significantly associated with EBP competency, with fourth-year students demonstrating higher competency than students in earlier academic years (14). Regarding EBP knowledge, the present study found that 45% of students demonstrated good knowledge, while 35% had moderate knowledge and 20% had poor knowledge. These findings indicate that a considerable proportion of students possessed an adequate understanding of EBP. Similarly, Rahman et al. (2024), in a study conducted among undergraduate nursing students in Khyber Pakhtunkhwa, Pakistan, investigated

students' knowledge, attitudes, and practices regarding EBP and highlighted the importance of strengthening evidence-based nursing education (11). In contrast, Abu Ejheisheh et al. (2025) reported moderate overall EBP competency among Palestinian nursing students, with knowledge accounting for 58% of the assessed competency (14). Furthermore, Li et al. (2024), in a systematic review and meta-analysis, identified gaps in practical EBP knowledge and skills among nursing students and nurses, despite generally positive attitudes toward EBP (15). Concerning students' perceptions, the findings revealed that 45% demonstrated good perception, 35% moderate perception, and 20% poor perception regarding EBP. These results suggest that the largest proportion of students recognized the importance of incorporating research evidence into nursing practice. Comparable findings were reported by Nantsupawat et al. (2023), who found generally favorable attitudes toward EBP among undergraduate nursing students (12). Similarly, Alruwaili et al. (2025) reported positive attitudes toward EBP among nursing students, supporting the importance of developing favorable perceptions during undergraduate nursing education (13). Li et al. (2024) also concluded that nursing students and nurses generally demonstrate positive attitudes toward EBP, although their practical knowledge and skills require further improvement (15). Despite these positive findings, the presence of moderate and poor knowledge and perception highlights the need for additional educational support. Hanh et al. (2024), in a study involving 395 undergraduate nursing students in Vietnam, identified several barriers to EBP implementation, particularly in research utilization and clinical practice (16). Similarly, Abo Elmagd et al. (2024) reported improvements in students' beliefs and implementation of EBP following completion of an evidence-based practice course, emphasizing the value of structured educational opportunities (17). Furthermore, Cardoso et al. (2021), in a cluster randomized controlled trial, demonstrated the effectiveness of an EBP educational program in improving undergraduate nursing students' knowledge and skills [18]. Abo Elmagd and Alharbi (2024) also reported favorable beliefs and willingness to implement EBP among nursing students, highlighting the importance of integrating EBP courses into undergraduate nursing curricula (19). In addition, a systematic review and meta-analysis by Kim and colleagues (2024) demonstrated the effectiveness of EBP educational programs in improving competency among undergraduate nursing students (20). Overall, the findings of the present study indicate that most BSN students demonstrated good knowledge and positive perceptions regarding Evidence-Based Practice. Nevertheless, the proportion of students with moderate and poor levels suggests that nursing institutions should strengthen EBP education through structured teaching, research-based assignments, critical appraisal activities, clinical case discussions, and practical workshops. These strategies may help students develop the knowledge and confidence required to incorporate current research evidence into clinical decision-making and improve the quality and safety of patient care.

CONCLUSION

The present study concluded that undergraduate BSN students demonstrated generally favorable knowledge and perceptions regarding Evidence-Based Practice (EBP). Among the 321 participants, 45% demonstrated good knowledge and 45% showed good perception regarding EBP. However, 35% of students demonstrated moderate levels and 20% demonstrated poor levels in both domains. These findings indicate that although a considerable proportion of students have a good understanding and favorable perception of EBP, knowledge and perception gaps remain among undergraduate nursing students. The findings emphasize the importance of strengthening EBP education within undergraduate nursing curricula. Nursing institutions should focus on structured EBP courses, research-based learning activities, critical appraisal skills, clinical discussions, and practical training to improve students' ability to identify, evaluate, and apply reliable research evidence in clinical decision-

making. Strengthening these educational strategies may contribute to the development of competent nursing professionals who can provide safe, effective, and evidence-based patient care.

LIMITATIONS OF THE STUDY

The present study had certain limitations that should be considered when interpreting its findings. First, the study was conducted at a single university; therefore, the findings may not be generalizable to all undergraduate nursing students in other universities or healthcare institutions. Second, a convenience sampling technique was used, which may have introduced selection bias because participants were recruited based on their availability and willingness to participate. Third, data were collected through a self-administered questionnaire, which may have been affected by participants' understanding of the questions and the possibility of socially desirable responses. Furthermore, the cross-sectional study design assessed knowledge and perceptions at a single point in time; therefore, it could not establish causal relationships or evaluate changes in students' knowledge and perceptions over time. Finally, the study focused on students' reported knowledge and perceptions rather than directly observing their ability to apply EBP principles in clinical practice. Future studies involving multiple universities, larger and more diverse populations, and longitudinal or interventional designs are recommended to obtain a more comprehensive understanding of EBP among undergraduate nursing students.

RECOMMENDATIONS

It is recommended that Evidence-Based Practice (EBP) should be strengthened in the nursing curriculum through workshops, seminars, and practical clinical training. Students should be encouraged to develop research and critical appraisal skills and apply reliable evidence in patient care. Universities should provide access to research resources and promote activities such as journal clubs and research projects. These efforts may improve students' EBP knowledge, confidence, and clinical decision-making skills, ultimately enhancing patient care and safety.

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