

# Self-assessment of Undergraduate Nursing Students about Their Knowledge, Behavior, and Attitude in Relation to Evidence Based Practice

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**Abstract** Background: Evidence-based practice (EBP) is used worldwide to improve the quality of patient care to provide cost-effective care. EBP is a mandate for nursing practice combining individual clinical judgment with available expertise to generate a positive outcome for the patient. Objective: The study aimed to describe the self-assessment of undergraduate nursing students about Knowledge, behavior, and attitude in relation to Evidence Based Practice. A Cross-sectional study design. Convenience sampling technique was used to include all consenting nursing students from fifth level to eighth level (3rd and 4th year) (n=255) student. The research was carried out at the Faculty of Nursing, Princess Nourah Bint Abdulrahman University. A self-administered questionnaire. The EBP was done by adopting EBP questionnaire that has been created by Upton et.al (2006) & Ruzafa-Martinez et.al (2017): The results indicated that our respondents generally viewed EBP positively and their attitudes towards EBP tended to be more positive than their knowledge and behaviors about EBP. Exactly 76.6% of respondents in our study had a positive attitude toward EBP. Finally, our study showed statistically significant correlations between practice, knowledge and attitudes related to evidence-based practice. Many studies have established that the three segments of knowledge, attitude, and behavior are inseparably interlinked and strength each other in EBP. Conclusion of our research showed that factor of training in EBP has an effect on nursing students' knowledge, attitudes and behaviors about EBP. To the possible extent, training will help to increase positive beliefs and attitudes regarding EBP. Further investigation regarding the effect of gender difference in EBP is needed.

**Keywords:** evidence-based practice, nurses, attitudes, knowledge

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## 1. Introduction

Evidence-based nursing (EBN) is an efficient solution for facilitating clinical decision-making in patient care and can contribute to improved quality of nursing practice [1]. The healthcare community has acknowledged evidence-based practice as the gold standard for secure and sympathetic healthcare provision [2]. EBP improve patient outcomes, EBP mentors are needed to provide continuing education to enhance nurses/EBP knowledge and skills [3]. Emphasis on the use of EBP has an impact on nursing education in readying nursing staff to be qualified to interpret scientific findings towards clinical settings [4]. Simultaneous multiple regression analyzes stated that clinical preparedness and trust in clinical decision-making were statistically important predictor factors for the use of EBP and future use of EBP. In both the current and the future, clinically well-prepared nursing learners with high confidence in clinical decision-making are most likely to use evidence-based practice [2]. Health systems want to set up measures

that not only strengthen the knowledge of EBP for nurses, simply besides enhance their conviction in the advantage of knowledge-based care. EBP lecturers may be essential to accelerating a faster transition to evidentiary nursing practice. There is an urgent need for theoretically driven randomized controlled trials to test the efficacy of measures to progress [5]. EBP is a fresh paradigm in nursing; latest developments Clinical work and study methods, as well as new learning techniques, have made it attainable and desirable for nursing practice to implement evidence-based decision-making. [6]. While many EBPs were created in the healthcare sector, there were big gaps in understanding about how to move EBPs into the healthcare sector gradually [7]. Suggest that an approach based on evidence could be used as a supplementary strategy to nursing education. Not only was it as efficient as the usual technique, it also resulted to the student acquiring specific abilities [8]. EBP contributes to improved efficient and effective care and patient results. It is the duty of nursing educators to teach future nurses and to encourage patient results [9]. EBP can also decrease increasing healthcare expenses, helping to define clinical

issues by changing professional roles with updated present information. It incorporates fresh proof in clinical practice to decrease medication errors, to enforce best patient care understanding for appropriate clinical decision-making and patient results [4]. However, many nurses indicated that fewer health care administrators' assistance would hinder their access to evidence based education programs [10]. American Association of Colleges of Nursing's (AACN) mentioned that master's degree programs must prepare nurses to be skilled in implementing and managing changes in practice by applying present studies to enhance care delivery and health results [11]. Therefore, ranges of strategies are used to teach EBP and research methods to improve the capacity of nursing learners for effectively translate present best practices and results [12].

A number of studies have done to examine nurses' perceptions of their knowledge, practice, and attitudes towards EBP, The Taiwan program, which had a beneficial effect, increased expertise and abilities in evidence-based practice and increased the spreading of evidence-based practice in regional hospitals. [13]. At the same year, the same researchers found that there are significant differences between doctors and nurses in their perception of attitudes, knowledge, behavior, and barriers to evidence-based practical terms [14]. While in Jordan the female nurses do less research, have less different attitudes and less research awareness compared to male nurses [15].

In a study done in India revealed that, participants maintain favorable attitudes towards EBP but did not have adequate abilities and expertise to implement it [16]. The primary obstacles to the implementation of the EBP are the lack of time to read scientific research papers and the price of access to them [16].

The most frequently mentioned obstacles to EBP were lack of statistical ability to comprehend, Statement of results, insufficient time, and loss of library funds [17,18,19,20]. Yet, to develop a full picture of EBP among undergraduate nursing students, this study is to describe the self- assessment of undergraduate nursing students about Knowledge, behavior, and attitude in relation to Evidence Based Practice.

### 1.1. Aim of the Study

The study aimed to describe the self- assessment of undergraduate nursing students about Knowledge, behavior, and attitude in relation to Evidence Based Practice.

### 1.2. Research Questions

1. What is the student subjective knowledge assessment about EBP?
2. What is the subjective behavior assessment of student in relation to EBP?
3. What is the attitude of students in relation to EBP?

## 2. Methods

### 2.1. Research Design

Cross-sectional study design was used to assess Knowledge, behavior, and attitude on Evidence Based Practice among undergraduate nursing students.

### 2.2. Setting

The research was carried out at the Faculty of Nursing, Princess Nourah Bint Abdulrahman University. Riyadh, Saudi Arabia.

## 3. Subjects and Sampling

The study was include all consenting nursing students from fifth level to eighth level (3rd and 4th year) (n=255) student. The nursing students who were registered during this academic year from fifth level to eighth level (3rd and 4th year) in the second half of the academic year 2016-2017.

### 3.1. Tools of Data Collection

**Part 1:** This part assesses the students' demographic Characteristics.

**Part 2:** The information needed to answer the research questions was be gathered through a standard questionnaire that was assess the level of knowledge, behavior, and attitude on Evidence Based Practice (EBP) [21,22].

### 3.2. Methods

#### 1. Ethical consideration:

Research team was apply for the institutional review board (IRB) approval from the research unit in Princess Nourah Bint Abdulrahman University. Consent forms was obtained from all the students prior to the data collection phase. Confidentiality and anonymity was maintained during the study. The data will be secured in a safe place and will not be shared with any person except with the researcher. The students will be informed that their participation is voluntary and they have the right to stop participation during anytime throughout the study.

#### 2. Tools development:

Following the review of domestic and foreign literature, this study was a guide for the development of one instrument; the first part was a questionnaire on demographic features. The second part about Evidence-Based Practice Profile was adopted from Upton et.al (2006) & Ruzafa-Martinez et.al (2017) [21,22]. It is open access and for public use as long as the source will be properly cited. The questionnaire can be answered using a 5-point Likert scale. Negative items were reversely scored (ITEM 23, 24).

#### 3. Validity and reliability of tools

This questionnaire included 52 items, which distributed on four axes that examined knowledge, barrier, behavior, and attitude on Evidence Based Practice among Princess Norah Bint Abdulrahman University nursing students. The reliability estimates of the questionnaire were calculated using Cronbach alpha. Reliability coefficient of all questionnaire was 0.824 (Table 1), Showing a suitable index of the coefficient of reliability.

### 3.3. Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 17.0 (SPSS Inc.,

Chicago, IL, USA). Mean and standard deviations were used in the description of main variables. Independent sample t-test was applied to verify if there statistical significant variations between nursing students in connection by their knowledge, barriers, behaviors and attitude toward EBP according to variable of undertake any training in EBP. In addition, the relationships between main variables related to the EBP were analyzed by Spearman rank correlation. The cutoff for level of statistical significance was set at  $P < 0.05$ .

**Table 1. Reliability for the questionnaire (N= 255)**

Axes	Number of items	Values of Cronbach alpha coefficient
Knowledge about EBP	24	0.810
Barriers of knowledge about EBP	9	0.799
Attitude toward EBP	10	0.814
Behavior toward EBP	9	0.875
<b>Total</b>	<b>52</b>	<b>0.824</b>

## 4. Results

**Table 2** showed that the ages of nursing students ranged between 19 and 33 years with a mean of 23.06 years [standard deviation (SD) 2.48]. Of the 255 nursing students invited to participate, 167 (65.5%) had Attending formal training on EBP, while 88 (34.5%) of them hadn't. In addition, the data in (**Table 2**) showed that 82 (49.1%) of nursing students who had Attending formal training on EBP at (EBP course as part of University education (Bachelor) >20 hrs.), 58 (34.7%) of them attend (Single lecture 1- 3 hrs.), 17 (10.2%) at (Short course 10 – 20 hours), and 10 (5.9%) of them at (Weekend course 3 – 10 hrs).

**Table 3** shows that the general mean score for nursing students' knowledge perceptions of EBP was  $3.57 \pm 1.11$ . The general mean proportion of nursing student perceptions of knowledge toward EBP was 71.4%. In addition, the highest mean scores of knowledge toward EBP were found in relation to "I want to discover some new data" ( $3.95 \pm 1.09$ ), "Know what the mean of evidence-based practice (EBP)" ( $3.92 \pm 0.983$ ), and "Keen on studying or developing the techniques needed to integrate EBP into my job" ( $3.87 \pm 0.974$ ) respectively.

**Table 4** shows that the Shows that the general mean

score for nursing students' perceptions of the barriers of knowledge about EBP was  $3.66 \pm 1.06$ . Shows that the general mean score for nursing students' perceptions of barriers of knowledge about EBP was 73.2%. The greatest mean scores of barriers of knowledge about EBP were found in relation to "Collective assistance among my peers is one of the biggest facilitators in my use of EBP in clinical practice" ( $3.83 \pm 0.988$ ). Workplace experience is the most accurate way of understanding how and why that works" ( $3.83 \pm 1.10$ ), and "The price of data infrastructure limits the use of EBP in my Specialty" ( $3.75 \pm 1.07$ ). The lowest mean scores were  $3.44 \pm 1.16$  and  $3.45 \pm 1.15$  for "EBP does not bear in mind the desires of my clients" and "The search for appropriate evidence from research is not very practical throughout the actual environment" respectively.

**Table 5:** Shows that the general mean score for nursing students' attitudes toward EBP was  $3.83 \pm 1.03$ . The overall mean score percentage of the nursing students' attitudes toward EBP was 76.6%. Moreover, the greatest mean scores of attitudes toward EBP were found in relation to "Administrators support is the strongest facilitators in my use of EBP in clinical practice" ( $3.95 \pm 1.01$ ), "EBP is raising the level of my job" ( $3.91 \pm 1.05$ ), and "I want to improve the use of evidence in my daily routine." ( $3.87 \pm 1.05$ ). The lowest mean scores were  $3.70 \pm 1.03$  and  $3.73 \pm 1.07$  for "The available resources seem to me to be sufficient to implement the EBP" and "I plan to create understanding on the EBP."

**Table 6:** Shows that the general mean score for nursing student's sources of knowledge about EBP was  $3.73 \pm 1.07$ . The general mean score for nursing student's sources of knowledge about EBP was 74.6%. The ranking of behavior toward EBP showed that the five most frequently used behaviors were: 1) Incorporated evidence with your experience (77.6%), 2) Expressed a simply question that describes the client or topic, the action and the results of concern. (76.8%), 3) Consider the preferences of your patients when deciding clinical/professional choices (75.8%), 4) Critically evaluated any literature that you have found to decide the methodological value (75.4%), 5) Started searching for an electronic database (75%) (**Table 6**). Formally communicated and mentioned the results of research with others in the dept. (e.g. publication and lecture) and unofficially communicated and mentioned the literature/research findings to others at the workplace. (71.8%) and (72.8%) respectively.

**Table 2. Demographics of the respondents (n=255) of Evidence-Based Practice Questionnaire**

Characteristics	Sub- characteristics	Frequencies	%
Age	Mean =(23.06) , SD =(2.48)*, Min= (19), Max.= (33)		
Attending formal training on EBP	YES	167	65.5%
	NO	88	34.5%
Total		255	100%
Training duration	EBP course as part of University education (Bachelor) >20 hrs.	82	49.1%
	Short course 10 – 20 hrs.	17	10.2%
	Weekend course 3 – 10 hrs.	10	5.9%
	Single lecture 1- 3 hrs.	58	34.7%
Total		167	100%

\* SD= Standard Deviation.

**Table 3. Nursing students' self-knowledge assessment about EBP**

N	ITEMS	Mean	SD	Rank
1	Know what the mean of evidence-based practice (EBP)	3.92	.983	2
2	realize what is EBP in my career	3.82	1.04	4
3	Desire to read important literature to update information	3.78	1.03	5
4	Keen on studying or developing the techniques needed to integrate EBP into my job	3.87	.974	3
5	Research Develop Skills	3.74	1.04	6
6	Computing abilities	3.73	1.10	7
7	Ability to recognize gaps in knowledge	3.61	1.13	20
8	Ability to transform the required data to obviously answerable questions	3.70	1.11	9
9	Awareness of main kinds and sources of data	3.65	1.10	16
10	Ability to search for an online database	3.64	1.12	17
11	Skill to obtain evidence (to gain documents or records)	3.64	1.07	18
12	Ability to critically analyze proof against established norms, i.e. quality scores	3.66	1.10	14
13	Ability to apply data in specific cases	3.69	1.06	10
14	Ability to decide how valid the material is (near to the reality)	3.61	1.06	19
15	Ability to determine the material is clinically applicable	3.67	1.12	13
16	want to discover some new data	3.95	1.09	1
17	Critically judging new views	3.70	1.13	8
18	Have good leadership abilities	3.65	1.18	15
19	Overcome difficulties using a plan	3.68	1.20	11
20	Appreciate a research	3.35	1.32	21
21	Leaders are continuously looking for chances to know	3.68	1.13	12
22	Find time to research reading	3.33	1.27	22
23	Inadequate time to use EBP in my professional career	2.17	1.13	24
24	just had a small amount of EBP	2.67	1.24	23
<b>Overall mean score</b>		<b>3.57</b>	<b>1.11</b>	
<b>Mean score percentage</b>		<b>71.4%</b>		

**Table 4. Nursing student' barriers of knowledge about EBP**

N	ITEMS	Mean	SD	Rank
1	EBP Does not keep in mind the constraints of my daily duties	3.70	1.01	4
2	There is not much point in doing EBP because there is a lack of powerful evidence to back up most of the job I do.	3.63	1.04	7
3	EBP does not bear in mind the desires of my clients	3.44	1.16	9
4	The search for appropriate evidence from research is not very practical throughout the actual environment.	3.45	1.15	8
5	I prefer clinical / field practice to scholarly research.	3.70	1.07	5
6	Workplace experience is the most accurate way of understanding how and why that works.	3.83	1.10	2
7	The price of data infrastructure limits the use of EBP in my Specialty.	3.75	1.07	3
8	Easier access to databases dictates whether or not I am using EBP	3.69	1.04	6
9	Collective assistance among my peers is one of the biggest facilitators in my use of EBP in clinical practice.	3.83	.988	1
<b>Overall mean score</b>		<b>3.66</b>	<b>1.06</b>	
<b>Mean score percentage</b>		<b>73.2%</b>		

**Table 5. Nursing student' attitudes toward EBP**

N	ITEMS	Mean	SD	Rank
1	I am conscious of the recent innovations in the EBP of my job	3.87	.955	5
2	I plan to create understanding on the EBP	3.73	1.07	9
3	Implementation of the EBP is essential for my job	3.80	1.10	8
4	I want to improve the use of evidence in my daily routine.	3.87	1.05	3
5	EBP is raising the level of my job	3.91	1.05	2
6	EBP enables me to make good decisions about patients in my job.	3.87	1.05	4
7	Literature and scientific results are valuable in my daily job.	3.86	1.06	6
8	Administrators support is the strongest facilitators in my use of EBP in clinical practice.	3.95	1.01	1
9	Too wonderful to stay updated with all the fresh findings	3.83	1.01	7
10	The available resources seem to me to be sufficient to implement the EBP	3.70	1.03	10
<b>Overall mean score</b>		<b>3.83</b>	<b>1.03</b>	
<b>Mean score percentage</b>		<b>76.6%</b>		

Table 6. Nursing behavior toward EBP

N	ITEMS	Mean	%	SD	Rank
1	Expressed a simply question that describes the client or topic, the action and the results of concern.	3.84	76.8%	.994	2
2	Adopt up the proper evidence once you have posed the question	3.72	74.4%	.984	6
3	Started searching for an electronic database	3.75	75%	1.07	5
4	Critically evaluated any literature that you have found to decide the methodological value	3.77	75.4%	1.04	4
5	Incorporated evidence with your experience	3.88	77.6%	.993	1
6	Consider the preferences of your patients when deciding clinical/professional choices	3.79	75.8%	1.07	3
7	Know the published studies	3.65	73 %	1.10	7
8	Unofficially communicated and mentioned the literature/research findings to others at the workplace.	3.64	72.8%	1.15	8
9	Formally communicated and mentioned the results of research with others in the dept. (e.g. publication and lecture)	3.59	71.8%	1.26	9
Overall mean score		3.73	---		1.07
Mean score percentage		74.6%			

Table 7. Differences in knowledge, barriers, behaviors and attitude on Evidence Based Practice among Princess Norah Bint Abdulrahman University nursing students according to variable of undertake any training in EBP

	Training in EBP	N	Mean	SD	T	P-value
Knowledge about EBP	Yes	167	3.91	0.530	11.787	0.00**
	No	88	2.95	0.662		
Barriers of knowledge about EBP	Yes	167	2.97	0.717	12.393	0.00**
	No	88	4.04	0.612		
Attitude toward EBP	Yes	167	4.26	0.569	13.037	0.00**
	No	88	3.04	0.775		
Behavior toward EBP	Yes	167	4.17	0.655	13.154	0.00*
	No	88	2.93	0.745		

\* P < 0.05 (significant).

Table 8. Relationships between main variables of the study related to the EBP

Attitude toward EBP		Knowledge about EBP	Behavior toward EBP
	Correlation Coefficient	0.813**	0.883**
	P-value	0.00	0.000

\* P < 0.05 (significant).

Table 7 shows statistical significant differences were found between nursing students in relation to their knowledge about EBP according to variable of attending formal training on EBP (T=11.787, P .000), and favor to students who obtained any training in EBP. Furthermore, statistical significant differences were found between nursing students in relation to their barriers of knowledge about EBP according to variable of attending formal training on EBP (T=12.393, P .000), and favor to students who did not obtain any training in EBP. In addition, statistical significant differences were found among nursing students in relation to their attitude toward EBP according to variable of attending formal training on EBP (T=13.037, P .000), and favor to students who obtained any training in EBP. Finally, statistical significant differences were found among nursing students in relation to their behavior toward EBP according to variable of attending formal training on EBP (T=13.154, P .000), and favor to students who obtained any training in EBP.

Table 8 shows that the attitude toward EBP was correlated with the knowledge about EBP and the behavior toward EBP positively (Spearman's correlation coefficients were from 0.813 and 0.883 respectively), indicating that the better knowledge about EBP and the behavior toward EBP, the higher attitude toward EBP.

## 5. Discussion

This research was the first to be undertaken in a graduate nursing student in Saudi Arabia. The results of this study indicated that students generally viewed EBP positively and their attitudes towards EBP tended to be more positive than their knowledge and behaviors about EBP. Exactly 76.6% of respondents in this study had a positive attitude toward EBP, which is similar to the results of study that showed are consistent with prior research of a variety of occupational health organizations. [23,24,25,26]. The study's results believe that support from management is one of the greatest facilitators to their use of EBP in clinical/professional practice. Similar response were found in other studies [13,25]. The results showed that Princess Norah Bint Abdulrahman University nursing students' knowledge score in this study was considered high with percentages of 71.4%. It can be explained by the fact that 167 (65.5%) of responders had formally undertaken training in EBP.

Our findings also indicated a statistical significant difference among nursing students in relation to their knowledge, attitudes and behaviors about EBP according to variable of training in EBP, and favor to students who obtained a training in EBP. These are consistent with those of Chiu et al, 2010 [13] who stated that he program

of the National Health Research Institutes of Taiwan, which involves data, resource support and multi-faceted campaigns, has had a beneficial impact, improving understanding and abilities in evidence-based practice and accelerating the dissemination of evidence-based practice in regional hospitals. However, this study reported that knowledge about EBP are related to obtain a training in EBP, which is similar to our findings. Comparing the findings of these two studies indicates that nursing educational programs must contain more courses about EBP in Saudi universities.

Finally, this study showed statistically significant correlations were found between practice, knowledge and attitudes related to evidence-based practice. Many types of research have also verified that the three aspects of knowledge, attitudes, and behavior are integrally interlinked and complement each other in EBP [2,27]. At that time, it can be expected that more EBP training would not only increase students' knowledge of EBP, but would also change their attitudes towards EBP and the potential for its use in their present and future application.

## 6. Conclusion

The results of this research given proof that our respondents generally viewed EBP positively and their attitudes towards EBP tended to be more positive than their knowledge and behaviors about EBP. Our data also showed that factor of training in EBP has an effect on nursing students' knowledge, attitudes and behaviors about EBP. To the possible extent, training will help to increase positive beliefs and attitudes regarding EBP

## 7. Recommendations

Moreover, the study supported the argument that there is a high correlation between practice, knowledge and attitudes related to evidence-based. Further investigation regarding the effect of gender difference in EBP is needed. EBP courses must be planned and controlled by well-defined EBP skills and learning structures.

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