



(RESEARCH ARTICLE)



Effect of an Evidence-Based Practice (EBP) Educational Program on the Competence of Nursing Students

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Abstract

Evidence based practice (EBP) is a critical thinking approach used to educate persons by gathering evidences from well-designed researches and utilize this in clinical. Teaching nursing students with basic knowledge and skills regarding evidence-based practice will be a great achievement. The knowledge of the nurses is inadequate and their attitude is not favorable towards the utilization of EBP. This study aimed to assess the effect of an evidence-based practice educational program on the evidence-based practice competence (knowledge, attitude, skills) of nursing students. The quasi-experimental study was carried out at Saida Waheed FMH College of Nursing Lahore, Pakistan March 15, 2022, to December 10, 2022. A sample of 36 nursing students was taken via simple random sampling. The data was collected using the EBP Competence Questionnaire (EBP-COQ). Data was entered and analyzed by SPSS 25.0. The study results revealed that nursing student's knowledge was not adequate regarding Evidence-based Practice. Their attitude was good and their skills were not sufficient regarding EBP. According to the study's findings, nursing students can enhance their proficiency in EBP by participating in a learning intervention that combines theoretical and practical lessons on the EBP procedure with the inclusion of the critical incident technique during their clinical years. Although information is deficient regarding the best EBP education model or curriculum, the findings of this study may be helpful to other academic institutions.

Keywords: Evidence-based Practice; Skills; Knowledge; Attitude.

1. Introduction

Apparently, in a general view, nursing is a simple profession of caring for sick people but in reality, it carries great responsibilities with which are intellectual¹. A nurse can support the families through the emotional, physical, mental, and cultural challenges they encounter while they are ill or healthy. Nurses assist patients and their families in managing the disease and, if necessary, adjusting to it so they can continue to live better lives². Nurse educators are consistently trying to improve student's education by using advanced skills so that they would be able to deliver effective, efficient, and quality care to patients³. Evidence-based practice will help nursing students to make decisions in clinical practice. They will become confident in evaluating the quality of a scientific article. Hence, the practice evidence-based practice will enhance the role of the nurse. Furthermore, implementing evidence-based practice in professional nursing will increase collaboration with other professionals⁴. Student perceptions of research and their acceptance of its value for clinical judgment have often been adverse and insufficient. To give students the skills needed to use evidence-based practice in patient care, nursing educators should incorporate the principles of EBP into nursing education⁵. A study shows that the nursing students in Sweden had an overall positive attitude toward nursing research. Their interest in a particular development or research area was the most important variable in their attitudes and expectations for the use of nursing research⁶. This study sought to evaluate the impact of an educational program focused on evidence-based practice on the competence of nursing students in terms of knowledge, attitude, and skills related to evidence-based practice.

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1.1. Hypothesis

H_0 There was no effect of evidence-based practices educational program on evidence-based practice competence of nursing students.

H_1 There was an effect of evidence-based practices educational program on evidence-based practice competence of nursing students.

2. Materials & Methods

2.1. Study design

A quasi-experimental study design was used to perform this study at a tertiary care hospital in Lahore, Pakistan over 3 months.

2.2. Study population

Nursing students were our population of interest in this study.

2.3. Sampling method

A simple random sampling method was used to select the sample.

2.4. Sample size

The calculated sample size is less than 30. The sample size is small to perform the statistical test with good efficacy. So, thirty participants were taken. After adding a 20% dropout rate the sample size was 36.

The sample size was calculated by using the following formula:

$$n = \frac{(Z_{\beta} + Z_{\alpha/2})^2}{d^2}$$

Where

$$Z_{\beta} = 1.28$$

$$Z_{\alpha/2} = 1.96$$

2.5. Inclusion criteria

- Nursing students enrolled in 1st year of post-RN.
- Nursing students enrolled in 2nd year of post-RN.
- Nursing students who were willing to not attend any additional educational session related to the topic of research during this research period.

2.6. Exclusion criteria

- Nursing students enrolled in generic nursing.
- Clinical nurses were excluded from the study.
- Nursing staff on the management level were excluded from the study.

2.7. Ethical considerations

The rules and regulations set by the ethical committee of Frontier Institute of Medical Sciences were followed while conducting the research and the rights of the research participants were respected.

- Written informed consent was taken from all the participants.
- All information and data collection were kept confidential.
- Participants remained anonymous throughout the study.
- The subjects were informed that there were no disadvantages or risks to the study.

- They were also informed that they were free to withdraw at any time during the process of the study.

2.8. Data collection procedure

2.8.1. Pre Assessment

In the Assessment phase of the study, the researcher will assess the participant's evidence-based practice competence (attitude, skills, and knowledge) at baseline. After the fifteen weeks educational intervention evidence-based practice competence will be again measured using the Evidenced-Based Practice Competence Questionnaire (EBP-COQ).

2.8.2. Educational Plan

After completion of pre-assessment, Fifteen weeks of educational intervention will be given to participants. The educational intervention included different strategies like face-to-face, PowerPoint lectures, audio-visual demonstrations (AVD), theoretical classes, and practical classes with access to computers, peer group discussions in small groups, individual work, teamwork, and oral presentation of a final project.

2.8.3. Post Assessment

After intervention participants will be reassessed by the researcher using an Evidence-based practice Competence questionnaire (EBP-COQ) for the difference in Evidence-based practice competence.

2.9. Data Analysis

Data will be entered and analyzed in SPSS version 20. Quantitative variables will be presented using mean \pm SD. Histograms will be made. Qualitative variables will be presented using frequency and percentages. Data will be analyzed using SPSS 20. A paired sample t-test will be applied to compare practices. P value \leq 0.05 will be considered statistically significant.

3. Results

3.1. Socio-demographic profile of the participants

Table 1 shows the results of age of the participants, the minimum age of participants was 18 and the maximum was 25. The mean age of participants was 21.7 ± 2.21

Table 1 Age of the participants

Age Years)	Minimum	Maximum	Mean \pm SD
Age	18	25	21.7 ± 2.21

Table 2 and Figure 1, indicate that the majority of the participants were in 2nd year 20(55.6%), whereas 16(44.4) participants were in 1st year.

Table 2 Education status of the participants

Education Status (Post RN)	f	Percentage
1 st year	16	44.4
2 nd year	20	55.6
Total	36	100

3.2. Test for Normality of Data

The normality of data was checked through Shapiro Wilks test since the sample size was less than

The findings revealed that the data was normally distributed for knowledge, attitude, and skill towards EBP (p-value > 0.001) data was normally distributed (p-value 0.077). Therefore, a paired sample t-test was used to test the hypothesis I, and III respectively.

- Attitude toward EBP (Thirteen items)
- Skills in EBP (Six items)
- Knowledge in EBP (Six items)

3.2.1. Hypothesis Testing 1

H0: There is no improvement in the Attitude of nurses toward EBP after the educational program.

Overall pre-interventional mean attitude scores among participants regarding evidence based practice was 1.88±0.83. However, the post-interventional mean attitude scores were increased to 3.62±1.13. The findings showed that there was a significant difference between the pre and the post interventional attitude scores among participants regarding participants regarding evidence based practice as evident by (p value <0.001) (Table 3, Figure 2)

Table 3 Comparison of pre and post-intervention mean Attitude scores among nursestoward EBP after educational program after educational program.

Variable	Pre- InterventionMean +SD	Post- InterventionMean +SD	t-value	p
Attitude scores	1.88±0.83	3.62±1.13	-9.42	<0.001

P-value was obtained by paired sample t-test with <0.05 level of significance.

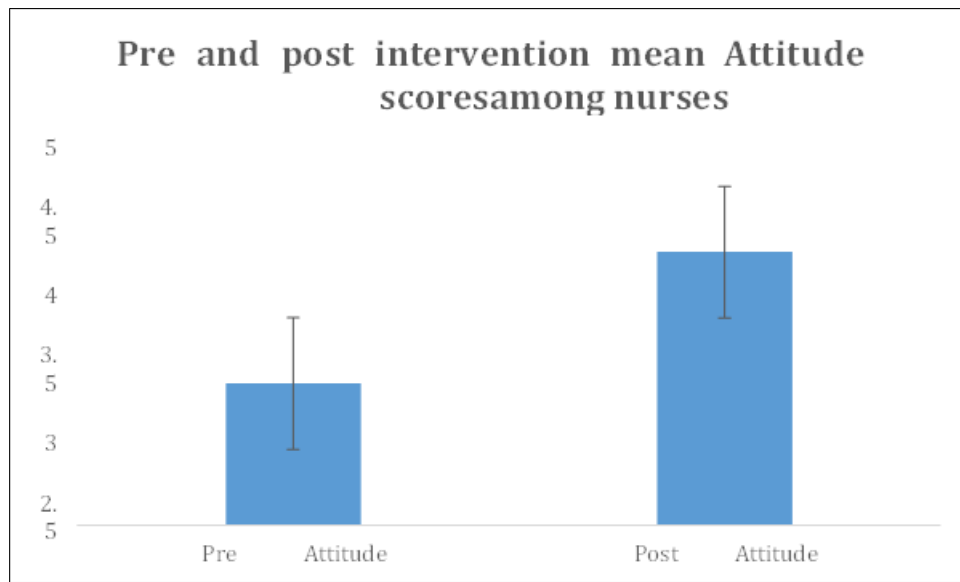


Figure 1 Pre and post-intervention mean attitude scores among nurses

3.2.2. Hypothesis Testing 2

HA: There is no improvement in the Skills of nurses toward EBP after the educational program.

The overall pre-interventional mean skill score regarding evidence-based practice among participants was 1.85±0.80. While the post-interventional mean skill score was 3.48±0.98. The findings revealed that there was a significant difference between pre and post-interventional skill scores as evidenced by (p-value <0.001). Moreover, there was a significant improvement in the skillscore of participants (Table 4, Figure 3).

Table 4 Comparison of pre and post-intervention mean skill scores among nurses toward EBP after educational program.

Variable	Pre-intervention Mean \pm SD	Post-intervention Mean \pm SD	t	p
Skills scores	1.85+0.80	3.48+0.98	-6.61	<0.001

P-value was obtained by paired sample t-test with <0.05 level of significance.

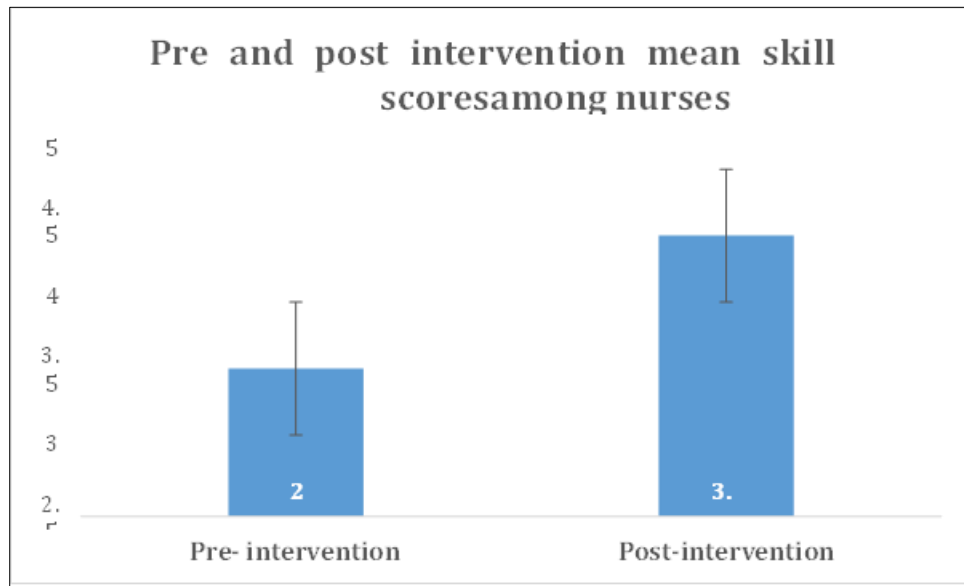


Figure 2 Pre and post-intervention mean skill scores among nurses

3.2.3. Hypothesis Testing 3

HA: There is no improvement in the Skills of nurses toward EBP after the educational program.

The overall pre-interventional mean score of knowledge regarding evidence-based practice among participants was 2.0 ± 0.84 . While the post-interventional mean score was 3.80 ± 1.07 . The findings revealed that there was a significant difference between pre and post-interventional knowledge scores as evidenced by (P-value <0.001). Moreover, there was a significant improvement in the practices of participants (Table 5).

Table 5 Comparison of pre and post-intervention mean knowledge scores among nurses toward EBP after the educational program

Variable	Pre-intervention Mean \pm SD	Post-intervention Mean \pm SD	t	p
Knowledge scores	2.0 ± 0.84	3.80 ± 1.07	-1.42	<0.001

P-value was obtained by paired sample t-test with <0.05 level of significance.

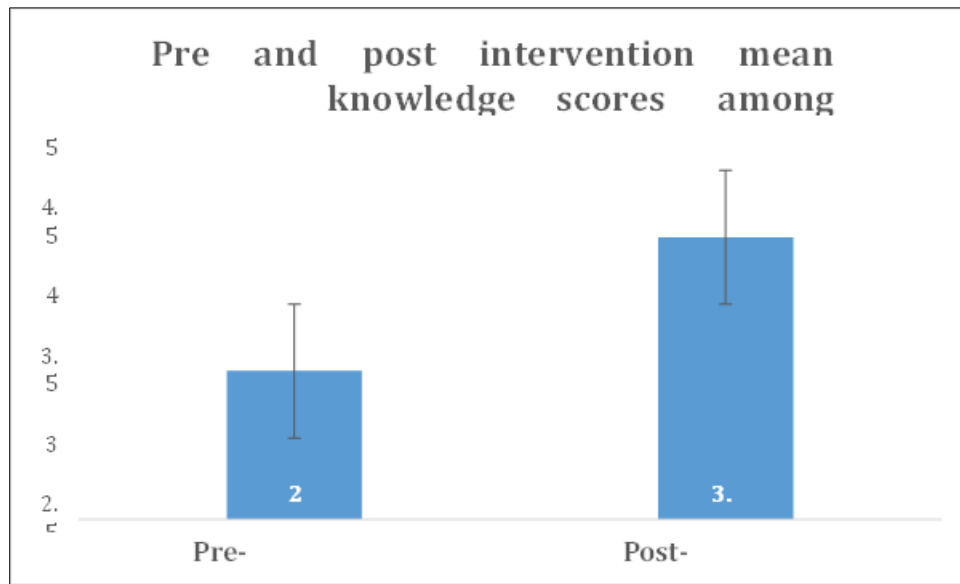


Figure 3 Pre and post-intervention mean knowledge scores among nurses

4. Discussion

Combining the most recent scientific findings with the practical knowledge that healthcare practitioners learn via education, training, and experience is known as evidence-based practice (EBP). This expertise allows them to interpret and apply the research evidence in the context of individual patients, taking into consideration factors like comorbidities, patient preferences, and available resources⁷.

Additionally, EBP recognizes the significance of patients' values and circumstances. It emphasizes the inclusion of patients in the decision-making process, considering their unique preferences, values, and situations. This patient-centered approach acknowledges that each patient may have different priorities and preferences that should be respected when making clinical decisions.

EBP seeks to improve the effectiveness and quality of healthcare by fusing the most up-to-date clinical knowledge, the values and circumstances of the patients, and the best available evidence. It seeks to improve patient outcomes and foster shared decision-making between healthcare professionals and patients, ultimately promoting a collaborative and patient-centered approach to care⁸.

The primary goal of this research was to assess how an educational program on evidence-based practice affected nursing students' evidence-based practice competency (knowledge, attitude, and skills). It was developed to provide continual chances for students to use evidence-based practice skills throughout clinical clerkships. It was founded on recommendations from the literature for the use of theoretical and practical lessons on the evidence-based practice process and the improvement of students' critical thinking through the use of the critical incident approach⁹.

The overall pre-interventional mean skill score regarding evidence-based practice among participants was 1.85 ± 0.80 . While the post-interventional mean skill score was 3.48 ± 0.98 . The findings revealed that there was a significant difference between pre and post-interventional skill scores as evidenced by (p -value < 0.001).

According to our findings, this educational intervention can help students become more competent in all areas of evidence-based practice, particularly in the Knowledge and Attitudes aspects.

These results were consistent with those of another study, which found that the intervention group's mean EBP-COQ scores for attitude (4.28 vs. 3.33), knowledge (3.92 vs. 2.82), and abilities (4.01 vs. 2.75), were significantly higher than baseline at two months after the EBP course. Additionally, a 15-week EBP educational intervention leads to positive changes in undergraduate nursing students' EBP competence, knowledge, abilities, and attitude. This EBP training may be beneficial for nurse educators¹⁰.

These findings were in accordance to other study it was also reported that a total of 207 students were included, with 84.5% of the participants being female. The instrument's total competence rating was 3.4 out of 5. Attitude, abilities, and knowledge all had factor values of 3.7, 3.0, and 3.1 respectively. The favorable attitude that nursing students have towards EBP may make it easier to put it into practice⁵.

In the recent study pre-interventional mean score of knowledge regarding evidence-based practice among participants was 2.0 ± 0.84 . While the post-interventional mean score was 3.80 ± 1.07 . The findings revealed that there was a significant difference between pre and post-interventional knowledge scores as evidenced by (P-value <0.001).

These results were contrasted with those of another study, which found that 152 students were enrolled, the median age was 20, and 76.3% of participants attended more than 75% of the allotted class time. Following the EBP course, the students obtained a high overall EBP competency score (mean = 4.21; SD = 0.26). The average result on the objective test was 6.86 (SD = 1.36) points. The results of the subjective and objective EBP competency measurements showed a strong correlation¹⁰.

EBP contributes to the advancement of healthcare by generating new knowledge and identifying areas of research and practice that require further investigation. By continually evaluating and implementing evidence, healthcare professionals can drive innovation, improve healthcare delivery, and contribute to the growth of the field.

5. Conclusion

The results of this study suggest that a learning intervention that includes theoretical and practical lessons on the method of evidence-based practice (EBP) as well as the application of the critical incident methodology during clinical years can improve EBP competency among nursing students. Although there is little information now available to support the best model or program of study for EBP, the findings of this study may be helpful to other academic institutions. Despite the scarcity of literature on this topic, the study's outcomes offer insights that may be relevant and applicable in the field of EBP education for nursing students.

Limitations

This study was conducted as a partial fulfillment of the requirement for a degree of Masters of nursing hence, the biggest limitations were time and resources.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Written informed consent was taken from all the participants.

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