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A Quasi-Experimental Study of the Effectiveness of Evidence-Based Practice Education Sessions on Nurses' Knowledge and Attitude Regarding Evidence-Based Practice

Omar Hussein Shareef

University of Sulaiman, Sulaymaniyah, Iraq.

Corresponding Author Email: omar.shareef@univsul.edu.iq

ABSTRACT

Background: *Nursing activities are no longer accepted without Evidence-Based Practice (EBP). For that reason, nurses should have a positive attitude toward EBP. They should acquire good knowledge for enhancing their practices. This study aims to increase EBP knowledge and attitude among nurses in clinical practice.* ***Materials and Methods:*** *a quasi-experimental design was used to involve nurses in different private hospitals in Sulaimani city. A total of 37 nurses participated after giving a verbal consent, by convenient sampling. Knowledge and attitude levels were observed at baseline and after an intervention. Two EBP sessions were presented, and a modified questionnaire for assessing knowledge and attitude of EBP was used. SPSS version 25.0 was used for data analysis.* ***Results:*** *The mean age was (31 ± 7.7), they had administrative positions like head nurse (13.5%) and ward in charge (62.2%). The attitude levels were the same before and after the intervention as (97.3%) had a positive attitude. The proportions of the nurses with a good level of EBP knowledge were improved from 51.4% at baseline to 97.3% following the sessions. A statistically highly significant association was found between working area and level of attitude meanwhile, other variables did not represent any significant relationships p (0.02). There was a highly significant correlation between pre-and-post attitude scores at the p (0.002) meanwhile, no correlation was found between pre-and-post knowledge scores at the p (0.6).* ***Conclusions:*** *Evidence-Based Practice sessions can have positive impact on the nurses' knowledge to consider in their daily practice.*

Keywords: EBP, Attitude, Evidence based nursing and Nurses' Knowledge.

Article Information

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INTRODUCTION

Evidence-based practice (EBP) has become an essential requirement for patient safety in health care[1]. The main components of EBP are the best available research evidence, the expertise' clinical experiences combined with the patients' value and unique characteristics[2]. It incorporates the development of skills in locating knowledge, critical thinking, and clinical judgment [3]. Safe and effective and delivery of patient care requires the use of nursing practices consistent with the best available knowledge. This includes the use of clinical expertise and patient preferences and values in addition to current best research evidence[4] while a major challenge in health care is valuing the continual discovery of new knowledge, assessing it for appropriateness for inclusion in care delivery, and putting into practice in addition to the knowledge that exists[5].

Nurses need an appreciation and understanding of the role of evidence, which includes how to select an evidence-based practice and how clinical expertise and patient values and preferences should form the basis for nursing intervention [6].

The overall aim of this study is to discover the levels of EBP knowledge and attitude among the nurses. Then possible association between the levels of EBP knowledge and attitude with the socio-demographic attributes of the nurses will be found. Finally, the trial targeted potential correlation between some of the socio-demographic variables and the levels of knowledge and attitude of Evidence Based Nursing.

METHODS

A quantitative method of a quasi-experimental design was applied using the pre-post intervention approach to examine the effectiveness of academic sessions regarding nurses' knowledge and attitude toward evidence-based practice from November 2024 to January 2025.

Data collection was performed in Hareem Private Hospital. The participating nurses from different private hospitals were invited and enrolled twice. First at the baseline (pre-test) was taken, and after the implementation of the sessions the nurses' knowledge and attitude toward evidence-based practice were taken.

Tools in data collection

A questionnaire was developed to assess knowledge and attitude among the participants. The questionnaire comprises three main parts including, socio-demographic characteristics. The knowledge and attitude regarding evidence-based practice are constructed. Knowledge and attitude scores are calculated for the participants based on their responses to sets of 20 questions, and the overall responses or EBP knowledge and attitude were calculated from 20 to 100 scores. The equation for the categorization (Max-Min / Number of categories) was used to create the different levels for knowledge (poor, moderate, and good) for attitude (good and bad attitudes). The reliability of the Likert questionnaire was tested and Cronbach's Alpha showed 0.88 which was represents the reliability of the tool used for data collection [7].

Ethical considerations

The current study was presented to the ethics committee of the University of Sulaimani, College of Nursing. By which ethical approval was guaranteed by the ethical committee. Participants in the study were informed about the nature and objectives of the study. A verbal informed consent was taken. They were acknowledged about possible steps and procedures of the study.

RESULTS

The levels of EBP knowledge and attitudes were different between the nurses due to several factors, such as demographic features, areas of work in the clinical settings, and their levels of education. The tables below illustrate their socio-demographic backgrounds, EBP knowledge and attitude scores, levels of the EBP knowledge and attitudes and the possible associations.

Table one shows the demographic attributes of the study sample, in which the ratio of female to male is nearly equal, but 64.9% were married. 70% had a BSc in nursing, 16% had an MSc or higher diploma, and only 13% had a technical diploma. The majority of them (94.9%) were studied in the public organizations. They are comprised of 23 wards in charges, 5 head nurses, and 9 ordinary nurses. **Table two** describes the previous information and training course about EBP. It has been found 81% of them not participated in any courses related to EBP however, but more than 75% heard about the EBP term. **Table three** shows the mean of pre and post scores for attitude and knowledge of EBP. There are also mean scores for pre- and post-attitude as follows. The mean score for attitude before the lessons was 77.6 ± 7.58; the mean score increased to 87.6 ± 7.1 after the intervention. Additionally, the mean score for knowledge before the lessons was 46.0 ± 6.48, the score increased to 53.9 ± 2.97 following the intervention.

Table (1): The socio-demographic attributes of the participants.

Socio-demographic features	Frequency	Percent
Gender		
Male	20	54.1
Female	17	45.9
Marital Status		
Married	24	64.9
Unmarried	13	35.1
Current Academic Levels		
Diploma	5	13.5
BSc	26	70.3
MSc / High Diploma	6	16.2
Socio-economic Status		
Sufficient	19	51.4
Barely sufficient	17	45.9
Insufficient	1	2.7
Current Residency		
Urban	26	70.3
Sub-Urban	9	24.3
Rural	2	5.4
Types of the Study Organization		
Public	35	94.6
Private	2	5.4
Position in the clinical area		
Head Nurse	5	13.5
Ward in Charge	23	62.2
Ordinary Nurse	9	24.3
The working department		
Ward	14	37.8
Outpatient Dep.	3	8.1
Emergency Dep.	12	32.4
ICU / NICU	3	8.1
Entire hospital	5	13.5
Total	37	100.0

Table (2): Previous information and training course about EBP.

Have you ever involved in any course regarding EBP	Frequency	Percent
Yes	7	18.9
No	30	81.1
Have you ever heard the term Evidence Based Practice		
Yes	28	75.7
No	9	24.3
Total	37	100.0

Table (3): Mean ±SD of pre and post attitude and knowledge scores.

Variables	Minimum	Maximum	Mean	Std. Deviation
Pre-EBP Attitude Scores	59	93	77.65	7.587
Post-EBP Attitude Scores	57	99	87.68	7.142
Pre-EBP Knowledge scores	32	56	46.08	6.487
Post-EBP Knowledge scores	46	59	53.97	2.977

Table (4): Attitude levels of EBP at baseline and following the intervention.

Baseline EBP Attitude Levels		Frequency	Percent
	Positive Attitude	36	97.3
	Negative Attitude	1	2.7
Post-EBP Attitude Levels			
	Positive Attitude	36	97.3
	Negative Attitude	1	2.7
	Total	37	100.0

Table four reveals the attitude levels among the nurses at baseline and after the intervention. It has been shown the level of attitude before and after the intervention was at the same level. For instance, 97.3% presented with a good attitude at baseline and the proportion of good attitude stayed 97.3% for good attitude.

Table (5): Knowledge levels of EBP at baseline and following the intervention.

Baseline EBP Knowledge Levels	Frequency	Percent
Good Knowledge	19	51.4
Moderate Knowledge	16	43.2
poor knowledge	2	5.4
Post-EBP Knowledge Levels		
Good Knowledge	36	97.3
Moderate Knowledge	1	2.7
poor knowledge	0	0.0
Total	37	100.0

Table five presents the knowledge levels of EBP at baseline and following intervention. The proportion of the nurses who had good knowledge was (51.4%) then it increased to (97.3%). Besides, 5.4% of them presented with poor knowledge at baseline, and after the intervention, no one presented with poor knowledge.

Table (6): Association between the socio-demographic attributes and levels of attitude.

Socio-demographic features		Baseline-EBP Attitude Levels		Chi-Square	P *
		Positive Attitude n. (%)	Negative Attitude n. (%)		
Gender	**Male**	20 (100%)	0 (0%)	1.209	0.27
	Female	16 (94.1%)	1 (5.9%)		
Marital Status	**Married**	23 (95.8%)	1 (4.2%)	0.557	0.45
	Unmarried	13 (100%)	0 (0%)		
Current Academic Levels	**Diploma**	5 (100%)	0 (0%)	0.435	0.80
	BSc	25 (96.1%)	1 (2.9%)		
	MSc / High Diploma	6 (100%)	0 (0%)		
Socio-economic Status	**Sufficient**	18 (94.7%)	1 (5.3%)	0.974	0.61
	Barely sufficient	17 (100%)	0 (0%)		
	Insufficient	1 (100%)	0 (0%)		
Current Residency	**Urban**	25 (96.1%)	1 (2.9%)	17.98	0.32
	Sub-Urban	9 (100%)	0 (0%)		

Socio-demographic features		Baseline-EBP Attitude Levels		Chi-	P *
	Rural	2 (100%)	0 (0%)		
Types of the Study Organization	**Public**	34 (97.1%)	1 (2.9%)	0.059	0.89
	Private	2 9100%)	0 (0%)		
Position in the clinical area	**Head Nurse**	5 (100%)	0 (0%)	0.626	0.71
	Ward in Charge	22 (95.7%)	1 (4.3%)		
	Ordinary Nurse	9 (100%)	0 (0%)		
The working department	**Ward**	14(100%)	0 (0%)	11.6	0.02
	Outpatient Dep.	2 (66.7%)	1 (33.3%)		
	Emergency Dep.	12 (100%)	0 (0%)		
	ICU / NICU	3 (100%)	0 (0%)		
	Entire hospital	5 (100%)	0 (0%)		
Total		36 (97.3%)	1 (2.7%)		

Table six illustrates the possible association between the socio-demographic attributes and levels of attitude among the nurses at baseline. There is a statistically highly significant relationship between working area and the levels of attitude (p 0.02). A negative attitude voice is only found among the nurses working in the outpatient department; when compared to other departments, there is no negative attitude at all. Regarding other demographic features, there is no statistically significant association with the baseline levels of attitude.

Table (7): Association between the previous EBP knowledge and the levels of attitude.

Socio-demographic features		Baseline-EBP Attitude Levels		Chi-Square	P *
		Positive Attitude n. (%)	**Negative Attitude n. (%)**		
Have you ever involved in any course regarding EBN	Yes	7 (100%)	0 (0%)	0.240	0.64
	No	29 (96.7%)	1 (3.3%)		
Have you ever heard the term Evidence Based Nursing	Yes	27 (96.4%)	1 (2.6%)	0.330	0.56
	No	9 (100%)	0 (0%)		
Total		36 (97.3%)	1(2.7%)		

Table seven shows the possible association between the previous EBP knowledge and the levels of attitude. The results of this study revealed that there is no statistically significant association between the previous EBP knowledge and the levels of attitude (p>0.05).

Table (8): correlation between pre-post scores for knowledge and attitude.

The attitude scores		Pre-EBP Attitude Scores	Post-EBP Attitude Scores
Pre-EBP Attitude Scores	Pearson Correlation	1	.483**
	Sig. (2-tailed)		.002
	N	37	37
Post-EBP Attitude Scores	Pearson Correlation	.483**	1
	Sig. (2-tailed)	0.002	
	N	37	37
The knowledge scores		Pre-EBP Knowledge scores	Post-EBP Knowledge scores
Pre-EBP Knowledge scores	Pearson Correlation	1	.311
	Sig. (2-tailed)		.061
	N	37	37
Post-EBP Knowledge scores	Pearson Correlation	.311	1
	Sig. (2-tailed)	.061	
	N	37	37

Table eight demonstrates the correlation between pre-post scores for knowledge and attitude. According to the finding, there is a statistically significant positive correlation between pre- and post-attitude scores among the nurses (P = 0.002). However, there is no statistically significant correlation between pre- and post-knowledge scores (P = 0.61).

DISCUSSION

According to the recent literature, the Evidence-Based Practice (EBP) knowledge and attitude levels vary significantly among healthcare providers and this may be due to multiple factors such as working area, levels of education, and clinical experience. Understanding these varying levels is vital to identifying gaps and implementing strategies to enhance EBP competencies among nursing staff [8].

In the current study, generally moderate EBP knowledge was found among the nurses when their scores were reported as 46 at baseline. Besides, a positive attitude was felt among them before intervention when the scores for attitudes were found to be 77, which was represents a positive attitude.

Studies consistently show that many nurses possess only a moderate level of EBP knowledge, despite recognizing its importance for improving patient outcomes. For instance, Melnyk et al. (2012) reported that while nurses generally have positive attitudes toward EBP, their actual knowledge, particularly in areas such as critical appraisal of research and applying evidence to practice, is often limited. Many nurses are familiar with the concept of EBP but lack the specific skills needed to implement it, such as formulating clinical questions [9].

To address these gaps, healthcare organizations should prioritize EBP training programs, mentorship, and supportive infrastructures. Integrating EBP into daily practices through tools like continuous nursing education helps bridge the gap between knowledge, attitudes, and practice [10]. For that reason, the current study investigated the impact of nursing education on advancing EBP in the clinical settings.

We found a great improvement in attitude scores from 77 to 87 and their knowledge scores from 46 to 53 after the sessions. Nearly the same results were found by a scoping review in which nursing education improved academic and clinical skills related to EBP [11]. In this study there is

an association between the levels of knowledge and attitude for EBP and working departments at the hospitals. This could represent the organizational factor for evidence-based practice among the nurses. Likewise, a study by Boström et al. (2013) found an association between performing EBP activities and the organizational areas of work in health care settings [12]. Another study revealed that nursing education and academic sessions can improve the nurses' knowledge and skills related to EBP in the clinical settings [13]. In the recent study, it has been found that nursing education can have a positive impact on upgrading EBP knowledge and attitudes among the nurses in hospitals. Similarly, this finding was approved by a meta-analysis as a critical requirement for advancing EBP in the clinical settings [14].

CONCLUSION

There are different levels of nurses' knowledge and attitude regarding evidence-based practice. Beside this, nurses could improve their knowledge and attitude levels after participation in EBP sessions. The working department showed an association with the levels of attitude by which only those worked in emergency had lower level of EBP attitude. Finally, a statistically significant positive correlation between pre- and post-attitude scores among the nurses detected.

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Ethical approval

The present study which is conducted by authors (Omar Hussein Shareef) was approved by the Department of community health nursing, College of Nursing, the scientific committee.

Statement of permission and conflict of interests

The others declare that there is no conflict of interest.

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