

## Effect of an Educational Program on Nursing Interns` Evidence Based Practice Attitude, Knowledge and Skills

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### Abstract

**Background:** Nurses serve instrumental roles in ensuring and providing evidence-based practice. Numerous opportunities exist for nurses to use evidence to make care more effective.

**Aim:** to improve nursing interns' attitude, knowledge and skills towards evidence based practice (EBP) after implementing an educational program.

**Methods:** A quasi-experimental research study was conducted in 2015 with a convenience sample of 40 nursing interns from Faculty of Nursing, Menoufyia University, Egypt.

**Results:** the majority of the study subjects had a positive attitude toward EBP before and after the program. In relation to skills, more than one third of the subjects had high skills toward EBP in pre test. While, this percentage was increased to 80 % in the post test. Moreover, less than half of the study subjects had fair knowledge about EBP in the pre test. However, in the post test, the majority of the study subjects had a good knowledge about EBP after implementing the program. These improvements were statistically significant.

**Conclusion:** Statistically significant improvements in nursing interns' attitude, knowledge and skills regarding evidence based practice after implementing an educational program.

**Recommendation:** incorporating EBP into the curricula of the bachelor of nursing program.

**Keywords:** attitudes, evidence-based practice, nursing interns, knowledge, skills.

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### I. Introduction

During the 1980s, the term "evidence based medicine" emerged to describe the approach that used scientific evidence to determine the best practice. Later, the term becomes "evidence based practice" as clinicians other than physicians recognized the importance of scientific evidence in clinical decision-making (Beyea S., slattery M., 2006). Evidence based practice (EBP) is the integration of clinical expertise, patient values, and the best research evidence into the decision making process for the patient care. The full integration of these three components into clinical decisions enhances the opportunity for optimal clinical outcomes and quality of life (Sackett et. al. 2000) .

Evidence-based practice encourages nurses to provide high-quality patient care on the basis of research and knowledge rather than on the basis of traditions, myths, advice of colleagues, or outdated textbooks. EBP covers multiple types of evidence like research reviews and evidence-based theory, research findings and the integration of that evidence with patient preferences and clinical expertise and values (Melnyk et. al., 2004) .

EBP takes time, work, resources, and effort, but the outcomes make them worthwhile. Numerous research studies demonstrate that EBP leads to higher quality care, greater nurse satisfaction, improved patient outcomes, and reduced costs than traditional approaches to care (McGinty & Anderson, 2008 & Shortell et. al., 2007 & Strout, 2005 & Williams, 2004). Despite these favorable findings, many nurses remain maladjusted in their application of EBP (Melnyk, et. al, 2010).

A recent study provided evidence that most nurses rarely used research reports, journal articles, and hospital libraries for reference and provide care in accordance with what they learned in nursing school (Pravikoff, Tanner, and Pierce, 2005). That finding, combined with the fact that the average nurse is more than 40 years of age, makes it apparent that many nurses' knowledge is probably outdated. Practice based on such knowledge does not translate into quality patient care or health outcomes. Evidence-based practice provides a critical strategy to ensure that care is up to date and that it reflects the latest research evidence (Beyea and Slattery, 2006).

Six steps for EBP process include: cultivate a spirit of inquiry; Ask clinical questions in PICOT format which take into account patient population of interest (P), intervention or area of interest (I), comparison intervention or group (C), outcome (O), and time (T); Search for the best evidence to inform clinical practice ; Critically appraise the evidence to determine which are most relevant, valid, reliable, and applicable to the clinical question; Integrate the evidence with clinical expertise and patient preferences and values; Evaluate the outcomes of the practice decisions or changes based on evidence; Disseminate EBP results (Melnyk, et. al, 2010)

## **II. Aim Of The Study**

The aim of this study is to improve nursing interns' attitude, knowledge and skills towards evidence based practice (EBP) after implementing an educational program. **Objectives:**

1. Assess nursing interns' attitude, knowledge and skills regarding evidence based practice in the pre test.
2. Design an educational program on EBP based on results of the pre test and review of literature.
3. Assess nursing interns' attitudes, knowledge and skills regarding evidence based practice in the post test
4. Determine the degree of improvement of nursing interns' knowledge, attitude and skills after implementing an educational program on EBP.

### **Research Questions**

1. What is the level of nursing interns' knowledge and skills towards EBP in the pre test and the post test?
5. What is the nursing interns' attitude towards EBP in the pre test and the post test?
2. Is there improvement in nursing interns' attitude, knowledge, skills towards EBP after implementing an educational program on EBP?

## **III. Subjects And Methods**

### **Research design:**

A quasi-experimental research study with one-group pre test and post test assessments was used in conducting the present study.

### **Setting:**

The study was carried out in nursing administration department at the Faculty of Nursing, Menoufyia University, Egypt. It was established in 1989 as the high Institute of Nursing, and began to study for the bachelor degree in the academic year 1991/1992. It was turned into college to grant bachelor's and master's and doctorates degrees in various disciplines of the college in the year 2000. Faculty of Nursing, Menoufyia University has the following departments: fundamentals of nursing, adult care nursing, maternity, pediatrics, community, psychiatric and nursing administration departments.

### **Subjects:**

A convenience sample of 40 nursing interns was included in the study. An internship year begins at the fifth year of the bachelor of nursing program under supervision of the Nursing Administration department. The nursing interns trained in the various areas ICU, Hemodialysis, Burn, Operating Room, Oncology, Emergency, and Neonatal Intensive Care Units in the different hospitals. Data was collected during the academic year 2014/2015.

### **Tool of data collection:**

One questionnaire was used to collect the study data. The questionnaire was Evidence-Based Practice Profile Questionnaire (University Of South Australia, 2010). The aim of this questionnaire is to collect data on evidence-based practice (EBP) knowledge, skills and attitude. Researchers modified the questionnaire after reviewing the relevant literature (Hussein, Hussein, 2014; Hussein, Hussein, 2013; Chang, 2008). It consisted of two parts:

**First part:** consisted of 6 items related to demographic characteristics of the study subjects as age, gender, hospital, training unit, any formal training that student received related to EBP, and the type of the received training (short training from 1-3 hours, intermediate training from 3-10 hours and long training from 10-20 hours).

**Second part:** consists of 53 items divided into three domains namely: attitude, skills and knowledge. The attitude domain consists of 27 items as: I enjoy studying, I intend to develop knowledge about EBP, Application of EBP is necessary in my work, I intend to apply best available evidence findings to improve practice, I need to increase the use of evidence in my daily work, EBP improves the quality of my work,

Skills domain consists of 15 items including: I have research skills, I have computer skills, I feel able to analyze practical utility of research study, and I consider patient preferences when making clinical decisions. Knowledge domain consists of 11 items as: I understand what meant by EBP, I am aware of the importance of EBP; I know how to make clinical questions (PICO format).

### **Scoring system:**

The responses for attitude, skills, and knowledge items were measured by using 5-point rating scale ranging from strongly agree (5) to strongly disagree (1). The attitude dimension was scored as positive attitude (score  $\geq 81$ ), and negative attitude (score  $< 80$ ). The skills domain was scored as high, moderate, and low which pointed to score  $\geq 49$ , from 35 up to 48, and score  $< 35$  respectively. knowledge domain was scored as good, fair and poor: score  $\geq 60$ , from 43 up to 59, and score  $< 43$  respectively.

**Administrative approval:**

An official permission was obtained from the dean of Faculty of Nursing, Menoufyia University to conduct the study.

**Tool validity:**

Data collection tool was submitted to a panel of experts composed of five members from the nursing administration department, Faculty of Nursing to review and test content validity, modifications were done based on their comments.

**Pilot study:**

Before collecting data, the research questionnaires administered to eight nursing interns to test clarity of questionnaires and make necessary modifications. Students included in the pilot study excluded from data analysis.

**Data collection procedure:**

Data collected during summer 2015. Before beginning collecting data, a brief explanation of the aim of the study was given to the study subjects. Data collection was conducted throughout the following phases:

**Phase one (assessment phase):** throughout this phase, EBP questionnaire was distributed on the study subject to test the attitude and level of skills and knowledge towards EBP in the pre test. The collected data analyzed to identify study subjects` needs related to attitude, skills and knowledge towards EBP.

**Phase two (planning phase):** according to the results of the pre test and extensive review of literature, the educational program on EBP was designed. The aim of the program was to improve the nursing interns' attitude, skills and knowledge related to EBP. To achieve this aim, the program covered the following topics:

- Definition of research utilization, evidence based practice, evidence based nursing.
- Importance of EBP.
- Stages of Evidence Based Practice.
- Types of research designs.
- Critical Appraisal of Evidence
- Levels of Evidence
- Quality of evidence
- Factors to consider when assessing the quality of a study
- Barriers to implement EBP and how to overcome them.

**Phase three (implementing phase):** the program was conducted by the researchers for the period of three weeks, two lectures each week. It begins with the aim of the current study, aim of the program, followed by discussion of the main topics of the program. At the end of the program, open discussion with the study subject was done to answer any questions or explain any difficulties.

**Phase four (evaluation phase):** after conducting the program, the post test was done to examine to what extent the program improved the nursing interns' knowledge, skills, attitude toward EBP.

**Statistical Analysis**

The collected data were coded and fed to statistical software SPSS version 20. Qualitative data were analyzed in terms of frequencies and percentages. Chi-square test is used for testing statistical significant differences between qualitative data in the pre test and also in the post test. Quantitative data were analyzed using means and standard deviations. Paired sample T-test was used to test the statistical significant differences between means of the pre test and post test.

IV. Results

Table 1. socio-demographic characteristics of study subjects

Socio-Demographic Characteristics	Nursing interns	
	No	%
<b>Age</b>		
22 years	11	27.5
23 years	29	72.5
Mean ±SD	22.7±0.45	
<b>Gender</b>		
Female	40	100
Male	0	0
<b>Hospital name</b>		
Alhelal	29	72.5
Almowasah	11	27.5
<b>Training area</b>		
ER	8	20.0
DIALYSIS	3	7.5
OR	14	35.0
NICU	5	12.5
ONCLOGY	5	12.5
ICU	5	12.5
Total	40	100.0

Table (1) presents the socio-demographic characteristics of study subjects. The table demonstrated that the total number of the study subjects was 40 nursing interns, female, the mean age of the them was 22.7±0.45, the majority of the them were trained in alhelal hospital, and 35% of them were trained in OR.

Figure 1. percentage distribution of study subjects according to the receiving of formal training course on EBP in the pre test

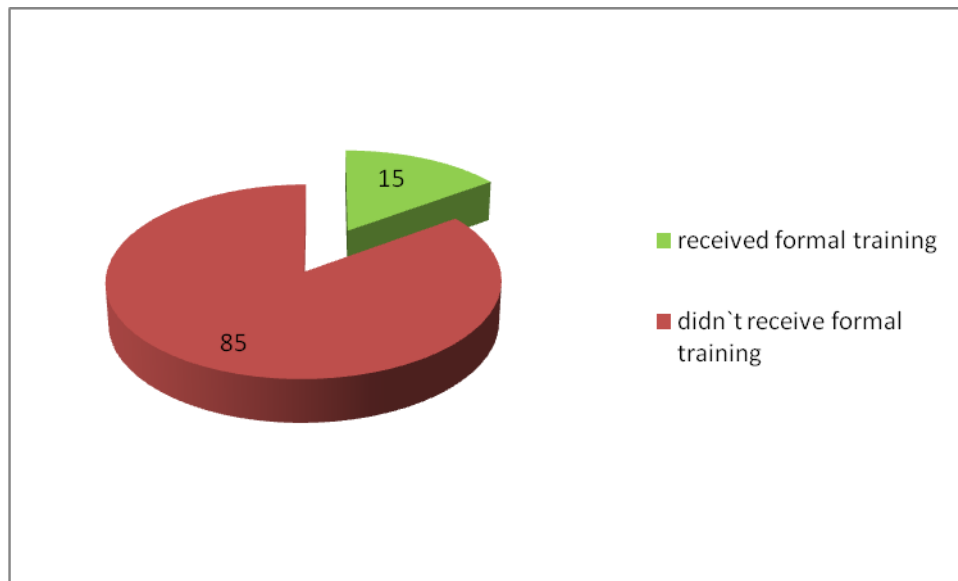


Figure (1) shows the percentage distribution of study subjects according to receiving of formal training course on EBP. The figure illustrated that the highest percentage (85%) of subjects did not attend any formal training on EPB before.

**Figure 2. percentage distribution of study subjects according to type of training program received by intern students.**

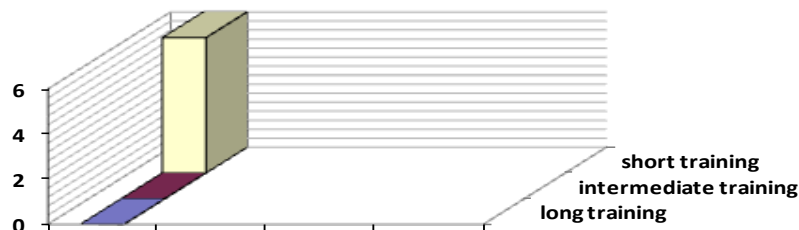


Figure (2) shows percentage distribution of study subjects according to type of training program received by intern students. According to the figure, only short training from 1-3 hours has been attended by (15%) of study subjects. However, the rest of the sample (85%) didn't attend any formal training.

**Table 2: comparison of the percentage levels of attitude, skills and knowledge in the pre test and post test**

Domains of EBP	Nursing interns (n=40)							
	pre test				Post test			
	No.	%	Chi-square	p-value	No.	%	Chi-square	p-value
<b>Attitude</b>								
Positive attitude (score≥81)	35	87.5	16.3	0.9	37	92.5	19.8	0.8
Negative attitude(score<80)	5	12.5			3	7.5		
<b>Skills</b>								
High(score≥49)	14	35	19.4	.6	32	80	25.1	.2
Moderate (35-48)	13	32.5			7	17.5		
Low(score<35)	13	32.5			1	2.5		
<b>Knowledge</b>								
good ((score≥60)	5	12.5	31.3	.1	36	90	19.9	.4
fair (43-59)	17	42.5			4	10		
poor (score <43)	18	45			0	0		

The table (2) illustrated the comparison of the percentage levels of attitude, skills and knowledge in the pre test and post test. The table revealed that there were no statistical significant differences between study subjects related to attitude, skills, and knowledge of EBP neither in the pre test nor in the post test. There were improvements in all domains of EBP in the post test than in the pre test.

**Table 3. Comparison between mean scores of attitude, skills and knowledge in the pre test and posttest**

Domains of EBP	pre test Mean ±SD	Post test Mean ±SD	t- test	p-value
Attitude	92.15±12.6	100.02±10.40	-3.25	0.001*
Skills	42.50± 10.40	52.40± 7.45	-4.64	0.001**
Knowledge	43.60±11.23	69.35±6.93	-13.03	0.001**

Table (3) demonstrated comparison between mean scores of attitude, skills and knowledge in the pre test and post test. As noticed from the table, There were statistical significant improvements in the three EBP domains in the post test in comparison to pre test.

## V. Discussion

With emphasis on quality care and patient safety, EBP has gained importance for clinicians delivery patient care (Stevens & Staley, 2006). Additionally, the need to embed evidence in clinical settings is now considered challenge for health service professional. Therefore, the aim of the current study is to improve nursing interns' attitude, knowledge and skills towards evidence based practice (EBP) after implementing an educational program.

According the current study findings, the highest scores percentage of the study subjects had a poor knowledge regarding EBP in the pre test phase. From the researchers' point of view, this finding can be explained by the fact that EBP is not included in the curricula of undergraduate nursing program. Also, the

highest percentage of nursing interns didn't attend any formal training on EBP. Only 15% attend short training on EBP.

In the same respect, various studies have revealed that nurses have little knowledge of evidence-based practice (Melnik et al., 2004 & Olade, 2004), especially about research evaluation (Adamsen et al. 2003, Gerrish & Clayton 2004, Hutchinson & Johnston 2004), research methods and statistics (Nagy et al. 2001, Veeramah 2004, Milner et al. 2006). However, even nurses with substantial knowledge about evaluating research evidence find themselves powerless and with limited authority to introduce changes in their workplaces. Some researchers claim that this derives from nurses' insufficient exposure to discussions on clinical and nursing topics (Cooke et al. 2004, Gerrish & Clayton 2004).

According to the study findings, the highest score percentage of the study subject reported high skills related to EBP' domains in the pre test and post test. This was not surprising because the nursing interns are involved in different research activities that requested from them during the fourth year at the faculty. This allows them to search internet, evaluating the quality of available information, and selecting information that more relevant to their assignment.

In contrast, Estabrooks (1999), Egerod & Hansen (2005), Pravikoff et al. (2005), and Thompson et al. (2007) reported that one of the barriers to implement EBP is lack of knowledge and skills to evaluate research findings. Additionally, Caine & Kenrick (1997), Udod & Care (2004), and Milner et al. (2006) mentioned that organizations often employ nurse managers who lack research skills in advancing evidence based nursing practice (EBNP), and some who neither comprehend the importance of EBNP nor believe the topic to be important.

In the present study, the finding revealed that the majority of the nurse intern had a positive attitude toward EBP in the pre test phase. This finding may supported by the finding of the study conducted by Stichler (2011). It indicated that faculty attitude toward EBP received highest mean scores, followed by knowledge and skills in EBP. From the researchers' point of view, it consequently will affect positively in the student' attitude toward EBP.

In the same line, the study conducted by olade (2004) who found that nurses had favorable attitude towards the research and this was significantly found among baccalaureate and master graduates. Furthermore, the finding of the study conducted by El-Nemer et. al.(2009) revealed that most of the studied physician and nurses had a positive attitude and interest in learning and improving skills necessary to apply EBP. However, there are substantial barriers at the individual level that hinder to apply EBP as nurses lack skill in evaluating the quality of research, and they are isolated from knowledgeable colleagues with whom to discuss research. Broadly speaking, several studies have demonstrated nurses' positive attitudes towards research and agreement that research and EBNP are relevant for their daily practice (Nagy et al. 2001, Sanzero-Eller et al. 2003, Wallin et al. 2003, and Milner et al. 2006).

In contrast, other studies reported that nurses held negative attitudes towards research, and few maintained that the research in its current form is applicable to their work (Nagy et al. 2001). Furthermore, nurses' attitudes towards research were found to be less positive than those of other healthcare professionals (Sanzero-Eller et al. 2003).

Ultimately, the current study findings indicated a statistical significant improvements in nurses intern knowledge, skill, attitude toward EBP after implementing an educational program on EBP. Therefore, the application of program on EBP in the current study was effective in increasing the level of study' subject's knowledge, skill, attitude related to EBP. From the researchers point of view, this happened as result of the subject's enthusiasm to gain more knowledge and skill about EBP. In the same line, Eid (2003) reported that continuing education program can successfully influence nursing practice.

Likewise, the development of research knowledge and skill by participation in formal education programs and in-service training has been identified as an initial step in the promotion of EBP. Participation in such programs may assist nurses to assume responsibility for advancing their own research knowledge (Mackenzie, 2001). Additionally, a number of researchers have focused on ways to improve nurses' knowledge in the EBNP domain. A study conducted in Britain showed that nurses who attend a university program reported improvement in their critical evaluation ability in relation to research, enhanced search skills, ability to use and apply study findings and discuss research with others (Veeramah 2004).

Studies have emphasized the importance of educating nurses in research and in critical reading of professional journals (Estabrooks 1999, Egerod & Hansen 2005, Pravikoff et al. 2005, and Thompson et al. 2007). Additional research has pointed to the importance of organizational support.

## **VI. Conclusion**

Based on the current study findings, the EBP program had a statistical significant positive effect on improving the nurses intern' knowledge, attitude, skills related to evidence based practice. In the light of the study findings, the following recommendations are proposed:

- EBP should be incorporate across undergraduate and postgraduate curricula at faculty of nursing.
- Encourage nursing interns to participate in formal educational program that will assist them attaining greater knowledge and skills of research and its utilization.
- Encourage nursing interns to attend any theses and doctoral dissertation discussion which, consequently, will help them to be updated with new evidence in practice and learn how to critique any research.
- At the end of internship training area, the discussion should be conducted between nursing interns and the responsible faculty member to discuss new research evidences in this area and the possibility of its application.
- Encourage nurse's administrators to provide a work environment that identifies research evidence that will give nurses intern an opportunities for search evidence, ask questions, evaluating each evidence for possibility of its application.
- Improve faculty attitude toward EBP.

- The library of the faculty should have new issues of nursing journals to help students in searching new evidences and follow up updates in nursing.
- Students should be educated about considering patient values in clinical practice

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