Effect of an interactive e- learning evidence based nursing practice educational program on nursing students' knowledge, skills and attitudes

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Abstract: Over the past decade, in accordance with most health-related professions, there has been a growing focus on quality improvement including moving from a traditional intuition-based paradigm to evidence-based nursing practice (EBNP). EBNP refers to the application of the best evidence in clinical decision-making by integrating clinical expertise with recent research findings, while taking into consideration the values and preferences of patients Therefore, the **aim** of the study was to identify the effect of an interactive e-learning evidence based nursing practice education program on nursing students' knowledge, skills and attitudes. **Setting** The study was conducted at Sur Nursing Institute Sultanate of Oman. The sample consisted of all nursing students who were studying obstetric& gynecological nursing at Sur Nursing Institute (36) The data collected throughout a period of fifteen months,from beginning of October 2009 to December 2010 using a quasi experimental designed. Assessment of nursing students` knowledge. skills and attitude was done to identify their needs, depend on the findings the researcher developed an interactive e- learning evidence based nursing practice education program. conducted training continue for six month, from first October 2009 to end of June 2010 (from mid of December 2009 to mid of February 2010 training was stopped for final term exam and holidays between first and second semester)an extensive five sessions regarding basic knowledge of EBNP followed by nine sessions for training skills needed to adopt EBNP. under supervision of the researcher the student trained two hours /week for six months to search database, appraise the literature and applied to individual patients. The students' knowledge, skills and attitude were assessed after one, three and six months from program implementation. **Tools of data collection:** tool one which included two part. parts (1) Socio-demographic data. Part (2)a questionnaire regarding Knowledge about EBNP. Tool two: EBNP skills assessment scale, Tool three: EBNP Attitudes Scale, Tool four: Barriers, supporting and facilitating factors to adopt EBNP questionnaire. **Results:** The main study findings showed that, all study subjects showed that they have poor knowledge, poor skills, and negative attitude regarding EBNP before the program. as well the majority revealed negative attitude to adopting EBNP.. Meanwhile a great improvement in students knowledge was observed after one, three and six months. The EBNP skills of student nurses gradually improved after one, and three months, maximum improvement was observed after six months. a slight improvement in the attitude was shown after one month gradual improvement was identified after three and six months. Moreover, the study Concluded that highly significant difference were observed among nursing students 'knowledge 'skills and attitude regarding EBNP before the program and after one, three and six months. In the light of the study results, it was **recommended that** EBNP should be incorporated in all nursing curriculum to improve the quality of care rendered by nursing students.
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1. Introduction

Over the past decade, in accordance with most health-related professions, there has been a growing focus on quality improvement including moving from a traditional intuition-based paradigm to evidence-based nursing practice (EBNP). [1] Evidence-Based Practice (EBP) is a problem-solving approach to the delivery of health care that integrates the best evidence from studies and patient care data with clinician expertise and patient preferences and values. When EBP delivered in a context of caring and in a supportive organizational culture, the highest quality of care and best patient outcomes can be achieved. [2, 3]

EBP marks a shift among health care professionals from a traditional emphasis on authoritative opinions to an emphasis on data extracted from prior research and studies. [2/4] Moreover, as nurses are increasingly more involved in clinical decision making, it is becoming important for them to utilize the best evidence to make effective and justifiable decisions. [5]

As maternity nurses play a crucial role in the delivery of health care, they need to embrace new and innovative techniques to provide effective and best possible treatment to women during their reproductive life. [4,6] Midwives will deliver innovative evidence-based, cost-effective, quality

care across integrated health Holistic models of care. Which will be delivered by a graduate professional who makes autonomous decisions when appropriate, consults where necessary and manages a woman's health and social needs and social care contexts? They will have the capacity to initiate and to respond to change. [4]

Every minute a woman dies in child birth or from complications of pregnancy. That adds up to some 529,000 lost each year, almost all in developing countries. For every woman who dies as many as 30 others suffer chronic illness or disability [6,7]. The tragedy of a woman dying in childbirth extends beyond her own death.. Devastating her infant, her other children, her family and the community. Commitment is needed among maternity nurses and organizational leader to identify best practices in reducing maternal mortality, and to fund and implement programs with strong evidence of effectiveness in and translate the best interventions for dissemination to countries and communities that are disproportionately affected. [8, 9]

Maternity nurses play a vital role to improve the women's' health throughout her reproductive life by rendering high quality of care which, ultimately, results in positive and improved

patient outcomes.. Accomplishing this requires that the maternity nurses should have adequate knowledge, satisfactory skills and positive attitude regarding evidence based practice [10,11].

Implementation of EBP places additional demands on nurses to apply credible evidence to individual client situations through searching related evidence, using clinical judgments, and considering client values and system resources. To effectively apply the EBP process, in addition to the basic knowledge and skills required to undertake nursing work, a maternity nurse must have the ability to: identify knowledge gaps, formulate relevant questions which depends on knowledge base for asking questions. ,conduct an efficient literature search, for the best evidence. Gathering the most relevant information by systematic search using the relevant database of the literature or clinical guidelines, resources, and procedures for finding current best evidence from the research. Once articles are selected for review, they must be rapidly appraised to determine which are most relevant, valid, reliable, and applicable to the clinical question, and then Integrate the evidence with clinical expertise and patient preferences and values. Research evidence alone is not sufficient to justify a change in practice. Clinical expertise, based on patient assessments, laboratory data, and data from outcomes management programs, as well as patients' preferences and values are important components of

EBP. apply the literature findings appropriately to the patient's problem, and applying relevant findings into patient care decision making. [12,13].

The challenge is how to integrate research and knowledge with nursing practice at the bedside. Maternity nurses have a professional responsibility and accountability to stay abreast of current research However, even when acquisition of knowledge and experience with research exists, nurses cannot be ensured that research will be translated into practice.. However maternity nurse's decision to incorporate evidence-based findings into practice is affected by the nurse's attitude, knowledge, and skill toward nursing research. Indeed maternity nurses should have an obligation to apply current research findings to daily nursing practice Evaluate the outcomes of the practice decisions or changes based on evidence. In addition, maternity nurses have the responsibility to conduct nursing research that adds to the body of evidence. Nurses need to be aware of the resources within the health care organization that support EBNP and research..Nurses ' knowledge, attitude, and skills are critical but ineffective if nurses are not supported by organization leaders Therefore, appropriate organizational structures and processes are essential in promoting EBNP and research utilization in clinical settings. [14,15].

Implementing EBNP is potentially beneficial for patients and healthcare systems, and for nurses. It enhances patients' access to and information about effective treatment, leads to higher quality care, improved patient outcomes. EBNP can improve the healthcare system by facilitating consistent decision-making and advancing cost-effectiveness. EBNP can help nurses by facilitating informed and evidence-based clinical decision-making, helping them to keep updated with technologies, and enabling greater efficiency. These new competencies, in turn, can raise nurses' status in multi-professional teams and the profession in general. Nurses who are involved in EBNP have been found to express a sense of professionalism and growth, which contributes to their professional identity and satisfaction.

In contemporary healthcare settings& evidence is continually changing. As new research and technologies emerge, old ideas and opinions are subject to scrutiny. This means that evidence is constantly developing. Nurses must therefore keep up with new perspectives on care. They must also learn to adopt a process of evidence-based practice that is open to scrutiny by their peers and the public. By being open and transparent, clinical decisions can be justified and accountability demonstrated, as required. [16-17].

Significance of the study:

An evidence-based nursing approach is a learned skill for the students that require intellectual curiosity. incorporating evidence based practice in nursing curriculum is mandatory by facilitating an evidence-based nursing approach within clinical nursing education... Nursing. faculty is incorporating evidence-based practice by helping students increase their skills in accessing and analyzing the most relevant evidence to support their beginning nursing practice. Training of students to provide rationales for quality nursing actions, recognize the importance of current research evidence and sources of knowledge, develop critical-thinking skills through independent, evidence-based methods of clinical decision making,. Virtually guide students within a framework of systematic observation, experience, and reliance on current nursing research to develop sound nursing practices.[12,15]

Aim of the study

The aim of this study is to assess the effect of an interactive e-learning Evidence Based Nursing Practice educational program on nursing students' knowledge, skills and attitudes.

Hypothesis

An interactive e-learning Evidence Based Nursing Practice educational program will improve nursing students ' knowledge, skills and attitudes.

2. Material and Methods
Research design:

A quasi experimental research design was utilized in this study.

Setting:

The study was carried out at Sur Nursing Institute affiliated to Ministry of Health in Sultanate of Oman.

Subjects:

The study subjects consisted of all available 3rd year nursing students (36) who are studying Obstetric and Gynaecologic Nursing as well as Introduction to Research courses.

Tool one: EBNP knowledge questionnaire, which is developed and used by the researcher to collect the necessary data about:

1. **Socio-demographic characteristics** such as age, sex, marital status, residence, type of the family and income.
2. Knowledge about EBNP such as definition, importance and benefits. In addition to the five steps of EBP, which include formulating the clinical question; searching efficiently for the best available evidence; critically appraising the evidence; integrating the appraisal with clinical expertise and clients' preference; as well as evaluating the outcome of the practice decision.

Each knowledge question was scored as (2) for correct & complete answer; (1) for correct &

incomplete answer and (0) for wrong answer and don't know. The total knowledge score was summed up for each student and categorized as follows: good ($\geq$75%), fair (50%- <75%) and poor(<50%).

Tool two: EBNP skills assessment scale

This scale was developed by(**Rubin et al. 2009)** [(18)] and modified by the researcher. It was utilized to assess nursing students' skills in performing the five steps of EBNP, using an observational check list.

Each skill item was scored as (2) for completely done; (1) for incompletely done and (0) for not done. The total skills score was summed up for each student and categorized as follows: good ($\geq$75%), fair (50%- <75%) and poor (<50%).

Tool three: EBNP Attitudes Scale

This scale was developed by **Jette et al (2003)** [(19)] and comprised 16 statements. It was modified and used by the researcher to assess nursing students' attitudes in adopting EBNP.

Attitudes scale has 3 rating scale; agree, not sure and disagree. Each positive statement was given a score; agree was given (3), not sure was given (2) and disagree was given (1). Negative statement scores were reversed. The total attitudes score was summed up for each student and classified as follows: positive (38-48), neutral (27-<38) and negative (<27)

Tool four: Barriers, supporting and facilitating factors to adopt EBNP questionnaire

It included questions related to nursing students skills barriers and organizational barriers as well as supporting and facilitating factors to adopt EBNP

Methods

The study was executed according to the following steps:

Approvals :

Official permission was obtained from-Director General of Education & Training, and research Committee in South Sharqia Region affiliated to Ministry of Health. Sultanate Of Oman.

Tool development

Tool one, part I and 11 and tool four were developed by the researcher after extensive review of relevant and recent literature, while tool two and three were adopted and modified by the researcher. Tools were validated by a jury of 5 experts in the related field.

Pilot study

A pilot study was carried out on 10 of the students who were studying medical & surgical nursing It served to ensure clarity, applicability, time of administration for the tools of data collection. Also, it helped in determining the obstacles and problems that may arise during the actual collection of data. Based on the pilot results; there was no need

for amendment in the tools. The subjects of the pilot were excluded from the main study sample.

Data collection

The purpose of the study was explained to all participants and a written consent to participate in the study was obtained, confidentiality of the collected data was ensured...Nursing student s'knowledge. skills and attitudes were assessed to identify their needs. Depending on the results, an interactive e- learning EBNP educational program was developed and revised by 5 experts in the field. Collection of data was carried out for fifteen months from the beginning of October 2009 to end of December 2010.

Ethical consideration:-

The nature and purpose of the study was explained to the participated subjects (nursing students) in the study. All the information that is obtained from the participants was treated with confidentiality, clarification to any point of the study was provided to the participants if needed. Participants were also informed about their right to withdraw from the study at anytime without giving a reason.

Program construction:

An interactive e-learning (EBNP) educational program was developed as follows:

1-program aim

To improve nursing students 'knowledge, skills and attitudes to adopt EBNP in their daily nursing care.

2- Content

It was selected based on the program objectives &nursing student' assessment needs

The content of the program included:

1-Theortical part includes five sessions

Session (1):-included definition of, evidence based nursing practice (EBNP).nursing research, importance& aim of EBNP, and benefits...

Session (2-3-4-5):-included the different steps of evidence based practice

Step Zero: Cultivate a spirit of inquiry.

Step 1: Ask clinical questions in PICOT format. (P:patient,I:intervention,C:comparison,O:outcome,T:time needed)

Step 2-Search for the best evidence using relevant data base

Step 3--Critical Appraisal of the Evidence 3-a-Determine the level of evidence

Step 4: Integrate the evidence with clinical expertise and patient Preferences and values

Step 5: Evaluate the outcomes of the practice decisions or changes based on evidence...

Step 6--Disseminate EBP results decisions.

11-Practical part includes nine sessions:

Session (6-7) formulate questions using PICOT format.

Session (8-9-10) search for best evidence using relevant data base in the internet &library.

Session (11-12) critical appraisal of researched evidence articles.

Session (13-14):

a-Integrate the evidence with clinical expertise and patient preferences and values.

b-Evaluate the outcomes of the practice decisions or changes based on evidence...

c-Disseminate EBP results decisions

3-Teaching methods and aids:

Different teaching strategies were implemented including, demonstration using interactive e- learning education & re demonstration. Lectures, group work &discussion, case scenario, simulated real life situations

4-implementation of the program:

The program was implemented in 7 weeks by the researcher.14 sessions were scheduled 2 session /week in the morning

Assess each nursing student 'knowledge skills &attitude, to implement different steps of EBNP before conducting the program

Illustrated handout about EBNP knowledge was distributed after implementation of the program as reference.

The post training program the researcher assigned each students to find out at least 3 systematic review randomized control trial evidence artical as nursing intervention for women's problem identified by the nursing students during their clinical practice every week for six months. 2hours /week time for search data using internet database & library to find relevant evidence under supervision and guidance of the researcher. Evaluation of nursing students' knowledge, skills & attitude to adopt EBNP were carried out by the researcher after one, three & six months using the same tools of data collection to identify the retention of knowledge & changes in their attitude also to assess the improvement in their skills regarding the different steps of EBNP.

Assessment of the barriers & obstacles also the facilitating factors that help nurses to adopt EBNP in their clinical performance was carried out by the researcher after implementation of the program(December 2010). As the nursing student were graduated & working as intern nurse in Sur hospital which affiliated to Ministry Of Health.

Statistical Design:

The following statistical measures were used:

- Frequency &percentage were used for describing and summarizing categorical data.
- MH: Marginal Homogeneity test *significant at P≤0.05

- P: McNamara test *significant at P≤0.05 to compare the student nurses level of knowledge, competency skills in using different (EBNP) steps, and their attitude to adopt (EBNP)in daily nursing care before an interactive e-learning educational program implementation and after one, three and six months from the program.
- The 0.05 level was used as the cut off value (P value) for statistical significance.

3. Results

Regarding sociodemographic and biological characteristics of the studied nursing student. The current study results indicate that ages of the nursing student ranged from 20 to 25years. (11.11%) were male while (88.89%) were female the majority (.91.67 %.)Of them were single and the rest were married. Moreover more than half (52.78%) were from rural areas while (47.22%) were from urban areas.

Table (1) illustrate the percent distribution of nursing students' knowledge regarding (EBNP) before and after program implementation. It was noted that there is a highly statistical significant differences recognized between nursing students' knowledge before and after one, three and six months of program implementation because p value <0.0001. Unfortunately almost all of the study subject have wrong answer before the program regarding the different steps of (EBNP). Marked advance in the study subject knowledge to identify search strategies for finding relevant evidence literature, 22.2%,72.2%,83.3% have correct & complete answer after one, three and six months from program implementation respectively gradual improvement in their knowledge was noticed regarding appraising the literature 33.3%,44.4%,66.7%. Have correct and complete answer after one, three and six month respectively. The study subjects pointed out gradual progress regarding steps to find out relevant literature results to patient problem. 55.6%,88.9%,88.9% respectively have correct & complete answer after one, three and six months from program implementation. a significant progress in their knowledge regarding steps to evaluate the outcome of using (EBP).61%,77.8%,91.7% gave correct & complete answer after one, three and six months from program implementation respectively.

Table (2) displays percent distribution of nursing students 'searching skills regarding (EBNP).where all of the study subject have poor practice regarding different searching skills of (EBNP) before program implementation. amazingly more than three quartet of subject 77.8% have good

practice skills about identify clinical problem following a patient assessment before program implementation. Meanwhile significant improvement of almost all of the study subjects searching skills was recognized. as all of the study subject have good practice skills regarding identify clinical problem following patient assessment, formulate question based on clinical problem using PICOT format and, searching with concern to the level of evidence after six month from program implementation. moreover the majority of the study subject 94.4%, 91.7%, 91.7 respectively have good searching skills regarding use different online data base, conducts on line searches to find relevant literature to address the questions after six month from program implementation. a high significant difference was noticed between the student nurses' searching skills of (EBNP) before the program and after one, three and six months from program implementation p value <0.0001 in all searching steps.

Table (3) illustrates the relation between nursing students 'skills regarding critical appraisal of searched literature, before and after program implementation. High significant differences were observed between the study subjects appraising skills before program and after one, three and six months from program implementation p value < 0.0001 in all steps. All the study subject have poor practice skills before program implementation meantime a gradual progress in their appraising skills were noticed after one, three and point out highest improvements by six months. Where almost all of the study subject have good skills regarding appraise the evidence for reliability, validity and relevance(94.4%), critically appraise the weakness and strengths of different study design(94.4%), interpret statistical results (91,7), and understand the term used in research results (91.7%). Table (4)demonstrate the nursing students' skills regarding applying evidence based results in nursing practice almost all of the study subject have poor practice skills before program implementation. Meanwhile after program implementation a significant progress in their skills was noted until reached highest improvement by six months the majority of the study subjects have good skills regarding apply research results from the literature to the individual patient. (88.9%), apply evidence from most applicable evidence (88.9%).recognize patient needs and treatment preferences (100%) select an appropriate course of action in collaboration of the patient(91.7%) and evaluate outcome effect of evidence practice intervention & identify area for improvement(91,7%). High significant differences was observed between the study subjects skills regarding applying research results in nursing practice before program and after one, three and six

months from program implementation, p value < 0.0001 in all steps.

Table (5): Shows nursing students 'attitude to adopt (EBNP). less than three quarter (69.4%) disagree that (EBP) is considered the best guide for nursing practice before the program. no significant differences was found between their attitude before and after one moths of program implementation p value =0.505 however a significant differences was noted before and after three months p value <0.0001 and six months from program p value <0.0001.

However considering (EBNP) will improve the quality of patient care. Half of the study subject 50%disagrees before the program. marked improvement in their attitude was observed 25%, 58,3%,6309% respectively agree after one,three and six months. A significant differences was recognized before and after one, three, six months from program implementation p value =0.014.pvalue <0, 0001, p value <0.0001 Unfortunately the majority of nursing students agree that (EBNP)places unreasonable demand on nurses 91.7%,97.2%, 83.3%. respectively before and after one, three months from program implementation. no significant differences was notices p=0.317,p=0,197.

While significant differences was noted before and after six month from program p value=0.009.moreover 66.7% of them disagree that (EBNP)help nurses make decision about patient care before the program. meantime gradual improvement in their attitudes was recognized 33,3%, 63,9%, 75% respectively were agree after one, three &six months from program. a significant differences was noticed before and after one, three. six months from program as follows P value =0.023. p value0.297, p value =0.162.

The majority of the study subject 88.9%, 80, 6% before and after one month of the program prefers to use tradition nursing practices. after three and six month from program implementation 36, 1%, 61, 1% prefers to use new approaches than tradition nursing practice.

No significant differences was observed before and after one month p value =0.05.

Where significant differences was noted before and after three &six months p value=0,005.

P value <0.0001. Bringing to light 83.3%, 69.4% before and after one month of the program agree that (EBNP) have limited utility no significant differences was noted p value=0, 105, however more than half of the study subject disagree after six month of the program. significant differences was noticed before and after three,& six months of the program implementation p value =o.oo6, p value <0, ooo1.

The majority of the study subject 91.7% disagree that they need o improve their skills to

incorporate (EBNP)to their nursing practice. Marked improvement in their attitude was noticed as after six months from program 83.3% of them agree. a significant differences before and after one, three.& six months from program p value =0.oo8,p value <0.0001,p value <0.0001.almost all of nursing students disagree before and after one three, & six months from program that nurses should be responsible for conducting their own literature review also disagree to interpreting research results, take decision to apply it to their patient no significant differences was noticed p value =0.10 p value 0.125 p value =0.25.moreover the majority of nursing students 91.7% before the program disagree that they need to increase the use of evidence in their daily practice. meantime change in their attitude was recognized where 69.4% of them agree after six months. significant differences between study subject before and after one, three, & six months where p value =0.004, p value <0.0001 p value<0.0001.

Table(5) illustrates percent distribution of nursing students' total knowledge score regarding (EBP).disappointing all of nursing students before the program have poor knowledge. meanwhile advanced improvement in their knowledge was noted 55, 6%, 86.1%, 88.9% have good knowledge after one, three, six months respectively a high significant differences was observed before and after one three, &six months from program implementation p value <0.0001, p value <0.0001, p value <0.0001.

The tables also displays nursing students' total skill scores regarding (EBNP).all of nursing students point out poor practices skills before program. vast progress in their skills was secured. where 47.4% 80.6%,83.3% respectively have good skills after one, three and, six months from program implementation. high significant differences was noticed between the study subjects skills before and after one, three,& six months p value <0.0001, p value <0.0001, p value <0.0001.

Regarding nursing students' total score of their attitude about (EBNP). More than half of the nursing students 52.8% have negative attitude before the program. meantime gradual change in their attitude was recognized. As 61-3%, 75% respectively have positive attitude after three & six month from program implementation. Significant differences was realized before program and after three, and six months p value =0.115 p value =0.021.

Figure (1) shows percent distribution of perceived barriers & challenges related to intern nurses' skills to adopt (EBNP). The most frequently barriers stated by them are, insufficient time, work load pressure and competing priorities.

Table (1): Percent distribution of nursing students' knowledge regarding Evidence Based Nursing Practice

Student nurses knowledge		Pre program		After one month		After 3 months		After 6 months		Sig1	Sig2	Sig3
		No.	%	No.	%	No.	%	No.	%			
EBP definition & importance	CC	0	0.0	12	33.3	28	77.8	29	80.6	MH=5.08 P<0.0001*	MH=5.807 P<0.0001*	MH=5.824 P<0.0001*
	CI	2	5.6	18	50.0	8	22.2	7	19.4			
	W	34	94.4	6	16.7	0	0.0	0	0.0			
formulate questions based on clinical problem using PICOT forma	CC	0	0.0	28	77.8	32	88.9	33	91.7	MH=5.571 P<0.0001*	MH=5.919 P<0.0001*	MH=5.939 P<0.0001*
	CI	0	0.0	4	11.1	4	11.1	3	8.3			
	W	36	100.0	4	11.1	0	0.0	0	0.0			
Identify search strategies for finding relevant evidence	CC	0	0.0	8	22.2	26	72.2	30	83.3	MH=4.919 P<0.0001*	MH=5.616 P<0.0001*	MH=5.688 P<0.0001*
	CI	3	8.3	20	55.6	8	22.2	4	11.1			
	W	33	91.7	8	22.2	2	5.6	2	5.6			
Recognize the steps to appraise the literature	CC	0	0.0	12	33.3	16	44.4	24	66.7	MH=5.17 P<0.0001*	MH=5.674 P<0.0001*	MH=5.774 P<0.0001*
	CI	0	0.0	18	50.0	20	55.6	12	33.3			
	W	36	100.0	6	16.7	0	0.0	0	0.0			
Determine the steps to find relevant literature results to the patient's problem	CC	0	0.0	20	55.6	32	88.9	32	88.9	MH=5.715 P<0.0001*	MH=5.919 P<0.0001*	MH=5.919 P<0.0001*
	CI	0	0.0	16	44.4	4	11.1	4	11.1			
	W	36	100.0	0	0.0	0	0.0	0	0.0			
Identify steps to involve the patient in the clinical decision making	CC	0	0.0	22	61.1	32	88.9	32	88.9	MH=5.435 P<0.0001*	MH=5.687 P<0.0001*	MH=5.687 P<0.0001*
	CI	10	27.8	14	38.9	4	11.1	4	11.1			
	W	26	72.2	0	0.0	0	0.0	0	0.0			
Identify the steps to evaluate the outcome of the practice	CC	0	0.0	22	61.1	28	77.8	33	91.7	MH=5.334 P<0.0001*	MH=5.435 P<0.0001*	MH=5.556 P<0.0001*
	CI	26	72.2	14	38.9	8	22.2	3	8.3			
	W	10	27.8	0	0.0	0	0.0	0	0.0			
Identify the steps to disseminate EBP results	CC	0	0.0	21	58.3	14	38.9	8	22.2	MH=5.096 P<0.0001*	MH=4.938 P<0.0001*	MH=3.9 P<0.0001*
	CI	26	72.2	15	41.7	22	61.1	28	77.8			
	W	10	27.8	0	0.0	0	0.0	0	0.0			

Sig1: test of significance between preprogram and after 1 month ; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months MH: Marginal Homogeneity test*significant at P≤0.05; CC: correct complete answer; CT: correct incomplete answer; W: wrong answer

Table (2): Percent distribution of nursing students' skills regarding searching for Evidence.

Demonstrating nurses searching skills regarding EBNP		Pre program		After one month		After 3 months		After 6 months		Sig1	Sig2	Sig3
		No.	%	No.	%	No.	%	No.	%			
identify a clinical problem following a patient assessment	Good	28	77.8	3o	83.3	33	91.7	34	94.4	P=0.008*	P=0.008*	P=0.008*
	Fair	4	11.1	4	11.1	3	8.3	2	5.6			
	poor	4	11.1	2	5.6	0	0.0	0	0.0			
Formulate a question based on clinical problem using PICOT format to guide a literature search	Good	0.0	0.0	23	63.9	30	83.3	34	94.4	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0.0	0.0	3	8.3	2	5.6	2	5.6			
	poor	36	100.0	10	27.8	4	11.1	0.0	0.0			
Use different online database to search for the evidence	Good	0.0	0.0	10	27.8	31	86.1	34	94.4	P=0.002*	P<0.0001*	P<0.0001*
	fair	0.0	0.0	13	36.1	3	8.3	2	5.6			
	poor	36	100.0	13	36.1	2	5.6	0.0	0.0			
Searching with concern to the level of evidence	Good	0.0	0.0	22	61.1	30	83.3	34	94.4	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0.0	0.0	8	22.2	4	11-1	2	5.6			
	poor	36	100.0	6	16.7	2	5.6	0	0.0			
Conduct on line searches using database to find relevant literature to address the question	Good	0.0	0.0	22	61.1	32	88.9	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0.0	0.0	8	22.2	4	11.1	3	8.3			
	poor	36	100.0	6	16.7	0.0	0.0	0	0.0			
Find out best researches evidence to guide nursing practice decisions.	Good	0.0	0.0	12	33.3	24	66.7	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0.0	0.0	4	11.1	10	27.7	3	8.3			
	poor	36	100.0	20	55.6	2	5.6	0.0	0.0			

Sig1: test of significance between preprogram and after 1 month; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months; P: McNemar test; *significant at P≤0.05

Table (3): Percent distribution of nursing students' skills regarding critical appraisal of searched literatures

Demonstrating nurses skills regarding critical appraisal of searched literatures		Pre program		After one month		After 3 months		After 6 months		Sig1	Sig2	Sig3
		No.	%	No.	%	No.	%	No.	%			
Appraise the evidence for	Good	0	0.0	20	55.6	30	83.3	34	94.4	P<0.0001*	P<0.0001*	P<0.0001*

		Pre No.	%	1mo No.	%	3mo No.	%	6mo No.	%	Sig1	Sig2	Sig3
reliability, validity and relevance	fair	0	0.0	8	22.2	4	11.1	0.0	0.0			
	poor	36	100.0	8	22.2	2	5.6	2	5.6			
Critically appraise the strengths and weaknesses of different study designs	Good	0	0.0	21	58.3	30	83.3	34	94.4	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	5	13.9	4	11.1	2	5.6			
	poor	36	100.0	10	27.8	2	5.6	0.0	0.0			
Interpret results of statistical procedure	Good	0	0.0	21	58.3	29	80.6	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	5	13.9	4	11.1	3	8.3			
	poor	36	100.0	10	27.8	3	8.3	0	0.0			
Understand the terms used in research results	Good	0	0.0	20	55.6	31	86.1	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	6	16.6	4	11.1	3	8.3			
	poor	36	100.0	10	27.8	1	2.8	0	0.0			

Sig1: test of significance between preprogram and after 1 month; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months; P: McNemar test; *significant at P≤0.05

Table (4): Percent distribution of nursing students' skills regarding applying research results in nursing practice

Student nurses skills regarding applying research results in nursing practice		Pre program No.	%	After one month No.	%	After 3 months No.	%	After 6 months No.	%	Sig1	Sig2	Sig3
Apply evidence from the literature to the individual patient with unique characteristics	Good	0	0.0	18	50.0	26	72.2	32	88.9	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	8	22.2	6	16.8	4	11.1			
	poor	36	100.0	10	27.8	14	38.9	0	0.0			
Apply an intervention based on most applicable evidence.	Good	0	0.0	21	58.3	28	77.8	32	88.8	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	8	22.2	4	11.1	2	5.6			
	poor	36	100.0	7	19.5	4	11.1	2	5.6			
Recognize patient's needs and treatment preferences	Good	0	0.0	23	63.9	36	100.0	36	100.0	P<0.0001*	P<0.0001*	P<0.0001*
	fair	4	11.1	13	36.1	0	0.0	0	0.0			
	poor	32	88.9	0	0.0	0	0.0	0	0.0			
Select an appropriate course of action in collaboration with expert and patient	Good	0	0.0	29	80.6	33	91.7	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	0	0.0	4	11.1	3	8.3	3	8.3			
	poor	36	100.0	3	8.3	0	0.0	0	0.0			
Evaluate outcome effect of evidence practice intervention & identify area for improvement.	Good	0	0.0	28	77.8	30	83.3	33	91.7	P<0.0001*	P<0.0001*	P<0.0001*
	fair	4	11.1	6	16.6	4	11.1	3	8.3			
	poor	32	88.9	2	5.6	2	5.6	0	0.0			

Sig1: test of significance between preprogram and after 1 month; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months; P: McNemar test; *significant at P≤0.05

Table (5): percent distribution of Nursing students' attitudes towards, the use of evidence based nursing practice

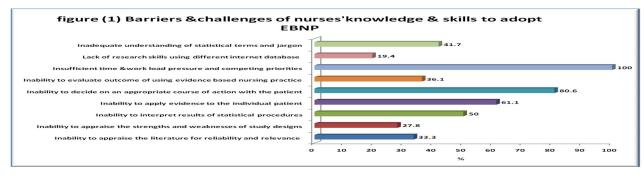| Attitude of student nurses regarding evidence based nursing practice.		Pre program No.	%	After one month No.	%	After 3 months No.	%	After 6 months No.	%	Sig1	Sig2	Sig3
Evidence-based practice is considered best guide to my practice decisions	Agree	2	5.6	5	13.9	20	55.6	27	75.0	HM=0.667 P=0.505	HM=4.158 P<0.0001*	HM=5.117 P<0.0001*
	Not sure	9	25.0	11	30.6	6	16.7	7	19.4			
	Disagree	25	69.4	20	55.6	10	27.8	2	5.6			
Evidence-based practice improves the quality of patient care	Agree	3	8.3	9	25.0	21	58.3	23	63.9	HM=2.466 P=0.014*	HM=3.713 P<0.0001*	HM=4.341 P<0.0001*
	Not sure	15	41.7	18	50.0	10	27.8	13	36.1			
	Disagree	18	50.0	9	25.0	5	13.9	10	27.8			
Reimbursement will increase with use of evidence in practice	Agree	34	94.4	32	88.9	23	63.9	28	77.8	HM=1.0 P=0.317	HM=3.024 P=0.002*	HM=2.0 P=0.046*
	Not sure	2	5.6	4	11.1	3	8.3	6	16.7			
	Disagree	0	0.0	0	0.0	6	16.7	2	5.6			
The adaptation of evidence-based practice places an unreasonable demand	Agree	33	91.7	35	97.2	30	83.3	23	63.9	HM=1.0 P=0.317	HM=1.291 P=0.197	HM=2.611 P=0.009*
	Not sure	3	8.3	1	2.8	4	11.1	7	19.4			
	Disagree	0	0.0	0	0.0	2	5.6	6	16.7			
Evidence-based practice helps me make decisions about patient care	Agree	0	0.0	12	33.3	23	63.9	27	75.0	HM=2.271 P=0.023*	HM=1.043 P=0.297	HM=1.4 P=0.162
	Not sure	12	33.3	12	33.3	10	27.8	6	16.7			
	Disagree	24	66.7	12	33.3	3	8.3	3	8.3			
Evidence-based practice take into account	Agree	9	25.0	23	63.9	29	80.6	33	91.7	HM=3.0 P=0.003*	HM=3.939 P<0.0001*	HM=5.078 P<0.0001*
	Not sure	22	61.1	7	19.4	4	11.1	3	8.3			

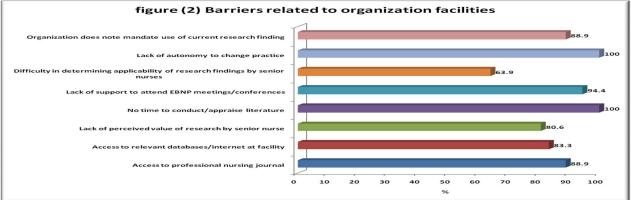| patient preferences	Disagree	5	13.9	6	16.7	3	8.3	0	0.0			
EBP does not take into account the limitations of my clinical practice setting	Agree	17	47.2	29	80.6	31	86.1	33	91.7	HM=3.054 P=0.002*	HM=3.255 P=0.001*	HM=3.153 P=0.002*
	Not sure	3	8.3	4	11.1	3	8.3	3	8.3			
	Disagree	16	44.4	3	8.3	2	5.6	0	0.0			
Strong evidence is lacking to support most of the interventions I use with my patients	Agree	8	22.2	23	63.9	19	52.8	12	33.3	HM=3.272 P=0.001*	HM=0.392 P=0.695	HM=0.762 P=0.446
	Not sure	25	69.4	13	36.1	11	30.6	3	8.3			
	Disagree	3	8.3	0	0.0	6	16.7	11	30.6			
I prefer using more traditional methods instead of changing to new approaches	Agree	32	88.9	29	80.6	16	44.4	10	27.8	HM=0.539 P=0.59	HM=0.28 P=0.005*	HM=4.264 P<0.0001*
	Not sure	0	0.0	3	8.3	4	11.1	4	11.1			
	Disagree	4	11.1	4	11.1	13	36.1	22	61.1			
I believe EBP has only limited utility.	Agree	30	83.3	25	69.4	19	52.8	11	30.6	HM=1.622 P=0.105	HM=2.774 P=0.006*	HM=4.111 P<0.0001*
	Not sure	2	5.6	4	11.1	6	16.7	5	13.9			
	Disagree	4	11.1	7	19.4	11	30.6	20	55.6			
Nurses should be responsible for critically evaluating quality of literature	Agree	3	8.3	3	8.3	10	27.8	24	66.6	P=0.375	P=0.039*	P<0.0001*
	Not sure	3	8.3	3	8.3.	2	5.5	2	5.6			
	Disagree	30	83.3	30	83.3	24	66.7	10	27.8			
Nurses should be responsible for conducting their own literature reviews	Agree	2	5.6	3	8.3	3	8.3	2	5.6	P=1.0	P=1.0	P=1.0
	Not sure	4	11.2	3	8.3	3	8.3	2	5.6			
	Disagree	30	83..4	30	83.4	30	83.4	32	88.8			
Responsibility for interpreting whether research findings apply to their individual patients	Agree	3	8.3	2	5.6	0	0	0	0.0	P=1.0	P=0.25	P=0.25
	Not sure	2	5.6	2	5.6	0	0	0	0			
	Disagree	31	86.1	32	88.8	36	100.0	36	100.0			
Literature and research findings are useful in my day-to-day practice.	Agree	2	5.6	4	11.1	17	47.2	29	80.6	P=0.125	P<0.0001*	P<0.0001*
	Not sure	2	5.6	2	5.6	2	5.6	3	8.3			
	Disagree	32	88.8	30	83.3	17	47.2	4	11.1			
I am interested to improve the skills necessary to incorporate EBNP into my practice	Agree	3	8.2	6	16.7	20	55.6	27	75	P=0.008*	P<0.0001*	P<0.0001*
	Not sure	2	5.6	5	13.9	3	8.3	3	8.3			
	Disagree	33	91.6	25	69.4	13	36.1	6	16.7			
I need to increase the use of evidence in my daily practice	Agree	3	8.3	8	22.2	16	44.5	25	69.4	P=0.004*	P<0.0001*	P<0.0001*
	Not sure	0	0	2	5.6	4	11.1	2	5.6			
	Disagree	33	91.7	26	72.2	16	44.4	9	25.0			

Sig1: test of significance between preprogram and after 1 month ; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months ; P: McNemar test; *significant at P≤0.05

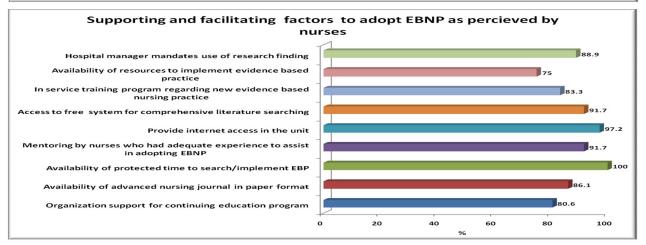**Table (6): Percent distribution of nurses' total knowledge, skills and attitude regarding evidence based nursing practice**

Variables		Pre program		After one month		After 3 months		After 6 months		Sig1	Sig2	Sig3
		No.	%	No.	%	No.	%	No.	%			
Knowledge	Poor	36	100.0	5	13.9	0	0.0	0	0.0	HM=5.346 P<0.0001*	HM=5.899 P<0.0001*	HM=5.919 P<0.0001*
	Fair	0	0.0	11	30.6	5	13.9	4	11.1			
	Good	0	0.0	20	55.6	31	86.1	32	88.9			
Skills	Poor	36	100.0	7	19.4	3	8.3	2	5.6	[MN]P<0.0001*	[MN]P<0.0001*	[MN]P<0.0001*
	Fair	0	0.0	12	33.3	4	11.1	4	11.1			
	Good	0	0.0	17	47.3	29	80.6	30	83.3			
Attitude	Negative	15	41.7	12	33.3	9	25	4	11.1	[MN]P=1.0	[MN]P=0.115	[MN]P=0.021*
	neutral	10	27.8	7	19.4	5	13.9	5	13.9			
	Positive	11	30.5	17	47.3	22	61.1	27	75.0			

Sig1: test of significance between preprogram and after 1 month; Sig2: test of significance between preprogram and after 3 months; Sig2: test of significance between preprogram and after 3 months; Sig3: test of significance between preprogram and after 6 months ; [MN]P: McNemar test; MH: Marginal Homogeneity test; *significant at P≤0.05

figure (1) Barriers &challenges of nurses'knowledge & skills to adopt EBNP

figure (2) Barriers related to organization facilities

Supporting and facilitating factors to adopt EBNP as percieved by nurses

Followed by 80.6% inability to decide on an appropriate course of action with the patient, 61.1% inability to apply evidence to individual patient

Figure (2) displays percent distribution of perceived barriers & challenges related to organization support by intern nurses to adopt (EBNP).all of nurses stated that the first challenge are lack of time to conduct searching for literature & appraise the literature also lack of autonomy to change nursing practice. 94.4% reported lack of organization to arraying (EBNP) conferences and training program.88.9% mentioned that organization does not mandate the use of current research finding. While 83.3% noted that there is lack of access to relevant data base and internet facility in their unit.

Figure (3) Presents the percent distribution of facilitating factors to adopt (EBNP) as perceived by intern nurses. The most facilitating factors noted by nurses are 100% availability of protected time to search, appraise and adopt (EBNP).97.7%provide internet access in their units. 91.7% of nurses also expected support from nursing manager to access to free system for comprehensive literature searching and mentoring by nurses who had adequate experience.88.9% hospital manager to mandate the use of research findings. 86.1% of nurses need availability of advanced nursing journal in paper form.

4. Discussion:

Nurses today remain the largest, and often most visible, group of health care professionals. In addition, nurses typically spend the most direct time with patients. "As patient needs and care environments have become more complex. Virtually maternity nurses need to attain requisite competencies to deliver high quality care. "And Competencies which need to move from a focus on just task based proficiencies to higher level competencies that provide a solid foundation for decision making in a variety of clinical situations and care settings. Indeed Participation in a "Critical Thinking Day" will engage nursing students in an innovative approach to enhance learning and improve clinical outcomes. This in turn give an opportunity for Junior nursing students to work collaboratively with a live case study that provide a solid foundation for decision making in a variety of clinical situations and care settings[20].

The importance of an interactive e- learning EBNP educational program to nursing students is multifaceted. Specific areas of EBP emphasis include efforts to improve patient care, support for nursing students training licensure, decrease reimbursement, access to current evidence-based information via available technology and resources, dissemination of knowledge, and the ability to demonstrate cost-effective care. Although each of the aforementioned areas is very important to the advancement of student nurses training, programs and continuing-education opportunities must promote these areas to better prepare nursing students to provide effective patient care and further the profession.[21,22]

Preparation of an interactive e- learning educational program to use EBNP should include integration of the 5-step process into didactic and clinical education. Nursing curricula have begun the transition toward this inclusion via educational competencies. These competencies focus primarily on developing skills in the 5 areas of EBNP: defining a clinical question, conducting a targeted literature search, critically analyzing the literature, applying clinical expertise and evidence, and evaluating the overall process. Educational Competencies required clinical skill development, critical thinking, and research as components of education curricula.. Nursing students in all clinical settings are being called upon to identify and incorporate EBNP, acquiring knowledge, skills and attitudes to practice Evidence-Based Nursing Practice. [23,24]

Concerning the effect of an interactive e- learning EBNP educational program the results revealed that, there were high significant differences between nursing students' knowledge before and after one, three, and six month of the program implementation. unfortunately all of nursing students were not knowledgeable in all steps of (EBNP) before the program this result as the study subjects did not attend any conference or training program about(EBNP) also EBNP is not existing in their nursing curriculum. the advanced improvement in their knowledge were noticed after one, three and six month as almost of them have good knowledge. this finding may be due to an interactive e- learning EBNP educational program did not only stressed on the acquisition of knowledge, but also it stressed on incorporating EBNP knowledge into nursing students weekly nursing care plan, where the study subject assess the mother condition, identify her problem ask question using PICOT format, search using different database, critique the searched literature, select an appropriate course of action in collaboration with the mothers, apply evidence from the literature to the individual patient with unique characteristics, recognize patient need and preference, evaluate outcome effect of evidence practice intervention & identify area for improvement. Therefore applying an interactive e- learning EBNP educational program for six months give opportunity to nursing student to apply EBNP knowledge into their nursing practice. These results are congruent with those of the study done by **Khan et al (2006)**[25] Putnam et al(2010)[26] and Rolloff,.et al (2010)[27] they demonstrated that both the e-learning and the standard classroom-based teaching approaches lead to an overall improvement in EBM knowledge. The e-learning group achieved high scores for overall knowledge also which in turn bring about changes in behavior, practice and outcomes evidence based practice. Substantial empirical evidence exists to support interactive teaching over didactic teaching.(Melnky **et al., 2008**[28] **Melnyk et al. 2004**[24] who reported that virtually that an e-learning course in EBM was as effective in improving knowledge as a standard lecture-based course. The benefits of an e-learning approach need to be considered when planning EBM curricula as it allows standardization of teaching materials and is a potential cost-effective alternative to standard lecture-based teaching.

Therefore, an interactive e- learning EBNP educational program is reflective of practice, it allows identification of gaps between current and desired levels of competence, it identifies solutions that are practically testable, and it allows re-evaluation with the opportunity for further reflection and continuum of learning Interactivity encourages deeper learning, which is important for understanding, manipulation and transference of learnt materials into practice.

Regarding nursing students' searching skills, critical appraisal of searched literature, and applying searched results to the individual patient, the majority of the study subjects have poor skills before the

program. However more than three quarter have good skills regarding identifying clinical problem following assessment. This result due to that nursing students are trained on this steps in fundamental of nursing course in the nursing process curriculum. Meantime after the program implementation almost all of nursing students have good skills in all steps of EBNP throughout the six month from program implementation. this results revealed significant differences between nursing students' EBNP skills before and after program implementation for six months. this results is due to acquisition of skills is not enough, it must be applied into daily nursing practice to improve the core competence of nursing skills. the interactive e learning educational program help the nursing students to apply the learned skills into their weekly nursing practice for six month from the program implementation. This result is in consistent with the study done by **khan.et al 2006** [25] **and YA-WEN CHIU et al (2010),** [29] **Koehn et al (2008)** [30] **McCurry et al.**

2010[31] –who reported that nurses in clinical settings need to be Computer-based education which have an effective approach that can be used by nursing leaders in health care organizations to educate and engage nurses in EBP initiatives and research utilization. Help nurses to use research findings and incorporate EBNP into their nursing practice to promote positive patient outcomes which improve their competence skills to use EBP in their daily clinical nursing care˙, Nursing students must learn to critically evaluate and apply research findings to prepare for professional practice. To connect research and EBP, the focus of a baccalaureate research course was changed from a traditional format to one of evidence appraisal and synthesis. Using an approach that incorporated in service-learning and collaborative learning resulted in a new hybrid course that provided students with an opportunity to apply concepts in the real world These results are congruent with those of the study done by **Hart. *et al* (2008)** [33] who reported that Statistically significant differences in perceptions of knowledge, attitude, and skill level,

As well as beliefs were found after nurses participated in the computer based education intervention. Although nurses indicated having positive attitudes about using research to support best nursing practice, gaps in knowledge and skills in retrieving research publications, evaluating the evidence, and incorporating the evidence into practice remain.

Respecting nursing students' attitudes toward using of EBNP. The current study results revealed that there were statistically significant differences between nursing students ' attitudes

before and after one, three, and six months from program implementation..

However prevailing attitudes by most of the respondents' are more than half of them have negative attitude before program moreover gradual change in their attitude toward positive was noted after one, three, and six months. Where three quarter after six months from program point out positive attitude. Bring to light the majority of respondent are agree that EBNP are considered to be the best guide to nursing practice, and EBNP improve the quality of patient care, also they prefer to use new approaches as EBNP instead of using tradition methods, they state that they need to improve their skills to incorporate EBP into their daily nursing practice. this finding can be explained that acquiring knowledge and skills about EBNP give them the confidence in their decision making regarding nursing practice, in turn affect their attitude in a positive way.

In spite of this results after 6 month from program implementation. more than three quarter believe that reimbursement will increase with the use of EBNP, also the majority agree that the use of evidence based practice does not take into account the limitation of clinical practice sittings. Moreover all of the study subject disagree that they are responsible for interpreting the research results and apply the finding to the individual patient. this finding are due to that junior nurses need more supervision and mentors by expert nurse & education faculty to adopt EBNP in their daily nursing care. this result is inconvenience with **Melnyk et al(2010),**[32] and **Fineout-Overholt . et al(2008)**[28] swho stated that many nurses have negative attitudes toward research, in large part due to the manner in which they were taught research in their educational programs. Also nurses' beliefs about evidence-based practice are significantly correlated with evidence-based practice implementation and that having a mentor leads to stronger positive beliefs and greater implementation by nurses as well as greater group cohesion, which is a potent predictor of nursing turnover rates.

Supporting the finding of, **Hart, et al,.(2008**[33] who reported that Statistically significant differences in perceptions of knowledge, attitude, and skill level, as well as beliefs about organizational readiness were found after nurses participated in the computer-based education intervention. Although nurses indicated having positive attitudes about using research to support best nursing practice, gaps in knowledge and skills in retrieving research publications, evaluating the evidence, and incorporating the evidence into practice remain among new nurses,

Concerning barriers that perceived by nurses to adopt EBNP in daily nursing care

The result of the current study regarding nurse's knowledge and skills, almost all of the barriers noted by nurses are insufficient time, work load pressure and competing priorities, followed by inability to decide on appropriate course of action with the patient, inability to apply the research results to the individual patient with unique characteristics.

Regarding the barriers related to organization support & facilities, almost of all nurses indicate that the major barriers are lack of protected time to conduct different data base search & appraise the literature. followed by lack of autonomy to change nursing practice, lack of organizing EBNP conference & education program, lack of access to professional nursing journal, administrative leaders does not mandate the use of current research finding, lack of access to relevant data base / internet facility and lack of perceived value by senior nurses. In this regards **Solomons,** *et al*, **(2011)**[34.] Dawes **et al.,** (2010),[35]highlighted the major barrier to adopting EBP are lack of time, lack of authority to change practice; organizational cultures rewarding routine, task-based practice; misconception about evidence-based practice; lack of administrative support; lack of mentorship; insufficient administrative support and resources at the point of care lack of access to resources; poor understanding of statistics and critical appraisal; unclear workplace expectations; and inconsistent basic knowledge and experience with research, traditional approaches to teaching healthcare students the rigorous process of how to do research rather than how to use research to guide best practice. No internet available in the unit‖;cost of Implementing new ideas‖; and need access to full text articles.

Related to the facilitating factors that pertinent to the nurses' concern to adopt EBNP are availability of protected time to search and implement EBNP, Provide internet access in the unit, access to free system for comprehensive literature searching, mentoring by nurses who had adequate experience to assist in adopting EBNP, In service training program regarding new evidence based nursing practice Organization support for continuing education program including EBNP, Hospital manager mandates use of research finding in nursing practice. And Availability of resources (materials& equipment) to adopt evidence based practice

Supporting the finding Cullen, **et al.,** (2011)[36]**,** Gwent and Wallening (2010)[37]results reported that.

A healthcare culture focused on excellence and world-class patient care requires that nursing research and EBP are integrated into the professional practice model and nursing care delivery. To achieve this, it requires the development of staff expertise, time allocation for staff to participate in scholarly activities, resources that support EBP and research, and expert consultants in EBP and nursing translational research. also arranging EBP training and providing time off from work for nurses to learn and implement new techniques.. Clearly indicated a desire to increase their knowledge and skills associated with understanding and using research to enable them to incorporate evidence-based practice. Learning opportunities and mentorship were viewed as facilitators for research utilization, moreover provide staff with resources in order to translate research and deliver EBP and the multiple initiatives in disseminating evidence to the point of care

5. Conclusion:

The main finding concluded that nursing students lacked the basic knowledge regarding EBNP; moreover they point out poor skills and have negative attitudes regarding EBNP. In spite of this fact significant progress in nursing students 'knowledge, skills. and attitudes was observed after one, three, and six month from program implementation. High significant differences was noticed between nursing students' knowledge and skills before program and after one, three, & six months. On the other hands there is no significant difference between study subject attitude before and after one month from program implementation. Meanwhile their attitude gradually changed to positive so significant differences was found between nursing students' attitudes before program and after three, & six months. Bring to light the study subject are facing some barriers to adopt EBNP which are insufficient time to search and appraising the literature, lack of autonomy to change practice, lack of in service training program about EBNP,and organization does not mandate the use of EBP in hospital.. Moreover they mention different facilitating factors to adopt EBNP as availability of protected time to search and critique the research results, access to free system for comprehensive literature searching, and monitoring by nurses who had adequate EBNP experiences. High light the graduate programs need to offer a foundational course in EBNP and integrate EBNP throughout clinical specialty courses in order for advanced practice among nursing students to implement this type of care upon entry into professional practice. There are a need to educate faculty to become proficient in EBNP as knowledge of EBNP is highly related to its teaching and incorporation into graduate education

Recommendations:

In the light of the study results, it is recommended that:

1- Incorporating (EBNP) in the basic nursing curriculum to help professional nurse acquire the

essential knowledge and skills to adopt EBNP in their daily nursing practices.

2- Nurse educators must work with managers to address organizational barriers and proactively support Evidence-Based Nursing Practice.

3- Heath care administrative leaders support through creating strategies for policy change role to mandate the use of EBNP and develop an evidence based health system.

4- Conduct In service training program for all nurses regarding EBNP.

5- Areas for future needed research

A-assessment of maternity nurses 'knowledge, skills and attitudes regarding EBNP in different sittings

B-assessment of the barriers to adopt EBNP among different levels of nursing.

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