

## Nurses' perceptions of evidence-based practice: a quantitative study at a teaching hospital in Iran

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### Abstract

**Background:** Evidence-based practice (EBP) provides nurses a method to use critically appraised and scientifically proven evidence for delivering quality health care and the best decision that leads to quality outcomes. The purpose of this study was to measure the practice, attitude and knowledge/skill of evidence-based practice of nurses in a teaching hospital in Iran.

**Methods:** This cross-sectional study was conducted in 2011. The study sample was composed of 195 nurses who were working at the Fatemeh Zahra Hospital affiliated to Bushehr University of Medical Sciences (BPUMS). The survey instrument was a questionnaire based on Upton and Upton study. This tool measures Nurses' perceptions in the three sub-scales of practice, attitude and knowledge/skill of evidence-based practice. Descriptive statistical analysis was used to analyze the data. Pearson correlation coefficients were used to examine the relationship between subscales.

**Results:** The overall mean score of the evidence-based practice in this study was  $4.48 \pm 1.26$  from 7, and the three subscales of practice, attitude and knowledge/skill in evidence-based practice were,  $4.58 \pm 1.24$ ,  $4.57 \pm 1.35$  and  $4.39 \pm 1.20$ , respectively. There was a strong relationship between knowledge and performance subscale ( $r=0.73$ ,  $p < 0.01$ ).

**Conclusion:** Findings of the study indicate that more training and education are required for evidence-based nursing. Successful implementation of evidence-based nursing depends on organizational plans and empowerment programs in hospitals. Hence, hospital managers should formulate a comprehensive strategy for improving EBP.

**Keywords:** Evidence-based practice, Nurses, Teaching hospital, Bushehr University of Medical Sciences.

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### Introduction

In health care, evidence is defined as availability of knowledge to decision makers and provides scientific assessment of performance. Evidence-based practice (EBP) has emerged as a marker for quality of care (1). Initially, this concept became popular in healthcare organizations in UK. The UK National Health System (NHS)

emphasized on the modern, reliable and high quality ensured healthcare services (2). EBP is critical to improve quality of health care (3). EBP is clinical decision making process through the integration of the best research evidence considering the patient values, and the clinical experts' views (4). It is a framework to response to clinical questions through the assessment

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and applying the best knowledge related to patient, unit and clinical procedures (5). EBP combines patient values and specific clinical circumstances with the best researches' evidence in clinical decisions (4). Accomplishment of clinical effectiveness through EBP in the health care organizations is necessary in the modern world (6). EBP is composed of five steps, including: asking answerable questions in specific clinical situations, finding the best evidence, appraising evidence critically and applying evidence with patient's preferences in clinical decision making and evaluating or assessing the effectiveness and efficiency of process (7). EBP also involves five training steps: ask, find, evaluate, use and analyze/adjust which are known as the key skills acquired during the training course of professional decision making (8). Nurses in healthcare organizations should use EBP and research findings to assess their skills, develop and implement policies and procedures, and perform effective clinical interventions to provide care plan to improve positive outcomes for patients (9). Improving patient outcomes will be achieved if they use the best research evidence in nursing care (3). Implementation of EBP in healthcare organizations is known as a challenge of the nursing practice. A complex set of skills including formulate questions that arise during the work and capability to do research about that, evaluate information, appraisal information critically and implementation of the outcomes in patient care process is required to use this knowledge (6). International Council of Nurses (ICN) has obliged nurses to participate actively in research and applying this research to develop EBP (10). It said that there are benefits for EBP such as improving quality of care and its outcomes, positive results in clinical practice and patient care outcomes, nurse satisfaction and standardizing the care (11). However, implementation of evidence-based practice has been challenging (12). Unfortunately, just a small percentage of nurses are working in the context of EBP (13). There are

several reasons why nurses do not use evidence in their routine practices, such as lack of awareness of research, lack of skills to evaluate quality of research, lack of access to related information. Also there is no association between nurses' perception of the level of knowledge and skills related to EBP (15). Numerous studies in Iran and other countries have focused on EBP in nursing. For instance, Upton (1999) in a convince sample of nurses, midwives and health visitors in UK found that attitudes toward evidence is more than knowledge/skills related to EBP (26). The results of Parvikof et al. indicated that nurses often have received information from colleagues on journals articles. In this study, more than half of nurses have not applied research reports in clinical decisions and also, 82% of them have never used the hospital library (27). In a study in Iran conducted by Valizadeh, the major participated nurses (80.6%) had not passed any research skills test to be qualified as a nurse (14). According to the results of Hajbagheri study, very little evidence from research is used in nursing care. He noted that nurses have difficulty with understanding the importance and application of research findings (15). On this basis, the researchers intended to examine nurses' perceptions of EBP, including practice, attitude and knowledge/skill of EBP at a Teaching hospital in Iran.

### Methods

This cross-sectional study was conducted in 2011. The study sample was recruited from all nurses who worked in Fatemeh Zahra teaching hospital affiliated to Bushehr University of Medical Sciences. A total of 195 nurses who completed questionnaires participated in this study. Response rate was 68%. Data collection instrument was Evidence Based Performance Questionnaire (EBPQ) based on Upton & Upton study (2006). It measures the perception of nurses on evidence based performance. The EBPQ is a 24- item scale constituted of three parts (subscales). The

first part included 6 items related to nurses' practice. A seven point Likert scale, ranging from 1=never to 7= always was applied to gauge the nurses' toward performance. The second part, assessed the attitude of nurses' (4 items). These items were on a 7 point spectrum ranging 1= negative to 7= positive. The last part included 14 items and examined nurses' knowledge via a 7 point Likert scale from 1= weak to 7= strong. To prioritizing items presenting as the top learning needs, the percentage of respondents choosing the low response categories (1 - 4) in each subscale were considered as "response pattern". The means were then ranked, with 1 representing the highest priority for intervening.

After acquiring permission from questionnaire original developers, it was translated and back translated and then its validity and reliability were examined. Content validity was established using a peer review method. Cronbach's alpha was calculated for determining the internal reliability of the total scales; 0.84 for practice, 0.68 for attitude, and 0.87 for knowledge/skills of EBP subscales. Data analysis was performed using SPSS v.16. Descriptive and analytical statistics were applied. Frequency, relative frequency, cumulative frequency and mean were calculated for descriptive data analyses. Pearson correlation was used to assess the relationship between practice, attitude and knowledge/skills sub-

scales. In all analytical procedures, a p-value of <0.05 was considered as significant.

## Results

A total of 195 nurses working in a teaching hospital in south of Iran participated in this study. Table 1 shows the demographic characteristics of the participants. Based on this table, the majority of participants were between 30 and 39 years, female, nurses and contract employment.

As the results are shown in Table 2, practice had the highest mean score ( $4.58 \pm 1.24$ ) and then attitude ( $4.57 \pm 1.35$ ), followed by knowledge/skills ( $4.39 \pm 1.20$ ). Sharing information with colleagues in the "practice" subscale had the highest mean score. The three top priorities of this subscale were including: the critically appraising of the evidence, tracking down the relevant evidence and formulating questions to be answerable, respectively. The top item with the highest priority for the "attitude" subscale was sticking to tried and trusted methods rather than changing to anything new. At this subscale, "welcome questions on my practice" instead of being annoyed when questioned them had the highest mean score. And finally, for the "knowledge/skills" subscale, sharing ideas and information with colleagues were accounted for the highest mean. The top three priorities of this subscale were including

Table 1. Some demographic characteristics of participants

Respondents' Characteristics	frequency	percent
Age	20-29	47.2
	30-39	36.4
	40-49	14.4
	>50	2
Sex	male	25.1
	female	74.9
Position	Head nurse	9.2
	Supervisor	4.1
	nurse	47.7
	nurse-aid	25.7
	technician	13.3
Employment Status	official	23
	contract	56.9
	Contractual	13.9
	projective	4.6
	Part- time	1.6

Table 2. Findings from the EBP questionnaire

Item	N	Mean Score±SD	Response Patterns	Priority Item Rank
practice		4.58±1.24	% responding 1-4 (1, never – 7,always)	
Formulating a clearly answerable question	188	4.53±1.49	43.1	3
Tracking down the relevant evidence	189	4.52±1.43	48.7	2
Critically appraising	189	4.15±1.62	60.3	1
Integrating the evidence	189	4.63±1.51	39.7	4
Evaluating the outcomes of practice	183	4.91±1.49	33.3	5
Sharing the information with colleagues	181	4.90±1.62	33.1	6
Attitude		4.57±1.35	% responding 1-4 (1, negative – 7, positive)	
making the time to keep update new evidence instead of insufficient time due to workload	182	4.08±1.78	51.9	3
Resenting when my clinical practice questioned instead of welcoming them	179	5.11±1.77	50	4
Being EBP a waste of time instead of fundamental to professional practice	182	3.91±1.79	57.7	2
Sticking old ways versus change my practice	182	2.88±1.78	78	1
Knowledge/Skills		4.39±1.20	% responding 1-4 (1, poor – 7,best)	
Research skills	193	3.54±1.60	69.4	1
IT skills	194	3.91±1.54	61.9	2
Monitoring and reviewing of practice skills	191	4.08±1.51	55.5	5
Converting your information needs into a research question	193	4.09±1.52	61.1	3
Awareness of major information types and sources	191	4.10±1.46	59.2	4
Ability to identify gaps in your professional practice	191	4.47±1.44	47.1	7
Knowledge of how to retrieve evidence	191	4.46±1.53	46.1	8
Ability to analyze critically evidence against set standards	188	4.26±1.48	50	6
Ability to determine how valid (close to the truth) the material is	193	4.66±1.52	40.9	10
Ability to determine how useful (clinically applicable) the material is	193	4.59±1.42	43.5	9
Ability to apply information to individual cases	189	4.76±1.49	36.6	12
Sharing of ideas and information with colleagues	193	4.95±1.58	31.1	14
Dissemination of new ideas about care to colleagues	190	4.72±1.55	39.5	11
Ability to review your own practice	193	4.89±1.57	35.2	13

Table 3. The correlation between dimensions of EBP perceived by nurses

dimensions	Practice		attitude		knowledge	
	coefficient	p	coefficient	p	coefficient	p
practice	1		0.222	0.004	0.734	<0.001
attitude			1		0.443	<0.001
knowledge					1	

p&lt;0.01

research skills, information technology skills and information needs into a research question, respectively.

According to Table 3, the strongest relationship for the dimensions of EBP was between practice and knowledge/skills. Also there was a significant relationship between attitude and practice as well. Mean-

while there was no significant relationship between practice and attitude.

### Discussion

This study was designed to assess the nurses' perceptions of EBP. Based on our findings the overall mean score for the EBP among nurses was at moderate level (4.48

from 7). In this regard, the mean score of practice and attitude subscales were higher than the knowledge/skills subscale. The findings are consistent with Upton's findings founded that attitudes toward evidence were more than knowledge related to EBP (16). Similarly, these are compatible with Koehn and Lehman's study that participants obtained average score on the practice and attitude to EBP. (17). Stichler et al also founded that subjects who positively viewed EBP, their attitude toward EBP was more positive than their knowledge/skills and practice of EBP (18). In Mehrdad's work, despite having positive attitude the majority of nursing faculties had an average level of knowledge (19). A cultural change is necessary to establish EBP including patient care, education and management in clinical healthcare organizations (20). The change in the culture which will in turn increase the use of evidence-based practice (21).

This research has provided guidance for practitioners by prioritizing dimensions of EBP. In practice subscale, evidence appraising critically had the highest priority which is in contrast with Brown's study (22). Additionally, our findings showed that nurses need skills to evaluate evidence critically prior to they apply the best evidence in their professional practice. It is said that teaching critical appraisal skills improves both knowledge of methodological and statistical issues in clinical research and also attitudes toward medical literature (23). Therefore, educational interventions to familiarize nurses with EBP steps including formulating questions to be answerable, critically evidence evaluating and its use in performance seems to be essential.

According to the finding in the attitude dimension, nurses had a positive attitude to EBP. The finding is consistent with the work of researchers which participants had the positive attitudes to research associated with little use of findings in clinical practice in several studies (14,24-25). In our study, nurses tend to use tested procedures and techniques versus changed way in their

performance. This issue in Brown's study (22) is placed in second rank order. Also, they considered EBP as waste of time rather than consider it as a necessity in their professional practice. Brown et al has found this subject as the last priority. Furthermore, they have not devoted enough time to EBP due to work load. As Ubbink cited, the EBP implementation needs a multilevel approach, including interventions in the policy-making, managerial, educational and practical level (20). In addition, creating a competitive environment to do research, using the best evidence in practice, commitment and support of top management can be beneficial.

The findings of this study for skill dimension showed that research skills, information technology skills and converting the information needs into a research question was the first three priorities for intervention. These factors have been second, fifth and first priorities in Brown's study (22). To be successful in moving evidence into nursing practice, adopting teaching strategies of EBP must include an evidence-based approach across the curriculum in schools of nursing (26). These strategies must include skills in asking focused clinical questions, searching electronic databases for evidence, and ensuring that the published evidence fits with their clinical situations and can justify a change in their practice (26-27).

In this study, the strongest relationship for the EBP factors was between practice and knowledge/skills associated with EBP. This is in line with Brown's study. Several studies have shown that promoting knowledge through educational interventions can help EBP improvement (22). Therefore, it is recommended EBP training program as one of the key elements be included in the hospital's strategic plan and its impact on improving their performance be monitored and evaluated. In this regard, more research is needed to assess the potential impact of specific educational interventions on the successful implementation of EBP.



To sum up, nurses in this study considered EBP as a main factor to promote patient care. Suitable training in knowledge, attitudes and skills are the basis for an EBP approach (28). As EBP is a multistep process, nurses need sufficient time to identify clinical issues, translate these issues into clinical questions, find the best available evidence through literature, appraise evidence critically, adopt an intervention, and evaluate the effectiveness of these interventions. It's better to hospital management make necessary adjustments in nurses work schedule to ensure sufficient time for them to learn and implement EBP (24).

### Conclusion

Based on our findings, nurses' perceptions of EBP was at average level. The ultimate goal of EBP is to ensure patient receive the best outcome. In fact, success in implementation of EBP depends on nurse's practice, attitudes and knowledge/skills in healthcare. In other words, without the use of the best evidence, nursing care becomes outmoded. Thus, actual implementation of EBP needs some intervention such as: applying educational policy, providing opportunities for studying, reviewing existing teaching methods of nursing education and institutionalizing inter-professional education. Furthermore, the role of organizational and managerial variables in successful implementation of EBP should not be ignored. Indeed, equitable distribution in compliance with the standard of nurse per patient provides sufficient time to find and appraise the application of research findings in practice and care. Therefore, investigating the factors affecting the use of EBP is recommended for future studies.

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