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Individual Potentials Related to Evidence-Based Nursing among Nurses in Teaching Hospitals Affiliated to Tabriz University of Medical Sciences, Tabriz, Iran

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ABSTRACT

Introduction: Knowledge, attitude, and skills of nurses regarding evidence-based medicine are some of the important individual potentials in the implementation of these cares. There is no evidence indicating Iranian nurses to have these individual potentials. Therefore, the aim of this study was to determination the perceptions of nurses about individual potentials in evidence-based nursing and its related factors. ***Methods:*** In this descriptive correlational study, all nurses (n = 600) working in teaching hospitals affiliated to Tabriz University of Medical Sciences, Tabriz, Iran were included. Valid and reliable translated questionnaires were used to collect data. Descriptive and inferential statistics were employed in SPSS to analyze the data. ***Results:*** Based on our findings, moderate levels of knowledge, attitude, and skills were possessed by 274 (45.7%), 394 (65.7%), and 411 (68.5%) nurses, respectively. In addition, male nurses (p = 0.002) and those with a master's degree (p = 0.001) were more knowledgeable. Likewise, more positive attitudes were demonstrated by females (p = 0.004) and nurses with a master's degree (p = 0.04). A statistically significant difference was found between skills and employment status of nurses (p = 0.002). ***Conclusion:*** The moderate level of attitude among nurses can provide a good potential in promoting evidence-based nursing in teaching hospitals affiliated to Tabriz University of Medical Sciences. Therefore, more attention should be paid to enhance the awareness and skills of nurses toward evidence-based care.

Introduction

Nurses, as the largest group of health assistants, have an important role in promotion and preservation of health in every society.[1] Their area of caretaking undergoes constant changes. One of the most important changes in the field at the end of the 20th century was the appearance of evidence-based nursing. Although Florence Nightingale and Virginia Henderson developed nursing based on their research, nursing has been traditionally growing mainly based on views not related to research results.[3]

Evidence-based nursing is a method of problem solving similar to nursing combined with the support of research, values, beliefs, and preferences of patients.[4] Performing this type of caretaking consists of four main stages of turning the clinical scenario into a systematic question which can be answered, searching literature for the best evidence to answer the question, critical evaluation of the evidence, and adding the results of the as-

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sessment to the clinical performance.[5] Evidence-based nursing is not just the plain usage of research results, it also consists of other dimensions of clinical decision making such as clinical experiences and patient values.[6]

In recent years, action based on evidence has been proposed as the best standard for the inspection of quality of nursing care.[7] Evidence-based nursing has decreased the time of nursing care. On the other hand, the effectiveness of the provided care has been increased as a result of simplifying care through the elimination of unnecessary, obsolete and ceremonial actions, and also by the acceptance of effective caretaking.[8]

Therefore, health policy makers have recently emphasized evidence-based care as a way to improve care standards and to promote health services.[1] However, many obstacles, including lack of organizational support,[9,10] lack of related expertise,[11] and poor attitude of nurses,[12] have been imposed to the field. Such obstacles have inhibited evidence-based nursing from finding its real place even in developed countries.

Previous Iranian studies have clearly demonstrated the need for evidence-based nursing. For instance, Jolayi et al.[13] and Hagigei[14] found a significant percent of patients not to be satisfied with the quality of nursing care. Similarly, Edib Hajbagheri[1] and Nasrabadi[15] stated lack of evidence-based care as one of the major nursing problems in Iran. In fact, taking a qualitative approach, Edib Hajbagheri found the majority of their participants to be hearing the term "evidence-based care" for the first time.[1] Despite the positive effects of evidence-based nursing on health services, no research, except for the study of Edib Hajbagheri,[1] has been performed to determine its status among Iranian nurses. The various aspects of the method are therefore not fully understood. On the other hand, Edib Hajbagheri reported the some prerequisites or potentials of evidence-based care, called individual potentials, to be dependent on nurses in Iran.[1] Individual potentials mainly point to factors such as knowledge and attitude of nurses toward research and evidence-based care, and skills in searching reliable sources.[16,17] Therefore, the main goal of this study was to determine the attitude, knowledge and skill of nurses toward individual potentials in evidence-based nursing. Moreover, the relations between these individual potentials and some socio-personal and professional characteristics of nurses were determined.

Materials and methods

This descriptive study comprised all nurses who were employed in one of the teaching hospitals affiliated to Tabriz University of Medical Sciences (Tabriz, Iran) as a nurse, manager of nursing services, teaching supervisor, clinical supervisor, head of nursing, or infection control nurse during 2010. Individuals with at least 3 years of clinical work experience were included if they had a bachelor's or a higher degree. The sample size was calculated at around 570 people according to the pilot study which was increased to 600 because of the possibility of sample loss. Since the total number of nurses was equal to 615, they were all evaluated. Finally however, the data of 600 nurses was analyzed due to incompleteness of 15 questionnaires.

In order to collect data, the current study used a questionnaire consisting of four parts. The first part of the questionnaire comprised socio-individual and professional characteristics of nurses, while the second part included items according to general practitioners' perception of the route to evidence-based medicine (McColl et al.[18]). McColl et al. designed a 29-item questionnaire in which scores of 0-9, 10-19, and 20-29 respectively represented low, moderate and good levels of knowledge.[18] In the third part of the questionnaire, the evidence-based practice attitude scale (EBPAS) was used to determine the attitudes of nurses. EBPAS was developed by Aarons[19] as 11 multiple-choice items based on a Likert scale from 1 (completely disagree) to 5 (completely agree). Scores of 11-25, 26-40, and 41-55 respectively represented poor, moderate, and good attitudes.[19] Finally, the fourth

part embraced the evidence-based practice questionnaire for nurses (Upton).[10] This 14 multiple-choice-item questionnaire evaluates the skills of nurses in evidence-based nursing. According to a Likert scale, the skills are ranked from beginner (1) to highly skilled (5). Scores of 14-33, 34-51, and 52-70 classify nurses as respectively weak, moderate, and skilled.

To use the questionnaire, first the questionnaires were translated into Persian and the accuracy of their translation was determined by two English language and literature specialists. The questionnaires' face and content validity was assessed by 14 faculty members of the Department of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran. Any modifications suggested by the experts were applied accordingly. Then, using Cronbach's alpha, the reliability of the questionnaire was determined through a pilot study on 15 nurses. The coefficients were calculated as 0.93 for the knowledge, 0.89 for the attitude, and 0.90 for the skill questionnaires. Cronbach's alpha for the whole questionnaire was also determined as 0.92 which represents a satisfactory level of reliability.

To collect data, the researchers introduced themselves to nurses eligible for the study in different hospital wards. After contacting each nurse, they were all informed of the goals of the study and the rights of the participants. An informed consent was gained and then the questionnaires were given to the nurses. Participants were asked to return the completed questionnaires either at the time they received it (if they had the time and were willing to) or during their next working shift. Moreover, in order to reach all nurses during different working shifts, the researchers visited the nurses.

The data was analyzed by the $SPSS_{17}$. To describe socio-personal and professional characteristics, knowledge, attitude, and skill in evidence-based nursing, descriptive statistics, such as frequency, percentage, mean, and standard deviation, was used. To assess the relations between some socio-personal and professional characteristics of nurses and their knowledge, attitude, and skill toward evidence-based nursing, the t-test with independent samples and analysis of variance (ANOVA) were used.

Results

In this study, the participants were mainly female nurses, with a bachelor's degree. They were most contract employees and clinical nurses with a mean age of 34.7 ± 7.0 years. They had worked for a period of 10.5 ± 6.8 years. The participants scored 14.3 ± 8.1 in knowledge of the individual potentials effective on evidence-based nursing. In addition, 151 nurses (25.2%) presented a good level of knowledge while 274 (45.7%) and 175 (29.2%) nurses had moderate and weak levels of knowledge, respectively.

On the other hand, mean score of attitude was 32.9 ± 8.0 with 205 (34.2%), 394 (65.7%), and 1 (0.2%) nurses demonstrating respectively good, moderate, and poor attitude toward the subject.

A mean skills score of 30.6 ± 16.5 was obtained by the participants. Good, moderate, and weak skills were observed in 50 (8.3%), 411 (68.5%), and 139 (23.2%) nurses, respectively.

The relations between some socio-personal and professional characteristics of nurses and their knowledge, attitude, and skill toward the principles of evidence-based nursing care are summarized in Tables 1 and 2.

Table 1. The relations between some socio-personal and professional characteristics, knowledge and attitude of participants toward evidence-based nursing

Variable	Groups	Knowledge	Statistical indicators	Attitude	Statistical indicators
Gender	Male Female	16.3 (8.3) 14.0 (8.1)	t = 2.33 df = 598 p = 0.002	30.4 (7.6) 33.3 (8.1)	t = -2.92 df = 598 p = 0.004
Education degree	Bachelor's Master's	13.9 (8.1) 22.6 (8.8)	t = 5.43 df = 598 p= 0.001	32.9 (8.1) 33.5 (7.3)	t = -2.5 df = 598 p = 0.04
Occupational status	Official Temporary Experimental Contract	13.8 (8.2) 14.8 (8.0) 16.1 (6.9) 11.9 (9.3)	F = 2.05 df = 3 p = 0.10	31.7 (7.9) 34.2 (8.0) 34.2 (7.4) 30.2 (8.2)	F= 1.61 df =5 p = 0.16
Age	20-35 50-36 Above 50	13.0 (8.3) 14.7 (7.9) 12.7 (8.8)	F = 0.99 df = 2 p = 0.42	32.9 (8.3) 33.0 (7.8) 32.1 (8.1)	F= 0.16 df = 2 p = 0.84
Work experience	1-10 years 11-20 years 21-30 years	14.1 (8.3) 14.8 (7.2) 14.9 (9.2)	F= 0.42 df = 2 p = 0.65	33.1 (8.3) 32.6 (7.6) 32.8 (8.1)	F= 0.15 df = 2 p = 0.85

Data is presented as mean (SD)

Table 2. The relations between some socio-personal and professional characteristics and skill of participants toward evidence-based nursing

Variables	Groups	Skill	Statistical indicators
Gender	Male Female	29.4 (18.1) 30.8 (16.3)	t = -1.68 df = 598 p = 0.49
Educational degree	Bachelor Masters	30.5 (16.3) 33.6 (21.6)	t = -0.94 df = 598 p = 0.34
Shift schedule	Fixed Circulating	27.3 (17.6) 31.6 (16.1)	t = -2.71 df = 598 p = 0.007
Occupational status	Official Temporary Experimental Contract	28.2 (17.07) 33.4 (15.5) 28.0 (16.2) 27.4 (17.9)	F = 5.1 df = 3 p = 0.002
Age	20-35 35-50 Over 50	30.8 (16.2) 31.0 (16.6) 25.1 (17.7)	F = 1.78 df = 2 p = 0.16
Work Experience	1-10 years 11-20years 21-30 years	30.8 (16.2) 30.9 (16.4) 29.3 (18.2)	F = 0.25 df = 2 p = 0.77
Post	Internal Surgical Children Special Emergency Room Reception Other	29.2 (16.2) 28.9 (16.4) 29.7 (16.2) 34.0 (15.2) 28.3 (19.0) 29.2 (19.7) 27.9 (17.6)	F = 2.1 df = 6 p = 0.04

Data is presented as mean (SD)

Discussion

The results of the present study showed that the majority of nurses (45.7%) possessed a moderate level of knowledge toward evidence-based care. In European countries, the corresponding levels among the majority of nurses and other health assistants have been evaluated as high.[11,20,21] Edib Hajbageri assessed 21 nurses in Kashan, Iran, the majority of whom had never heard the term evidence-based nursing.[1] Studies on Iranian physicians have shown their knowledge of evidence-based medicine as inadequate.[22,23] Therefore, evidence-based medical procedures are at an unsatisfactory level among the whole Iranian health and treatment personnel. Knowledge is known to be the fundamental requirement of performing any measure in any specialized field. Nurses studied by Adib Hajbageri spe cified knowledge to be one of the main principles of evidence-based nursing[24] which highlights their understanding of the importance of knowledge related to evidence-based nursing.

On the other hand, 394 nurses (65.7%) had a moderate level of attitude toward evidence-based nursing. Numerous researches conducted throughout the world have reported positive attitudes towards using the principles of evidence-based medicine among nurses and other medical personnel.[9,11,20] In contrast, a few studies have shown poor attitudes toward implementing such a nursing method.[12,25] Iranian nurses[26] and physicians[22] have been found to hold a positive attitude toward using the principles of evidence-based nursing. Considering the effects of attitudes of users on the success of any program, the positive attitudes of Iranian medical personnel would promote the implementation of evidence-based medicine.

In addition, 411 nurses (68.5%) had a moderate level of skills. Researches in other countries revealed a high level of skills related to evidence-based medicine among nurses.[11,20,25] However, although no previous Iranian study has evaluated the skills of nurses in using the principles of evidence-based care, some studies reported the skills of Iranian physicians or medical university faculty members as insufficient.[22,23] Such findings can, to some extent, be representative of the low level of skills regarding evidence-based procedures among health and medical personnel of Iran.

Finally, male nurses were more knowledgeable toward evidence-based care than female nurses which might have been caused by the busier schedules of females and their more demanding family responsibilities. Likewise, nurses with a master's degree had higher levels of knowledge and positive attitudes than those with a bachelor's degree maybe due to the materials related to evidence-based medicine provided during master's courses. In addition, the attitudes of female nurses toward evidence-based medicine were more positive than male nurses. Moreover, the skills of temporary nurses were higher than other nurses probably due to their lack of definite employment status and their higher motivation to learn. Nevertheless, more research needs to be conducted on the relations between characteristics of the nurses and their knowledge of, attitude toward and skills in evidence-based nursing.

The findings of this study can be applied to improve the implementation of evidence-based nursing in Iran. According the weak levels of knowledge and skill were found among nurses toward evidence-based nursing principles, managers should promote the abilities of nurses by organizing relevant teaching courses. Moreover, given the readiness of students toward learning, the best time to teach evidence-based nursing principles is during university years. Therefore, the main plan of programmers should be the appropriate training of nursing students in evidence-based medicine principles during the bachelor's programs. Although the title currently exists in the curriculum of bachelor's course of

nursing, teachers and teaching programmers nursing must work harder to implement the evidence-based medicine principles.

In this study, the knowledge and skills of nurses toward evidence-based care were determined according to the opinions of nurses. Thus, the participants may have reported their knowledge and skills as lower or higher than the real levels. Consequently, further research is suggested to be performed to determine the levels of knowledge and skills related to evidence-based care among nurses through an objective approach and using different tests.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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