

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Status of Evidence-based Clinical Practice among Nurses of Hospitals Affiliated to Kerman University of Medical Sciences After Evidence-based Follow-up Nursing Training.

Hojat SheikhbardSiri¹, Marjan Vejdani², Yasamin Molavi Taleghani³, Hamid Salehiniya^{4,5}, Aasma Abdollahyar⁶

¹PhD Student in Disaster & Emergency Health Department of Disaster management, School of management and medical information Isfahan University of Medical Sciences, Isfahan, Iran.

² Iranian Research Center on Healthy Aging, Sabzevar University of Medical Sciences, Sabzevar. Iran

³PHD student of Health Services Administration, Health Management and Economics Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

⁴Zabol university of Medical Sciences, Zabol, Iran

⁵ Iran University of medical sciences, Tehran, Iran

⁶Master of Science in nursing orientation (internal and surgical). Ward NICU, Hospital Afzalipour, Kerman University of Medical Sciences, Kerman, Iran (Corresponding author)

ABSTRACT

Considering the complex and rapid changes occurring in the healthcare sector, there is a need for emphasizing clinical practice by the best available evidence. Evidence-based nursing has been defined as an approach to making quality decisions and providing nursing care based upon personal clinical expertise in combination with the most current, relevant research available on the topic. The present research was a quasi-experimental intervention-based study which was carried out in 2012. The statistical population included all clinical nurses in Kerman, 70 of whom were randomly selected as the sample and divided into two groups of intervention and control. During the workshops, subjects in the intervention group were trained on evidence-based nursing. The required data and information were collected using the inventory of evidence-based clinical practice. Data analysis was done using t-test and ANOVA in SPSS-17. The ability of evidence-based clinical practice in the intervention group before and after training and after a one-month follow-up was compared using paired t-test. The results showed that evidence-based nursing training increases the score of nurses on clinical practice ($p=0.007$). The results also showed that the mean scores (47.23 ± 4.14) were better after training. No significant difference was found in score of clinical practice between before the training and the follow-up period and also between after the training and after the follow-up. However, mean scores were higher in the follow-up period. The use of evidence-based nursing education, because of the strengthening and development of critical thinking and creativity, increases the ability of nurses in clinical practice. According to the findings of the present study, this approach is recommended to be used for training of nurses.

Keywords: Education; Evidence-based nursing; Nurse; Evidence-based clinical practice

**Corresponding author*

INTRODUCTION

Evidence-based practice is one of the most important issues which has found a special place in the health care systems in recent decades and people in all professions related to health have begun to work in this field. The nursing profession is no exception and many works have carried out in nursing in this regard [1]. In terms of the history of evidence-based nursing, Florence Nightingale can be regarded among the first pioneers in the field. He studied the status of public health in the community and found the gaps. Then, he collected the mortality and morbidity rates and studied the consequences of patients. In fact, he executed the same stages of evidence-based practice [2]. Evidence-based activity is a concept which was initially used in Canada for medical education with the approach of using and valuing the research findings obtained from clinical data and beliefs. Evidence-based activity is the suggestion of research data and a basis for choosing a particular performance and also the expected results. The objective of this method is to use the latest research findings with the aim of providing the highest quality in healthcare [3, 4]. Nowadays, evidence-based education has been taken into account with the aim of serious, clear, and logical use of the best evidence in making decisions about nursing education. Although the inclusion of evidence-based training programs is emphasized, it is sometimes regarded as only a professional responsibility and restricted to mere learning and there is no effect of using the teachings in clinical settings [5]. Evidence-based education acts in two main levels; first, using evidence from studies about education and related subjects and, second, proving the logical and valid evidence where the evidence is questionable, unknown or poor [6]. There are several stage in evidence-based education including changing a clinical situation into a question-and-answer structure, searching for studies to determine the best evidence in order to answer the question, precise assessment of evidence in terms of reliability and presentability, and the use of evaluation results in clinical practice [7]. Despite the favorable results obtained, evidence-based approach is not much used in education. Views and opinions of nurses, knowledge and skills related to the implementation of the method, and nursing education are of the main effective factors in the use of research results in providing different healthcare. Providing healthcare based on evidence-based approach is the basis and foundation of progressive nursing care. However, due to the lack of necessary skills, this approach is not much used [8]. Following the old and routine patterns and reduced self-esteem and confidence in the care of patients are among the consequences of non-use of evidence which can reduce the motivation of nurses to provide care and communicate with patients [1]. Evidence-based practice is a challenge for patients to provide nursing care based on professional knowledge and research findings. Nurses should be trained on how to use the research results in order to provide better care and improve its quality. Correct use of evidence and research findings leads to improved quality and also makes nurses accountable to their performance. With a holistic care approach, nurses should try to plan, execute, and evaluate the care program in cooperation with patients, instead working for them. Adequate understanding of research and evidence is one of the necessities for informed decision-making about nursing issues and improving the quality of healthcare. The benefits mentioned for evidence-based nursing include contribution to the professionalization of nursing, increasing and improving the level of nursing care, increasing the role of nurses in the decision-making, contribution to the cost saving, gaining the satisfaction of patients and those who refer to health organizations, gaining the satisfaction of health organizations and society [9]. In a quasi-experimental study conducted by Madarshahian *et al.* (2010) on 40 nursing student, two groups of common and traditional care and two groups of evidence-based care were compared with each other. The results showed that students in the evidence-based care group gained higher mean scores on patient's care [8]. In a quasi-experimental study conducted by Habibzadeh *et al.* (2012) on 48 nursing students of Nursing Faculty of Urmia University. The subjects were divided into two groups of test and control. Students in the test group received evidence-based training. The style of nursing process writing by the subjects in the test and control groups was assessed using a checklist. The results showed that skill of nursing process was significantly higher in subjects of test groups who were trained with evidence-based approach [10]. In a cross-sectional study carried out by Aghahosseini (2011) on the knowledge and attitude of nurses toward evidence-based nursing, the findings revealed that 50% if nurses have a low awareness about evidence-based nursing and 59% of them are indifferent to evidence-based nursing [11]. The study conducted by Adib (2007) showed that most of nurses participating in the study were hearing the term "evidence-based care" for the best time [12]. Other studies carried out on this issue have revealed that nurses are faced with difficulty in evidence-based practice. Most of their problems include finding the best evidence, identification of correct resources, the use of optimized searching ways, evaluation of evidence, and the use of information literacy skills. The major problem of nurses in the use of research evidence is their lack of familiarity with the design of search strategies, determination of resources and relevant databases, and critical analysis of resources [13, 14]. Given the importance of evidence-based nursing, training of nurses on this approach is of basic measures that should

be taken. The present study aims to determine the effect of evidence-based nursing education with follow-up on evidence-based clinical practice among nurses.

METHODOLOGY

The present research was a quasi-experimental intervention-based study which was carried out in 2012. The statistical population included all clinical nurses in Kerman, 70 of whom were randomly selected as the sample and divided into two groups of intervention and control. The inclusion criteria were having at least a bachelor’s degree, being in positions such as nurse, staff nurse, and head nurse, having the experience of working in all three shifts (morning, afternoon, and night), being employed as official or contractual, and not attending the similar training courses simultaneous to the workshops of this study. Providing information about training courses in the test group and enrollment were done through the official website of Kerman University of Medical Sciences. In fact, randomization of subjects in the test group was achieved through enrollment. The content of training program for gaining retraining points and administrative affairs was uploaded on the website. To assess the effect of training, classes and workshops were held. In this study, training content was presented to subjects in two days (theoretical and practical). In addition to providing theoretical materials, training scenarios were developed and presented in the problem-solving form. The part of searching the relevant nursing resources was practically provided on the websites. Pretest and posttest were performed for the test group. To assess the effect of training, the test group was followed up after a month and the questionnaires were distributed and collected again. To evaluate the ability of evidence-based clinical practice of nurses, an author-made questionnaire on evidence-based clinical practice. The questionnaire consisted of two parts of demographic information and 12 items on evidence-based practice based on a 5-point Likert’s scale (1: never, 2: almost never, 3: neither rarely nor often, 4: often, 5: always or almost always). Scores of this questionnaire ranges between 60 and 120. The reliability and validity of this questionnaire were obtained to be 0.80 and 0.85, respectively. To use this tool in the study, after reexamination and solving the problems, it was given to 10 faculty members in order to confirm its content validity. To correct the questionnaire, the options “never” and “always” were given a point of 1 and 5, respectively. The obtained data and information were presented in the frequency distribution tables (number and percent) and central and dispersion distribution (mean and standard deviation). Data analysis was done using t-test and ANOVA in SPSS-17.

RESULTS

According to the analysis of data in the test and control groups, most of the subjects were female (88.6%), had a bachelor’s degree in nursing (90%), and were in a shifting working condition (88.6%). In addition, the results showed that most of them were employed as contractual (68.3%), were in the age range of 31-40 (51.4%), had 1-5 years of service (53%). Comparison of clinical practice in the test group before and after training and a one-month follow-up was done using ANOVA with repeated observations [1].

Table 1: Comparison of clinical practice in the test group before and after training and a one-month follow-up

Level of significance	Standard deviation	Mean	Group	n
0.04	12.07	85.34	Intervention (pretest)	35
	7.04	92.43	Intervention (posttest)	35
	5.74	89.20	Intervention (follow)	35

Comparison of mean score of clinical practice in the test group before and after training, before training and after the one-month follow-up, and after training and after the one-month follow-up using the paired t-test (Table 2) showed that there is no significant difference in score of clinical practice between before the training and the follow-up period and also between after the training and after the follow-up. However, mean scores were higher in the follow-up period.

Table 2: Comparison of mean score of clinical practice in the test group before and after training, before training and after the one-month follow-up, and after training and after the one-month follow-up

Level of significance	Standard deviation	Mean	Group	n
0/007	6/29	44/63	Intervention (pretest)	35
	4/14	47/23	Intervention (posttest)	35
0/06	6/29	44/63	Intervention (pretest)	35
	1/916	46/57	Intervention (follow-up)	35
0/034	4/14	47/23	Intervention (posttest)	35
	1/916	46/57	Intervention (follow-up)	35

DISCUSSION AND CONCLUSION

The use of evidence in clinical practice will lead to an increase in the quality of health care. Evidence-based nursing is a process which has been raised in recent years as a way for providing health care based on the latest findings. During this process, nurses can make the best clinical decisions using the available research evidence, their own skills, and patient’s performance [14]. Studies have shown that nurses are faced with difficulty in evidence-based practice and their problems include finding the best evidence, identification of correct resources, the use of optimized searching ways, evaluation of evidence, and the use of information literacy skills. The main effective factor in the use of this approach is organizational support, particularly in relation to providing ample opportunity for nurses to communicate with the research and research resources [14, 15]. Therefore, if a health center decides to use the evidence-based care approach, all supportive aspects such as ample opportunities for nursing education, adequate access to resources, etc. should be initially taken into account [16]. The present study showed that holding workshops with evidence-based nursing education content can affect the clinical practice of nurses and the use of evidence in nursing. The study findings indicated that mean score of clinical practice after training is significantly different from the period before training and this reflects the impact of education on nurses. The mean score of clinical practice in the follow-up period showed no significant difference from scores before and after the training and workshops, which can be attributed to the effect of time on what people have learned. Although there was an emphasis on recalling the previously learned content in the follow-up period, this indicates that the current clinical environment does not have a reinforcing effect on the use of evidence and research findings in nursing procedures. On the other hand, the mean score of nurses in the follow-period is higher than that of the period before and after training. This represents the effect of training courses on nurses. The results of studies conducted by Brown show that the use of evidence-based education leads to an increase in academic scores of students [17]. The findings of Green indicate that introduction of clinical scenarios and conducting the clinical discussions cause the effectiveness of education and efficiency of nurses [10]. Abedini conducted a qualitative study on experiences of nursing students about the evidence-based learning in clinical settings and concluded that the use of evidence in clinical settings makes a bond between theoretical and practical implications [18]. In a quasi-experimental study on 40 nursing student in 2010, two groups of common and traditional care and two groups of evidence-based care were compared with each other. The results showed that students in the evidence-based care group gained higher scores on patient’s care. In both groups, awareness of patient care significantly increased at the end of the study. In terms of patient training, a significant difference was observed between traditional care and evidence-based care. In this study, nursing students believed that evidence-based practice leads to better prediction of patient’s condition, providing healthcare with full vision, and more creativity [8]. In a study by Zhang on 75 nursing students that 90% of them were female, the results showed that holding workshops on the evidence-based practice and journal club sessions causes a significant increase in mean score of knowledge, attitude, and behavior of students [19]. Nahri studied the effect of learning based on training scenarios and searching for evidence of nursing on 29 nursing students in Guilan University of Medical Sciences. The results showed that there is no significant difference between the two groups in terms of learning and retention in students. This is probably due to the fact that this study was conducted in the second half of the semester when students are preparing themselves for final exams [20]. Barrow studied the effects of nursing education based on searching the research resources and evidence using questionnaires, observation, and interviews. The findings showed that all students had a positive experience of learning. Many students stated that this method was stressful at first which was due to the ambiguous nature of the scenario and the need for learning by students themselves. The themes extracted from interviews

included exploration, discussion, and engagement in teamwork, enjoying from learning, learning motivation, clinical reasoning and evaluation skills, self-guide in learning, and achieving in-depth learning [21]. In a study conducted by Pastrick, it was shown that evidence-based nursing learning is associated with facing with different perspectives in the study of scenarios, increased independence responsibility of students for learning, improvement of communication skills in small and large groups, and increased transfer of knowledge from the classroom to clinical settings [22]. Foster states that the use of evidence-based approach increases the level of learning in nursing students. By conducting a study on 106 subjects with a bachelor of nursing in the pediatrics, he concluded that evidence-based practice increases the specific working capacity of nursing through increasing the evidence-based knowledge [23]. In the present study, no significant difference was observed between the test and control groups in terms of the clinical practice of nurses considering their demographic characteristics. According to a study conducted by Lak *et al.* (2011), it was shown that clinical decision-making is significantly associated with age and gender. The results showed that participation in decision-making increase with age. This may be the result of increased work experience and participation in the decision making process [24]. In a study conducted by Aghahisseini (2011), the results of data analysis showed no significant association with gender but with age, with better performance in the age group of 30-39. This can be due to a combination of the appropriate age for having job motivation and enough experience in this age range [11]. In a descriptive research conducted in the US in 2004, Melink *et al.* studied the views and opinions of nurses about knowledge, beliefs, and skills and also their needs on evidence-based practice. Their findings indicated that there is a significant relationship between the evidence-based practice and age in specialist nurses [25]. This can be attributed to the fact that the nurses who are working as specialists in different wards of a hospital find higher service records as they age. The use of evidence-based nursing is considered a necessity because of the existence of new scientific evidence, outdated information and methods over time, improvement of education, and updating of measures. Therefore, learning this approach and using it in clinical settings is of special importance and nurses require update and valid information on diagnosis, treatment, prognosis, prevention, assessment, planning, implementation, and evaluation. On the other hand, traditional sources of information are usually inadequate and outdated. This approach leads to improvement of critical thinking, clinical independent decisions, and eventually increased quality of nursing care. Hence, optimal use of research results in nursing and an emphasis on evidence-based nursing leads to the acquisition of professional identity and improvement in the quality of nursing practice. The nurses who establish their interactions based on scientific evidence and documents can provide healthcare service to patients with higher quality, lower length of stay and cost, and higher effectiveness. In addition, such nurses are professionally accountable to patients and possess higher self-confident and stronger professional identity. Health system administrators have an obligation to provide the opportunity for nurses to offer evidence-based care and play the genuine professional roles by supplying adequate staffing, adjusting the workload, and providing ample opportunities. All these findings emphasize the necessity of paying attention to creating a favorable working environment, valuing the academic performance through incentive strategies, and strengthening the positive monitoring systems.

CONCLUSION

Given the fundamental role of nurses in health promotion and their position in the medical staff, we hope that the findings of the present study could pave the way for nurses and other members of medical staff to do their independent tasks more effectively. The ability and skill of using evidence in the nursing profession can increase the performance, self-confidence, and decision-making power of nurses. On the other hand, decision-making based on clinical reasoning can improve the quality of health care in society. Nursing managers also can provide grounds for improving the status and position of nurses. This goal can be achieved through holding regular training courses, encouraging the nurse's active in this field, and providing appropriate feedback to educational and research activities of nurses.

ACKNOWLEDGEMENTS

The present research, registered in RCT under the number K/91/318, was carried out after the approval of the Ethics Committee of Research Department of Kerman University of Medical Sciences and in cooperation with hospitals affiliated to this university. The authors would like to thank all clinical nurses and all relevant units who helped us during this research.

REFERENCES

- [1] Ayatollahi j. Journal - Faculty of Nursing and Midwifery, Mazandaran Nasibeh (Shakiba). 2005; 6(4): 56-57. [In Persian]
- [2] McDonald L. Evid Based Nurs 2001. 4(3): 68-69.
- [3] Jennings B, Evidence W. Research in Nursing and Health 2000; 23(5): 343-345.
- [4] Jennings BW. Journal of Nursing Scholarship 2001; 33(2): 121-127.
- [5] Sheikhalipour Z, Eskandar Fathi A, Lotfi M. Journal of Iranian Education In Med Sci 2014;14(6):507-516.[In Persian]
- [6] Sackett D, Rosenberg W. Evidence-based Medicine. <http://cebm.jrz.ox.ac.uk>.
- [7] Stevens KR, Cassidy VR. New York: National league for nursing:1999.
- [8] Madarshahian F, Hassanabadi M, Khazayi S. Iranian Quarterly of Education Strategies 2012;4(4):189-193.[In Persian]
- [9] Creasia JL, Parker BJ. Philadelphia: F.A Davis Co; 2007.PP.217-219.
- [10] Habibzadeh H, Khajehali N, Khalkhali HR, Mohammadpour Y. The Journal of Urmia Nursing and Midwifery Faculty 2013; 11(4):284-288.[In Persian]
- [11] Aghahosseini SH. Nurs Midwifery J 2011; 6(22):45-54. [In Persian]
- [12] Adib-hajbagheri M. Feiz 2006; 11(2), 44-52. [In Persian]
- [13] Martis, R., J.J. Ho, and C.A. Crowther. BMC Pregnancy Childbirth, 2008; 8: 34.
- [14] Hetzler R, Wilson M, Hill EK, Hollenback C. J Pediatr Nurs 2011;26(2):143-148
- [15] Anthony MK. Research In Nursing & Health 1999;(22):388-398
- [16] Adib-hajbagheri M, salsali M. mdj Tehran university.2005;2(1):5-13
- [17] Brown CE, Kim SC, Stichler JF, Fields W. Nurse Educ Today 2010;30(6): 521-527.
- [18] Abedini Z, Ahmari Tehran H, Khorami rad A, Heidar pour A. Iran J Med Educ 2012;8(11): 864-872.[In Persian]
- [19] Qi zhang, Tieyingzeng, Yingchen, Xlaopanli. Nursing Education Today.2011;1-6
- [20] Nehrir B, Rejeh N Ebadi A. Journal Of Nursing Education.2013;2(3):50-53.[In Persian]
- [21] Barrow M, Reeve R. Nursing And Health Sciences.2002;5(1):39-49
- [22] Pastric B, Travaglione A, Marshal V. Leadership & Organization Development Journal,.2006;27(5): 399-414.
- [23] Foster, R. journal for specialists in pediatrics nursing.(2004);9(3),75-76.
- [24] Lakdyzji S, MirsaidiG, GhochazadehM. Tabriz university of journal medical surgical.2010;(27):29-35
- [25] Melink C, Fletcher A, McMurray A. collegian.2007;4(2):20-5
- [26] Nehrir B. Rejeh N Ebadi A. Journal Of Nursing Education 2013;2(3):50-53.