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The effect of implementing evidence-based guidelines on the quality of nursing care provided to patients with angina pectoris

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ABSTRACT

Aims: Evidence-based nursing guidelines can significantly improve the quality of nursing care. A key prerequisite for improving care quality is quality assessment. Meanwhile, a key indicator of healthcare quality is the quality of nursing care. The aim of this study was to investigate the effects of implementing evidence-based guidelines on the quality of nursing care provided to patients with angina pectoris.

Methods: This pretest-posttest clinical trial was conducted in 2014 on 76 patients in Khatam Al-Anbia hospital, Gonbad-e Kavoos city, Iran. A standardized questionnaire was used for assessing the quality of nursing care standards both before and after educating evidence-based nursing guidelines. The SPSS15 was used for conducting statistical tests such as the paired- and independent-samples t and the Chi-square.

Results: Before the study, the means of documentation quality in four areas of nursing diagnosis, care planning, implementation, and evaluation were respectively 0.94 (0.19), 0.63 (0.10), 11.57 (0.23), and 2.57 (0.18), and. After the study, these values increased to 3.2 (0.14), 3.52 (0.17), 15.36 (0.22), and 5.7 (0.23), respectively. The differences between the pretest and posttest readings were statistically significant ($p<0.001$).

Conclusions: Given the significant effects of implementing evidence-based nursing guidelines on the quality of nursing care standards, educational managers of hospitals need to develop effective strategies for facilitating evidence-based nursing practice.

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1. Introduction

Nurses constitute the largest group of healthcare professionals. The core of nurses' professional practice is care delivery while the quality of nursing care is considered as the core of healthcare services [1]. The quality of care is defined as the degree of access to the most optimum health outcomes as well as the most cost-effective care services [2]. According to Lee and Hsu (2007), the key prerequisite to the

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improvement of care quality is quality assessment. Moreover, they noted that the key indicator of healthcare quality is the quality of nursing care [3]. Accordingly, high-quality care delivery is considered as a main priority in healthcare systems [4].

Currently, great challenges exist in the area of quality nursing care [4]. The results of a study conducted in hospitals located in New York showed that while patients are getting increasingly informed and demanding high-quality care, one in every 25 and 13.6 in every 100 patients respectively suffered from injury and death due to low-quality care [5]. Low-quality care prolongs patients' hospital stay and increases healthcare costs. Accordingly, care quality improvement can enhance the cost-effectiveness of care [6].

One of the key strategies for improving the quality of nursing care is evidence-based nursing care [7]. Evidence-based nursing is defined as the delivery of care based on the best empirical evidence, clinicians' personal expertise, and patients' preferences. Koh et al. (2008) found that delivering care based on a clinical practice guideline significantly improved the quality of care [8].However, using the vast amount of research findings in daily practice is difficult for healthcare professionals [9]. A strategy for facilitating evidence-based practice is using evidence-based guidelines [10]. These guidelines are developed systematically to help healthcare providers make sound clinical decisions in critical situations during their daily practice. Evidence-based guidelines minimize alterations in care delivery, improve the quality of care [11], and save money and time [9]. Mohammadpoor (2007) also noted that evidence-based guidelines are used in healthcare centers because they improve the quality of care, reduce healthcare costs, enhance public health, and help achieve international standards of care [12].

The leading cause of disability and death in our country, Iran, is coronary artery disease (CAD). There is no reliable statistics on the prevalence of this problem in Iran. Nonetheless, studies have shown that CAD-related mortality rate has increased by 20–45% in recent years [13].Currently, 46% of all deaths happening in Iran are due to CAD [14]. Accordingly, healthcare centers need to adopt strategies for improving the quality of care provided to patients with CAD. Recent studies have shown that care quality improvement can significantly decrease mortality rate among patients with heart problems [15].

Gibler et al. (2005) reported that implementing clinical guidelines are beneficial to patients with unstable angina and myocardial infarction both during their hospital stay and after being discharged from hospital. They also noted that healthcare professionals' adherence to evidence-based guidelines improves care quality and patient outcomes [16]. Quality nursing care is critical to patients hospitalized in critical care units and it can shorten the length of their hospital stay. However, Iranian healthcare professionals are not familiar enough with evidence-based guidelines and usually do not use scientific evidence in their daily practice. Moreover, there is no ample evidence regarding evidence-based clinical decision making. We conducted this study to narrow these gaps. The aim of the study was to investigate the effects of implementing evidence-based guidelines on the quality of nursing care provided to patients with angina pectoris.

2. Methods

This pretest-posttest clinical trial was conducted in 2014 on 76 patients and all critical care nurses affiliated to the coronary care unit (CCU) of Khatam Al-Anbia hospital, Gonbad-e Kavoos city, Iran.

In total, ten nurses were recruited by using the census method. Nurses were included in the study if they had the desire for participating in it, had Bachelors' or Master's degree in nursing, and worked in CCU. Nurses who were not willing to participate, withdrew from the

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study, or did not attendour preliminary educational course were excluded.

Before commencing the study, necessary permissions were obtained from the Research Committee of Sabzevar University of Medical Sciences, Sabzevar, Iran. Nurses were informed about the aims and the methods of the study. They were assured that participation in and withdrawal from the study were voluntary. Moreover, we ensured them of the confidentiality of their data. Study data collection tool consisted of two parts: a demographic questionnaire (on participants' age, gender, working shift, work experience, participation in nursing process workshops, as well as educational, marital, and employment status) and the Nursing Care Standards Checklist (NCSC). The NCSC was developed by Zamani et al. (2012) based on the ANA nursing standards and includes four standards including nursing diagnosis (four items), care planning (six items), implementation (seventeen items), and evaluation (nine items). The content validity of the checklist was evaluated through asking ten experts to comment on it [17]. The quantitative content validity of the NCSC was also evaluated by calculating its content validity index and ratio (CVI and CVR). As the number of experts was equal to ten, the Lawshe's table showed that CVRs equal to and greater than 0.62 were acceptable. Moreover, the CVI value of the checklist was higher than 0.79, confirming the content validity of the checklist.

Primarily, the quality of nurses' routine care standards was evaluated by using the NCSC. Then, we educated the participating nurses about the implementation and the documentation of eight evidence-based practice guidelines developed by Nezamzadeh et al. (2011). Educations were provided in a four-hour workshop by the advisor of the study. The contents of educations were the definition and the explanation of evidence-based nursing guidelines, the steps and the documentation of the nursing process, the sheets for documenting the nursing process, the nursing care documentation sheet, and the discharge sheet. Moreover, a follow-up educational session was held two weeks after the first workshop for answering participants' questions and clarifying possible ambiguities. Besides, we attended the study setting, monitored nurses' documentation, provided them with supplementary educations, and gave them relevant feedbacks. Two months after providing educations and implementing the guidelines, we reevaluated the quality of nurses' care standards. Study data were analyzed by employing the SPSS15. Statistical tests such as the paired- and independent-samples t and the Chi-square were used for comparing the study groups.

3. Results

The mean of participants' ages was 35.7±4.3. Four (40%) and six (60%) participants were male and female, respectively. Most of the participants (80%) were married. All of them held Bachelor's degree. Five participants had formal permanent employment while the remaining five ones were employed either provisionally or under a contract. Six participants (60%) worked evening-night shift while others worked morning, evening, night, or morning-evening shifts. Most of the participants had a work

Table 1: Participants' characteristics

Demographic characteristics		Number (%)
Age	35–60 years	9 (75)
	25–30 years	3 (25)
Gender	Female	6 (60)
	Male	4 (40)
Marriage	Married	8 (80)
	Single	2 (20)
Education	Bachelor's	10 (100)
	Other degrees	0 (0)
Employment	Permanent	5 (50)
	Provisionally	5 (50)
Participation in nursing process workshops	Yes	1 (10)
	No	9 (90)
Work experience in nursing	5–14 years	9 (75)
	15–24 years	3 (25)

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experience of 2-10 years. Only one participant had previously participated in a workshop on nursing process (Table 1).

Before the study, the means of documentation quality in the four areas of nursing diagnosis, care planning, implementation, and evaluation were respectively 0.94 (0.19), 0.63 (0.10), 11.57 (0.23), and 2.57 (0.18). After the study, these values increased to 3.2 (0.14), 3.52 (0.17), 15.36 (0.22), and 5.7 (0.23), respectively. Compared with the control group, the means of all steps of the nursing process were greater in the experimental group (Table 2).

4. Discussion

Study findings revealed that implementing evidence-based guidelines by using the nursing process significantly improved the quality of nursing standards in all the four steps of the nursing process (i.e. nursing diagnosis, care planning, implementation, and evaluation). Currently, maintaining and enhancing patients' health are among the chief concerns of healthcare system. Evidence-based practice could be a useful framework for promoting clinical practice and minimizing patients' health-related problems [18].

Salehi et al. (2013) also investigated the effects of implementing evidence-based nursing guidelines on the quality of care standards in a neonatal intensive care unit. Our findings are in line with their findings [19]. Seyed-Rasuli et al. (2010) also reported that applying the principles of evidence-based nursing was effective in alleviating elderly women's urinary incontinence [20]. Moreover, Behnam-Veshani (2011) found that evidence-based ice therapy significantly reduced the incidence and the severity of chemotherapy-induced oral mucositis [21].

The results of a study conducted by Madarshahian et al. (2010) indicated that providing evidence-based clinical education to nursing students significantly enhanced care quality and patient satisfaction [22]. This finding also confirms our findings. Moreover, our findings were in line with the findings reported by Considine and McGillivray (2010). They found that implementing evidence-based guidelines significantly improved the quality of nursing care provided to patients with acute stroke [23]. Drew et al. (2004) also noted that guidelines which are developed based on the best existing evidence can properly guide the process of nursing care [24]. Da Silva et al (2009) also found that providing nursing care by using the nursing process and care standards was effective in reducing the incidence of surgical site infection [25]. According to Dunnion (2010), nurses have positive attitudes towards evidence-based nursing practice and consider holistic care as well as effective nurse-patient and professional communications as the benefits of this approach to care [26].

According to Atashzadeh and Ashktorab (2011), factors that affect the implementation of nursing process include adequate staffing, positive incentives, supportive work environment, colleagues' collaboration, managers' supervision, andnurses' knowledge, beliefs, attitudes, and skills [27].

Documentation reflects the implementation and the quality of care. Jasmi et al. (2012) assessed the quality of nursing documentation and reported that most nursing reports in medical-surgical wards were not based on the nursing process [28]. Susan et al. also found

Table 2: The quality of documenting the four steps of the nursing process

Group →	Control	Experimental	The independent-samples t-test
Steps of the nursing process ↓	Mean (standard deviation)	Mean (standard deviation)	
Diagnosis	0.94 (0.19)	3.2 (0.14)	t = – 9.36, df= 74, p< 0.001
Care planning	0.63 (0.10)	3.52 (0.17)	t = – 13.98, df = 74, p< 0.001
Implementation	11.57 (0.23)	15.36 (0.22)	t = – 11.68, df = 74, p< 0.001
Evaluation	2.57 (0.18)	5.7 (0.23)	t = – 10.42. df = 74, p< 0.001

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that their educational intervention promoted nurses' adherence to the initial and post-analgesic documentation of pain assessment [29].

Non-documented procedures and interventions are legally considered as undone. Moreover, the improper documentation of the implemented nursingprocedures breaks the continuity of care and negatively affects the process of recovery. On the other hand, systematic and coherent documentation paves the way for the detailed evaluation of nurses' performance, helps nurses understand that their performance is monitored accurately, tempts them to provide effective care, and improves the quality of care [30].

Medical sciences are advancing rapidly and old evidence is continuously substituted with new one; therefore, formal university-based educations do not guarantee sound lifetime practice [31]. During their daily practice, healthcare professionals, particularly nurses, need authoritative information regarding patient assessment, accurate diagnosis of patients' problems, effective care planning, successful implementation of the planned care, and accurate evaluation of its outcomes. Accordingly, they need to receive continuous in-service educations and trainings for keeping themselves up-to-date and learning how to provide care based on the newest and most credible evidence. Evidence-based practice helps nurses create a strong professional identity and improves the quality of nursing care [32].

5. Conclusions

Implementing evidence-based nursing guidelines enhances the quality of nursing care standards. Consequently, educational managers of hospitals need to develop effective strategies for facilitating evidence-based nursing practice.

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