

Original Paper

The Effect of Case Method and Primary Nursing Method on the Social Dimension in Quality of Patient Care



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ABSTRACT

Introduction: The quality of care in patient's view lacks the optimal and desired level in hospital wards with respect to psychosocial dimension. Moreover, there is a direct relationship between the methods of the division labor of nurses and the quality of patient care.

Objective: This study aimed to compare the primary nursing method and case method on the psychosocial dimension of the quality of patient care in Coronary Care Units (CCU).

Materials and Methods: This is a experimental study conducted on 60 patients in two groups at 4 CCUs of Educational Centers in Mashhad City, Iran in 2014. After performing these two methods, the quality of patient care with respect to psychosocial dimensions were assessed by the interview method using the quality of patient care questionnaire. Finally, the results were analyzed using the Independent t test, Mann-Whitney and Chi-square tests.

Results: The mean age of patients was 56.4 ± 13.7 years and the mean age of nurses was 37.4 ± 4.4 years. The mean score of individual psychosocial dimension was 41.7 ± 7.1 for the primary nursing method group and 27.6 ± 8.9 for the case method group. Also the mean score of group psychosocial dimension for the quality of care in primary nursing method 17.3 ± 5.7 and case method 12.3 ± 7.6 groups using Independent t test showed a significant difference between the two groups, i.e. the quality of both individual and group psychosocial dimensions in the primary group were significantly higher ($P=0.0001$).

Conclusion: It seems that the implementation of primary nursing method can partly improve the quality of care in individual and group psychosocial dimensions.

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Introduction

Nurses are the largest group of healthcare service providers [1] and the foundation of the improvement of the quality of care, therefore their performance is very important in advancing organizational goals [2].

Many nursing experts consider caring as the basis of nursing [3, 4] or nursing interventions [5]. High quality nursing care results in the positive outcomes of patient care [6]. Also, mental health is an integral part of the health system [7].

Human being is a bio-psycho-social individual and nurses should practice their caring role in all three areas, however, nurses appear to focus on the patient's physical dimension and their psychological and social dimensions are not considered appropriately [8]. In recent years, the integration of mental health services into the healthcare program has showed promising results in countries such as India and Pakistan [9]. The upgraded level of emergency services, high workload and the shortage of nurses had significant negative effects on the quality of nursing care, especially with regard to the psychological dimension [10]. Challenges in nursing care had made the healthcare managers to increase the quality of nursing care [11].

One way to increase the quality of care is applying caring skills and the principles of management, which can improve the quality of patient care by providing a suitable environment and working conditions along with professional independence [12]. Clearly, nobody is physically or psychologically capable of carrying out all the tasks associated with a complex activity alone. On the other hand, the division of labor facilitates doing different tasks [13]. There are different methods for the division of labor in the nursing profession, including the case method and the primary methods [14]. At the moment, the case method is used in many hospitals in which patients are divided between nursing staff according to the patients' needs and the level of nurse's knowledge and skills. In other words, the nurse-patient assignment is done according to the complexity of the level of care and nurses' skills. In this way, all patient care is the responsibility of the nurse in charge during each shift [15].

The primary nursing method is also a special model of nursing [16], which is one of the care methods with maximum level of patient-centeredness, and in order to build trust with patients, the nurse has the responsibility of patient's care from admission to discharge [14].

Primary nurse, who is responsible for the main care of the patient, supervises the work of evening and night shift nurses [17]. Nishaboori in a study on the quality of nursing care from the perspective of nurses and patients reported that the quality of care in the psychosocial dimension has been only desirable from the perspective of 31.6% of the patients and 92.9% of the nurses [18].

Since the studies on the labor division methods have been generally conducted overseas and given that our clinical setting is different in terms of culture and working conditions, limited studies have been conducted in this regard. Also most special wards including the Coronary Care Units (CCUs) can implement the primary nursing method in terms of nurse-patient ratio, so this study was conducted to compare the effect of primary method with the case method on the psychosocial dimension of quality of care for the patients in the CCU.

Materials and Methods

This experimental study was conducted simultaneously on two groups, in 4 CCUs of Educational and Research Centers of Mashhad City, Iran in 2014. These centers were selected using the convenience sampling method. The study population consisted of all the patients admitted to the CCU of the educational and therapeutic centers. The study wards were similar in terms of equipment and facilities, the number of beds for admitted patients, and type of disease. The nursing inclusion criteria were as follows: BS in nursing or higher degrees, at least two years of experience in CCU, attending a briefing session, providing written and informed consent to participate in the research.

Inclusion criteria for patients were as follows: fluency in Persian, aged over 18 years, being admitted to the CCU for at least 48 hours, not practicing healthcare, complete vigilance, being able to answer questions, and lack of familiarity with nurses (any history of familiarity). Exclusion criteria for patients and also nurses were as follows: the transfer of patient or nurse to other wards, leaving the hospital by the nurse or discharge of the patient, unwillingness of the patient or nurse to continue participating in the study, and their death.

To determine the minimum number of participants in this research, the formula for sample size determination was used to compare the mean of two independent groups. The parameters of mean and standard deviation for the variable of the quality of care was obtained from a previous study in order to assess the quality of care (the standard deviation of the quality of care score

in the test group was 0.4% and the standard deviation of the quality of care score in the control group was 0.6) [19]. Meanwhile, the confidence level of 95% ($\alpha=0.05$) and the test power of 80% ($\beta=0.20$) were considered, to determine the sample size.

The sample size in the primary and case groups were estimated as 24 each with a total of 48. To ensure a sufficient number of subjects and the forecast of an approximate subject loss, 30 patients were enrolled in both intervention and control groups (60 patients). Eventually, 4 patients were excluded from the case study method due to their discharge or ward transfer. Initially, sections for each division of labor were selected using random numbers table. Wards by random allocation were divided into two groups of control and intervention. Then using a stratified method, the number of patients in each of the 4 CCUs was determined as 15 patients. Instruments used in this study included Demographic Profile form and the Quality of Patient Care Questionnaire (QUAL-PAC). Demographic profile form contained 11 questions for the nurses and 19 questions for the patients. According to the study by Irurita, QUAL-PAC questionnaire has been used to review the caring process and the quality of nursing care in the United States, England, and Nigeria since 1975 [2].

This questionnaire, which has been previously used in Iran [19], includes 23 questions in the 2 dimensions of personal psychosocial dimension (16 questions) and group psychosocial dimension (7 questions). It is scored based on a 5 point Likert type scale from 0 to 4 (for the answers of “never”, “sometimes”, “often”, “always”; and “no history recorded”, respectively). The total score of this questionnaire ranges between 0 and 92. The content and face validity were used to determine the scientific validity of these tools. Thus it was sent to 10 members of the Faculty of Nursing and after their review, the necessary modifications were made to the mentioned instruments and then used in the study. The internal consistency method was used to determine the reliability and its Cronbach α value was calculated as 0.89 after conducting a preliminary study on 15 eligible patients.

After obtaining permission from the Ethics Committee research setting was investigated in terms of the ability to implement the primary and the case nursing by the researchers. Then, after introducing the researchers, the purpose of the study was explained to the head nurses and nurses and demographic information questionnaires were provided to the nurses of the two groups after meeting all the inclusion criteria and the provision of written informed consent form.

In all hospitals, the CCU wards were randomly assigned to the two primary nursing method and case method groups. Therefore, one ward was assigned to the case method and the other was allocated to the primary nursing method. To familiarize nurses with the two groups of research, a one-day training class regarding the methods of the division of labor including a variety of labor division methods, the advantages and disadvantages of each method, and emphasizing on how the method was applied in the desired ward (the primary or the case method) was held separately in each ward for the same nurses.

After the training on the division of labor methods and its implementation, the researchers directly monitored the process. In the group of primary labor division method, 2 to 4 patients were assigned to every primary nurse working always in the morning shift and were responsible to take care of these patients from admission to discharge. In the evening and night shifts, the primary nurses monitored the work of colleagues by telephone or in person and supervised their performance. The primary nurses were responsible for planning and drafting a care plan for the patients and sharing it with the colleagues of the evening and night shifts by written or verbal communication. In the case method group, 2 to 4 patients were assigned to every nurse (based on the patient care) and nurses were responsible for the patient care in the same shift and there was no guarantee that the next day they would be kept responsible for taking care of the same patients. Meanwhile, the proposed primary nursing method care program and also the case method were designed and delivered by the researchers in conformity with the ward policies.

The researchers monitored the implementation of two methods of the labor division in the mentioned wards until the completion of the sample size, in the evening and night shifts. Upon the patient's discharge from the CCU and referring to the accounting section (because the patient was definitely discharged and it was ensured that the completion of the form will not have any effect on the nursing care and the physicians), each patient under care in the both primary and the case groups responded the questions of QUAL-PAC questionnaire again after providing the necessary explanations. At this stage, 11 patients were excluded from the study because of lack of complete consciousness. The data analysis was carried out by SPSS (V. 16).

Descriptive statistics were used to describe the characteristics of subjects in each group. The normal distribution of variables were checked by the Kolmogorov-

Smirnov test and the Shapiro-Wilkes test was used to determine the quantitative variables of research. The parametric Independent t test was used to examine both groups regarding the homogeneity of variables with normal distribution, and the Mann-Whitney non-parametric test was used for qualitative variables with abnormal distribution. The Chi-square test was used for the nominal and qualitative variables. The Independent t test was used to compare the primary and the case group and nonparametric test (Mann-Whitney) was used in cases of the abnormal distribution of variables.

Results

The findings revealed that the patients in the primary nursing method group were mostly females 18(54.5%) and the patients in the case group were mostly males 17(65.4%). The mean age of the patients in the primary nursing method group and the case group were 57.0±13.7 years and 55.6±13.8 years, respectively (age range: 13-83 years). In terms of education in the primary nursing method group, only 3(9%) patients had the education level of higher than diploma and 4 patients (16%) in the case method group had the same level. Most of the patients in the primary group 20(60.6%) had a history of admission to the CCU, while in the case group it was only 12(46.2%). The results of the Chi-square test showed no significant difference between two groups in the CCU in terms of the frequency of this variable (hospitalization in the CCU) (P=0.515).

A total of 44 nurses were evaluated. The mean age of nurses was 37.4±4.4 years, ranging from 30 to 46 years. Nineteen (82.6%) nurses in the primary and 14(66.7%) nurses in the case method group were women. The mean total work experience of nurses was 12.6±4.5 years (Range: 3 to 22 years) and the mean CCU work experience was 5.6±2.9 years (range: 2 to 14 years). The mean work management experience of nurses was 3.3±4.3 years (range: 0 to 16 years).

Results of the Independent t test for overall work history and the Mann-Whitney test for work experience in the CCU ward and managerial experience showed no significant difference between the two groups. The comparison of the mean of individual psychosocial dimension showed that the primary nursing method group had higher mean score in the individual psychosocial dimension (P=0.0001). The mean score of the psychosocial dimension of group quality care were 17.5±3.7 and 12.7±3.6 in the primary nursing method group and the case method group, respectively.

The Independent t test showed a significant difference in the mean score of this variable between the two groups in which the quality of psychosocial dimension was higher in the primary nursing method group (P=0.0001). The comparison of the total mean score of psychosocial dimension with the Independent t test also showed a significant difference between the primary nursing method group (59.1±8.6) and the case method group (40.4±8.8) (P=0.0001) (Table 1).

The comparison of the mean scores of the quality of patient care in psychosocial dimension according to the level of education in the studied patients based on 2-way ANOVA revealed a significant difference between the overall effect and the effect of the group quality score on the patient care and educational level (P=0.001). However, the interaction between these two variables was not significant (P=0.751). Result of 2-ways ANOVA test showed general effect (P=0.001), group effect (P=0.001), and level of education effect (P=0.021), were significant and the interaction effect of group and the level of education was not significant (Table 2).

Discussion

The results showed a significant difference between the primary nursing method group and the case method group with regard to individual psychosocial and group psychosocial dimensions of the quality of patient care.

Table 1. Quality of care in group and individual psychosocial dimension

Dimention	Primary Group		Case Group		Sig.*
	Mean±SD	No.	Mean±SD	No.	
Individual psychosocial dimension	41.7±7.1	33	27.8±6.9	26	0.0001
Group psychosocial dimension	17.5±3.7	33	12.7±3.6	26	0.0001
(Individual and group) Psychosocial dimension	59.1±8.6	33	40.4±8.8	26	0.0001

*The Independent t test

Table 2. Quality of patient care according to the level of education

Variable	Primary		Case		Overall		
	Mean±SD	No.	Mean±SD	No.	Mean±SD	No.	
Level of education	Under diploma	170.8±18.1	15	119.4±29.1	11	149.0±34.5	26
	Diploma	173.2±16.8	15	122.0±19.6	11	151.5±31.2	26
	Above diploma	163.6±10.4	3	114.7±13.8	4	148.5±32.3	7

Given the homogeneous demographic characteristics of the patients and other variables, this difference can be related to the implementation of the primary division of the labor method.

The fundamental responsibility of nurses is patient's care, in other words, improving the quality of care is the main goal of the medical staff, especially nurses. Unfortunately, many studies on the quality of patient care have shown that the quality of patient's care is not at the optimal level [19, 20]. One way to improve the quality of care for patients is the optimization of the division of labor for nurses [14]. The current study showed that the quality of care in individual and group psychosocial dimension in the primary nursing method had better results than the case method. A study by Archibong in Nigeria, showed that the quality of care in the intervention group increased and its most and the least impacts were on the individual psychosocial dimension and the physical dimension, respectively [21]. The results of his study are in line with the current study in terms of the impact of the primary nursing method labor division method on increasing the quality of care in individual psychosocial dimension.

Another study reports that implementing a follow-up care model in the experimental group in all aspects of the physical, emotional and general, improves the quality of life in the patients after three months [21]. This finding is in line with the results of the current study in terms of improving the quality of care; however, the difference is that the current study emphasizes on the psychosocial aspects of the patient. In the study by Hedugas, findings reveal more professional communication between nurse and patient and increased job satisfaction in nurses following the implementation of the primary division of labor.

Another finding of the study by Hedugas refers to the continuity in care by the primary nurse and the awareness of all patient's needs as factors affecting the higher professional communication and job satisfaction in

nurses [22]. Establishing professional communication and the increased satisfaction of nurses are also the self-promotion factors of the quality of care and their results are indirectly consistent with the current study results.

Drach also showed that achieving optimal results in primary nursing method model was dependent on the interaction of nurses and managers and their mutual support had a positive effect on the performance of nurses. The lack of support from nurses and primary nursing method model also reduced the desirable performance of nurses [23]. Their results were in line with the current study in terms of the importance of primary nursing method model, but the extent of the impact of the primary division of labor to improve the quality of patient care depends on other factors like managers' support, job satisfaction, and patient's characteristics [24], because of the differences in the impact of this model in other studies and ours.

Generally, the results of this experimental study indicate that implementing the method of primary division of labor improves the quality of patient care in the individual and group psychosocial dimensions. This method can be implemented with the available facilities in the hospitals in Iran and there was no need for more financial facilities and equipment. The selection and the implementation of the primary division of labor which is patient-centered can improve the quality of patient care, without using extra facilities and equipment, especially in psychosocial dimensions. The implementation of this approach initially requires serious support from the managers and authorities of the hospitals and departments, because of the natural resistance against change. For example, there was also resistance to change in the staff in our study which was greatly eliminated by describing the methodology and justification of personnel, especially the head nurses.

Personality and the psychological characteristics of research subjects can affect the completion of the questionnaires; therefore, we tried to provide the ques-

tionnaires appropriate to the psychological state of the participants. Because this study was carried out in CCUs, it is recommended to conduct further studies on the same subject in the general wards.

Ethical Considerations

Compliance with ethical guidelines

This study, was approved with the ethical code 930558, on May 4, 2014 in Mashhad University of Medical Sciences (IRCT code: IRCT2014053117923N1).

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Conflict of interest

The authors certify that they have no affiliation with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter or materials dismissed in this manuscript.

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