Original Article

Effect of family presence on anxiety of acute Coronary Syndrome patients at Cardiac care unit

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ABSTRACT

Background: Anxiety is one of the most common psychological problems in cardiac patients. Despite evidence of positive effect of family participation in patients care plan, this role is still under question on the cardiac care unit (CCU). This study was aimed to investigate the effect of family presence on acute coronary patient's anxiety. Methods: The quasi-experimental study was conducted on 60 patients with acute coronary syndrome admitted to the CCU in Imam Reza hospital in Eslamshahr in 2017. The method of sampling was convenience. The Spielberger questionnaire were used to data collection. Data were analyzed using descriptive and inferential statistics, Chi Square test, and Independent-sample T test. The level of significance was less than 0.0. Results: The mean and standard deviation scores of participants was 52.88±10.73, respectively. At the start of the study, the mean of anxiety in the control group was more than intervention group (47.80 versus 40.73, P= 0.042). The mean of anxiety in third day in the intervention group was significantly less than the control group (33.13 versus 44.63, P=0.001). Conclusion: Anxiety is a common problem in patients hospitalized in the cardiac care unit and family presence can help to decrease this anxiety.

Keywords: Acute Coronary Syndrome, anxiety, family presence.

Introduction

Cardiovascular disease is considered as one of the chronic diseases, the main cause of death and disability in non-communicable diseases worldwide and more than 23 million deaths will be happen due to the coronary artery disease by 2030, with 80% of these deaths will occur in developing countries [1, 2].

Acute coronary syndrome has the highest incidence of cardiovascular disease and is associated with high mortality and morbidity [3]. The number of patients with coronary artery disease in Iran similar to other industrialized countries, has been increased from 46.1% in 1996 to 58% in 2000 and 63.3% in 2006 [4], and it is the first and most common cause of death in both male and female genders [5]

Anxiety is one of the most common and important psychological problems in addition to causing physical problems after heart disease such as heart attack, with an incidence of 26% and with emotional state associated with tension, anxiety, anger and increased activity of the auto nervous system along with one or more physical symptoms resulting in the onset of angina pectoris. Some factors lead to anxiety including the risk of death, anxiety about the ability to take care of oneself, having the fear of diagnostic and therapeutic methods and their outcomes, the economic burden of disease, separation from the family and being in an unknown environment [6].

Anxiety or any emotional situation result in the release of adrenaline and increased blood pressure, which may increase heart rate and increase myocardial workload [7]. The results of the studies indicated that the high level of anxiety in the first 48 hours after admission in these patients increases the disease complications by 4.9 times [8].

Therefore, it is necessary to consider moderating anxiety as one of the most important nursing care in patients with myocardial infarction [6]. Family is the most important social institution and the most fundamental institution of society, which has the greatest impact on its members as well as family-based care increases the satisfaction of provided care [9].

The adverse psychological and physiological response of patients with the presence of the family is minimized and the condition is created to reduce the mental stresses and anxiety of patients

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and consequently cardiovascular complications and increase their level of health and satisfaction [10].

Considering the benefits of the family's presence in supporting the psychological support of the patient and reducing her complications during admission as well as considering that there was no study based on the effect of family presence on the anxiety affecting acute coronary syndrome from admission to discharge in the intensive care unit in Iran, then the present study was conducted to determine the effect of this presence on the amount of anxiety.

Methods and Materials

The present study was a quasi-experimental clinical trial which was conducted in Imam Reza hospital of Eslamshahr city in 2017. The number of samples was 30 in each group (n=60) using the following formula:

$$n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 \times (S_1^2 + S_2^2)}{d^2}$$

Inclusion Criteria in this study were included patients with acute coronary syndrome (myocardial infarction with ST elevation, myocardial infarction without ST elevation and unstable angina) according to the physician's diagnosis, hospitalization for at least three days in the cardiac care unit, patient's awareness about time and place, lack of anxiety and psychological disorder before admission based on records, earning score higher than 20 according to the Spielberger questionnaire. Exclusion criteria were included: discharge of patients three days after admission, need for Cardiopulmonary Resuscitation (CPR) during the study, sleep deprivation other than alprazolam and oxazepam, causing acute cardiac complications during the study (such as acute pulmonary edema and acute cardiac failure) and pectoris angina. Spielberger anxiety questionnaire was completed on the first day of admission to the cardiac care unit and the second time in the third day of admission to the cardiac care unit.

Brief Spielberger tool is used to determine position anxiety. The questionnaire is a measure of concern, anger, and under pressure, and it shows that a person is already feeling the current position. This tool has 20 questions that are scored in a 4-point Likert.

A number of questions in this questionnaire are scored in reverse (1, 2, 5, 8, 10, 11, 15, 16, 19, 20). The score of the questionnaire lies within the range of 20-80. Low, moderate and high anxiety is considered as the score between 21-40, 41-60, and 61-80, respectively [6]. To determine the validity of the demographic tool, the content validity method was used and its reliability was confirmed by 10 faculty members.

For the validity and reliability of Spielberger anxiety tool, a research conducted by Mehram et al. in 1999 was used which was performed on 600 patients. For the validity of the Spielberger questionnaire, in this study, the mean of anxiety in the normal society and the standard society in all age groups was compared at a level of 0.05 and 0.01, which indicates the validity of the anxiety questionnaire.

The reliability of the Spielberger tool in Mehram study was calculated by Cronbach's alpha, and its rate in the norm and standard society was 0.94 [10]. In order to carry out the research, the ethic committee approved with the code IR. SBMU.PHNM.1395.571 and the RCT code IRCT2017030732939N1 was obtained from the Iranian Registry of Clinical Trials (IRCT).

For the control group, performing routine care of the CCU without the family presence was considered, and for the intervention group, in addition to routine care of the CCU, one family member was requested to stay with the patient from the first day until the last day. Data analysis was done using SPSS version 22.

Results

In this study, 120 questionnaires were analyzed for 60 patients, on the first and third day of admission. The mean age of participants in this study was 52.88 years with a standard deviation of 10.73 years. The lowest and highest age of subjects was 33 and 81 years, respectively. The mean age of patients in the intervention group was 57.30 ± 11.18 years and 48.47 ± 8.31 years in the control group. The mean age of patients in the intervention group was significantly higher than the control group (P=0.001) (Table 1 and 2).

In this study, 49 patients (81.7%) were male and 11 patients (18.3%) were female. There were 80% and 83.3% male in the control and intervention groups, respectively. Regarding gender, there was no statistically significant between the two groups (P=0.739). Regarding education, the majority of patient were under diploma (71.7%), 3.3% were university students, 16.7% had diploma and 8.3% were illiterate. There were no significant differences between the control and intervention groups in terms of educational level (P=0.465). In this study, 55% of patients were labor, employee, self-employed, or other occupations, 16.7% were housewives and 28.3% were retired. There was no statistically significant difference regarding occupation between the two groups (P=0.732). Monthly income of patients was only sufficient in 26.7% of patients, while in other patients, it was not sufficient and the ratio of those who sufficient monthly income was not significantly different between the two groups (P = 0.559) (Table 3).

The mean of anxiety at the beginning of the study in the control group was significantly higher than the intervention group (47.80 vs. 40.73, P=0.042). Also, the mean of anxiety score in the intervention group was significantly lower compared with the control group (33.13 vs. 44.63, P=0.001). The mean of anxiety score in the control group was reduced by 3.17, which was not statistically significant. However, in the intervention group, the mean score of anxiety at the end of the study was reduced to 7.60, which was statistically significant (P=0.001) (Table 4).

Table 1: Comparison of the control and intervention groups by gender

Variable			Group		P value
			Intervention	Control	
Gender	Male	Frequency	25	24	0.739
		Percent	83.3%	80.0%	
	Female	Frequency	5	6	
		Percent	16.7%	20.0%	

Table 2: Comparison of the control and intervention groups by age

Variable		Mean	Standard deviation	Min	Max	P value
Age	Control	48.47	8.31	34	60	
	Intervention	57.30	11.18	33	81	0.001
	Total	52.88	10.73	33	81	

Table 3: Comparison of demographic characteristic in the control and intervention groups

Variable		Group		P value
		Intervention	Control	
Level of education	Illiterate	3	2	0.465
		10.0%	6.7%	
	High school	22	21	
	diploma	73.3%	70%	
	Diploma	4	6	
		13.3%	20%	
	Over diploma	1	1	
		3.3%	3.3%	
Marital status	Married	28	29	0.999
		93.3%	96.7%	
	Spouse died	2	1	
		6.7%	3.3%	
Employment status	Manual worker	3	6	0.732
		10%	20%	
	Employee	3	3	
		10%	10%	
	Housekeeper	5	5	
		16.7%	16.7%	
	Retired	11	6	
		36.7%	20%	
	Self-employed	1	2	
		3.3%	6.7%	
	Others	7	8	
		23.3%	26.7%	
Monthly income	Enough	9	7	0.559
		30%	23.3%	
	Not enough	21	23	
		70%	76.7%	

Table 4: Comparison of the mean of anxiety number at the start and end of the study

Group	At the start of the study		At the end of the study		P value
	Mean	SD	Mean	SD	
Control	47.80	14.59	44.63	14.53	0.223
Intervention	40.73	11.5	33.13	8.98	0.001
P value	0.042		0.001		-

Discussion

This study was aimed to investigate the effect of family presence on the anxiety of patients with acute coronary syndrome in the cardiac care unit. It was shown that the mean anxiety score in the intervention group on the third day decreased significantly. Indeed, anxiety is one of the most common psychological problems after heart disease, which is accompanied by emotional state associated with stress, anxiety, anger and increased activity of the autonomic nervous system along with one or more physical symptoms such as stenosis, Sweating, palpitations, tachycardia, headache, restlessness, chest pain and shortness of breath; it is one of the triggers of angina pectoris [6]. The study of Bashti et al., entitled" the effect of family visit on the anxiety of patients with angina pectoris", was consistent with our results and showed a significant decrease in the anxiety score [11]. The study of Rafiee et al., which was done to assess the effect of accompaniment on the satisfaction, anxiety and labor pain in primiparous women, also showed that in the group with anxiety, the mean score of the anxiety was significantly lower than the control group [12]. Another study conducted by Navid Hamidi et al. on the effect of family presence on the clinic on physiological characteristics, revealed that family presence on the bed does not result in hemodynamic changes and interference with the treatment process [13]. The mentioned studies have shown the positive effect of family presence on the patient's bedside and were consistent with the present study.

The results of this study were obtained with the participation of 60 patients aged 33-81 years, in a such way that 49 patients (81.7%) were male and 11 patients (18.3%) were female. In the control group, 80% of patients were men and 83.3% of the intervention group were men. The mean age of participants in this study was 52.88 years with a standard deviation of 10.73 years. In the present study, there was no significant difference in the level of education between the two control and intervention groups (P=0.465).

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