

Assessment of the depression and anxiety in patients with acute coronary artery disease

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Abstract:

Aims: Depression and anxiety are the factors that increase death risk in the patients with heart disease. This study was done with the purpose of studying depression and anxiety rates in the patients with acute coronary artery disease.

Methods: This cross-sectional study which is descriptive was conducted on 366 patients in the CCU of heart and cardiology wards of Kerman University affiliated hospitals 48 hours and 6 days after admission in 2010. A questionnaire was used for gathering information on hospital anxiety and depression. The data was analyzed using t- test and variance analysis and SPSS17 software.

Results: The mean score of anxiety was 10.12 ± 3.49 and the mean score of depression was 10.10 ± 2.69 after 48 hours of admission. After 6 days of admission, the mean score of anxiety was 10.17 ± 2.97 and the mean score of depression was 9.95 ± 2.62 . There was no meaningful discrepancy between the depression and anxiety scores in 48 hours and 6 days after the admission.

Conclusion: Due to high amounts of depression and anxiety in patients with coronary artery disease and their remarkable impact on disease consequence, effective measures are needed in quick recognition and decreasing their impacts.

Key words: Anxiety, Depression, Heart patients, Kerman.

Introduction

Coronary artery diseases are the most prevalent heart-artery diseases and the most prevalent cause for mortality around the world [1]. In 2007, these diseases were the first reason for mortality in people of up to 35 years old in Iran [2]. These diseases are the cause of 40 percent of mortality in Iran and each year 120 to 140 thousand people die because of this [3]. Studies have shown that depression and anxiety are very prevalent in the patients under medical treatment of the acute coronary syndrome [4]. Mortality is more in heart patients who got depressed after myocardial infarction [5]. Also, depression and anxiety are the factors which increase the risk of death in heart patients [4]. Thus, heart patients must carefully be pursued and treated according to depression and anxiety and also some measurements should be done for preservation [6]. Depression decreases the person's mood in controlling his/her diet, precise adjustment of physical activities, regular reference to doctor and observance of other remedial instructions and leads to lack of cooperation in accomplishing remedial plans [7].

In different studies, anxiety and depression scales in patients with artery coronary diseases are reported as followed: 40 percent anxiety [8] and 30 percent depression [9], 18 percent major depression symptoms [10], 20 percent depression [3], prevalence of all kinds of depression 52.6 percent and vital depression 21.8 percent [11], depression 66.2 percent ,anxiety 65.4 percent [12] ,depression symptoms in acute heart attack 52.6 percent [13] and these scales were reported 60.7 percent in 48 hours after heart attack and 72 percent [14] 6 days later. According to high rate of depression and its correlation with weaker pursuit of remedy process, at first, the remedial team needs to get adequate knowledge about the recognition of depression factors after heart attack and this knowledge can't be acquired unless adequate researches are done on related factors to this disorder [5]. Depressed patients are curable and their remedy leads to the improvement in heart disease medical treatment but depression remedy is successful under the 3 conditions: precocious recognition, proper and on time treatment and preservation of repetitious

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relapses [15]. Some of the symptoms of heart-arterial diseases are psychological stresses such as anxiety, depression and enmity that lead to tensing and lengthening the disease and interference in treatment and finally in improvement [10]. The prevalence of clinical depression and depression symptoms in men and women with heart diseases are higher than usual people [16]. Also, the prevalence of anxiety is high in these patients [17]. In addition, depression is directly related to mortality and morbidity in the people with acute coronary syndrome [10]. Depression plays a role in both forming and augury of heart-arterial diseases such as heart coroner artery [17], so that researchers believe that untreated depression like smoking cigarettes, increase in blood pressure and hyperlipidemia can intensify the risk of coronary diseases from 1 to 2.2 [12]. Also, anxiety intensifies the risk of heart attack 5 to 10 percent [18]. Clinical studies have reported the prevalence of major depression as 17 to 22 percent during the first year after myocardial infraction [19]. Since people with anxiety and depression need sedatives and narcotics 3 times more than others, they experience more symptoms and their immune systems are weaker [20]. Furthermore, proper managing of these disorders can lead to the improvement of heart diseases and promotion of the quality of patients' lives and also a decrease in medical treatment costs. According to the results, it can be suggested to study these patients' psychological consult request. However, in Beiraghi et al. study although the scale of prevalence of depression (72%) and anxiety (90%) symptoms were high, psychological consultation has been requested for only one patient [18]. Anxiety also differs due to gender so that 11 percent of women and 7 percent of men were anxious [21]. Depression and anxiety are considered as personal issues and the mentioned studies have shown that prevalence differs in various cultures and societies. This study is adjusted according to

the importance of psychological problems in heart patients and due to the recognition of anxiety and depression scales in heart patients referring to Kerman University affiliated hospitals and the nonexistence of a study related to this objective in Kerman and the highest number of patients referring to these hospitals.

Methodology

This is a descriptive cross-sectional study. The subjects in the study were the patients confined in the Critical Care Unit of heart and cardinal wards in hospitals of Shafa and Afzalipour of Kerman University. Three hundred sixty-six subjects participated in this study. The requirements of participation included first time hospitalization in the mentioned wards, not having any acute physical and psychological diseases.

After the interviewer explained of the objectives of this research, the patients participated in the study providing tendency and ability to answer the questions on their own satisfaction. The reason of the selection of the second and the sixth day of admission was according to the various studies such as in Hosseini et al. study. The other reasons included primary anxiety removal due to the recognition and stability of psychical condition in primary stages and admission in critical care unit and also reception of disease and finally determining of the hospital environment in accession of these disorders. A questionnaire consisted of two parts was used in order to gather the information. The first part was used for demographic properties and the second part was used for hospital anxiety-depression questionnaire which include 14 questions. This questionnaire was used for non-psychological patients. The measure of answers were gradable and 4 answers in which a score of 0-3 was included for a question. Therefore, anyone would have a score between 0-21 for which the score 0-7, 8-10 and more than 10 are known respectively, as normal and medium and

deviation of health. The odd questions were used for the assessment of anxiety and even questions for the assessment of depression. This tool was justified in 2003 by Montazery et al. Its inner stability was 78 % for anxiety and 86% for depression by Cronbach's alpha [22]. Couple t- test, independent t- test and variance sideway analysis for statistical analysis and SPSS17 software have been used. A meaningful level of 0.05 was considered for all of the analysis.

Results

The participants in this research were at the age range of 12.97 ± 59.14 and 80.1 % of the participants were men. The patients' job conditions respectively were, employers (16.9 %), self- employed (30.1 %) and unemployed (51.1 %). 84.2 %, 8.2 %, 1.6% and 2.7 % of the participants had high school diploma, associate diploma, BA/BS and MA/MS degrees, respectively. Their marital status included: single (2.2%), married (87.7%), widow (17.9%) and divorced (0/3%). 41% of patients smoked. The average of anxiety score was 10.12 with the standard deviation of 3.49 in 48 hours after admission. The average of depression score was 10.10 with the standard deviation of 2.69. The average of anxiety score was 10.17 with the standard deviation of 2.97 six days after admission and depression score was 9.95 with the standard deviation of 2.62. T-test did not show any meaningful discrepancy between depression and anxiety scores 48 hours and six days after admission. Depression and anxiety scores 48 hours and six days after admission are shown in table 1.

Table 1. The effect of the demographic variables on depression and anxiety in patients hospitalized in cardiac wards 48 hours and six days after admission.

Using Independent T-test, no meaningful discrepancy was observed between men and women after 48 hours and six days after admission either. A meaningful statistical difference was found in the anxiety after 6 days between different educational groups and it

showed that there was a discrepancy between anxiety of the patients with MA/MS and with high school diploma and associate diploma degrees and the anxiety score of patients having MA/MS degree was less than the other two groups. There was a meaningful statistical difference between various educational groups in depression score, 48 hours after admission using variance analysis test. And the patients with MA/MS degree had a higher score compared to the ones with diploma. The comparison of depression in 6 days after admission showed that depression of the participants with MA/MS degree was more than the participants with BA/BS or associate diploma. No meaningful statistical discrepancy was found in various educational groups between 48 hours and 6 days after admission. No correlation was observed between age and anxiety 48 hours and the first 6 days after admission but there was a negative correlation between age and depression and it was shown that depression decreased by aging.

Discussion

No difference was found between anxiety and depression 48 hours after admission and 6 days later. Anxiety and depression as two psychological disorders must be included in dangerous factors of coronary artery diseases [23]. Depression is associated with increase in mortality after myocardial infarction and anxious patients more side effects after severe myocardial infarction [24]. According to the results of this study, the average age of the patients was 59.14 with standard deviation and Eken et al [17] with average age of 50.9 with standard deviation of 12.97 compared to Hasanpour et al. researches [2] with average age of 55.7 and Eken et al with 67% men and 33% women. In this study, 60.1 % of the patients were men and 30.1 % were women which was less than the study of men's rate, but it was more, compared to Hasanpour et al. in Shahrekord [2] with 57% men and Modabbernia et al. [11] with 58.8 % .No meaningful correlation was found between

Table 1:

variables		anxiety		depression	
		48hours	6days	48 hours	6 days
gender	Male	9.76±3.52	10.07±2.91	10.17±2.80	9.92±2.69
	female	10.47±3.43	10.31±3.12	9.95±2.45	9.93±2.47
Educational Level	Diploma & below	9.96±3.50	10.19±2.85	9.92±2.49	9.73±2.35
	Associate diploma	10.97±3.32	11.03±3.28	11.03±2.51	2.86 ±2.94
	B.A	9.83±2.48	9.33± 3.14	10.33 ±2.25	9.83± 1.72
	M.A	4.52 ±8.66	6.60±3.65	13.40±2.45	13.90±2.18
Age		P= 0.64	P= 0.96	P= 0.001	P= 0.02
		R=- 0.02	R=- 0.00	R=- 0.16	R=- 0.11
consumption cigarette	has	3.29±10.22	2.52±10.31	9.93±3.67	9.92±2.47
Marriage status	Doesn't have	10.46±2.72	9.89±2.35	10.06±3.22	9.96±2.75
	Single	8.57±5.53	9.37±5.18	12.87±0.99	11.62±1.99
	Married	10.00±3.50	10.21±2.95	10.16±2.66	10.07±2.60
	widow	10.96±3.16	11.03±2.84	8.44±2.36	8.17±2.28

anxiety and gender in the first 48 hours of admission and 6 days later which coordinated with Soleimanni et al. research in Kerman.

In a study on anxiety rate in initial 48 hours, 12% of the patients had severe anxiety which was less in comparison with researches of Honson et al. [25] with 19.7 %, Boronz with 40% [9], Beheshti et al. with 65.4 % [12], Beiraghi with 90 % [18] and Nazari et al. in cardiac wards of Kerman hospitals with 50.4% [26], but it was higher as compared to the researches of Vahabbi et al. with 6.6% [27] and Soleimani et al. with 2% [28]. This difference could have resulted from the used tools and medical personnel and families' emotional and social supports and culture that need further studies. Anxiety is a rampant physiological feeling in 50% of the subjects being hospitalized in heart critical care unit [29]. Most of the patients in heart critical care wards feel anxious in the first 48 hours [30]. Anxiety rate was more than normal in patients in heart critical care units [27]. Anxiety had impacts on the patients' physiological reactions such as respiration rate, heartbeat, blood pressure, myocardial oxygen disposal and epinephrine and norepinephrine plasma density, therefore, nurses need to identify anxiety in the patients and try to reduce it by

using proper methods [31]. Non-medicinal ways like training patients, relaxation and music can be effective [30]. In a recent study, 19.7 % of patients had anxiety symptoms in the initial admission which decreased to 16.1, 16.5, 14.1 and 16.8 % respectively after 3, 6, 12 and 18 months [25]. This implies that this study's findings had correlation with the similar research and patients' anxiety process that decreases after early stages of admission and after gathering information and stabilizing early acute status.

Clinical studies have reported that the prevalence rate between 17 to 22% during the first year after myocardial infarction is more in women [19]. Depression rate has been reported 13% in common people and in heart patients 28% from which 15 to 20 % has been reported as major depression and the same rate for minor depression after myocardial infarction [25]. In this study, the rate of acute depression was 7.7 % which was less than the other studies, probably it was due to the short gap between study and heart attack and it could not be compared to one year statistics.

More than 50 % of the patients who had heart attack for the first time, got afflicted with depression and the depression rate was more in single women and those with lower educational

degrees. In the present research, 72.2% of men and 27.8 % of women had severe depression. Severity of incipient depression and its stability in 6 days later were more in women than men. Since depression after heart attack had a role in augury such as fixed factors like hypercholesterol, depression has increased simultaneously with a heart attack of 2-13% and a year later to 20-30 % [14]. In the current research, depression rate in the 6th day decreased to 6.8 % but in Honson et al. study [25], 13.6 % of the patients were depressed at the beginning and it decreased to 13.4, 14.7, 10.2 and 13.7 respectively, after 3, 6, 12 and 18 months due to other studies, the results became similar in total statistics.

No meaningful relationship was found between depression and gender in the first 48 hours of admission and 6 days later which, according to the studies of Modabbernia et al. [1] and Soleimani et al. [28] who did not report any relationship between gender and depression. But the prevalence of depression in the similar study [14] was 24.8% in women and 27.8% in men which is in accordance in the results of other studies. There was a meaningful relationship between the educational level and depression in the first 48 hours ($p=0.001$) and 6 days later ($p=0.000$) that was relevant to a similar study in which the relationship between education and depression was meaningful [11], but it was different with Soleimai et al. study [28].

This difference probably was due to various tools in the study and more appropriate remedial services and increase in the patients' knowledge on heart disease and pursuit process. Whereas, recently many studies have required the precise determination of anxiety and depression and the mentioned disorders causing heart problems [32] and according to the anxiety and depression rates in this study, it is suggested to consider remedial programs related to the patients' problems as well as determining the mentioned disorders.

Conclusion:

According to the results of this study, two disorders of depression and anxiety having significant impact on the heart patients with high prevalence among heart patients need effective measurements in quick recognition of harmful effects and decreasing them by nursing personnel.

Acknowledgments

The researchers would like to thank the Vice President for Research and Technology of Kerman Medical University, Physiology Research Center and Research Committee of HSR which made this study's incentives available by approval of this schema numbered 88.92.

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