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Psychological problems and quality of life in patients with cardiac rhythm management device (CRMD)

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ABSTRACT

The studies which have done on patients who have cardiac rhythm management device (CRMD such as ICD and pacemaker) showed that using this device has been accompanied by losing quality of life and mental health situation of patients. Anxiety in these patients has been related with their life quality. Purpose of this study was check of their psychological problems (anxiety and depression) and the relation of these factors with their quality of life. This study has been done by cross-sectional descriptive method. Sampling method is census of whole patients who have gone to AFSHAR heart center (YAZD) which the number of sample was about 110 (41.8 percent women and 58.2 percent men). The patients have been answered standard questionnaire of HADS (hospital anxiety depression scale) and quality of life (SF36). Analyzing data has been done by using spss 20 software. Anxiety, depression and quality of life mean in these patients are 5.24 ± 4.06 , 4.88 ± 4.01 and 60.8 ± 17.40 . anxiety mean has a significant relation with mean quality of life of patients ($P=0/000$) and life quality of these patients have been decreased by anxiety and depression increasing amount. The patients who have reported high anxiety and depression mean are in low life quality group. With regard to the results of these studies paying attention to mental problems anxiety in patients who have used pacemaker and defibrillator devices is necessary, because it increases their quality of life and success probability of cure.

Key words: Anxiety, Depression, ICD, Pacemaker, QOL

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1. INTRODUCTION

Cardiovascular diseases are the most important reason of dying in industrial countries and one of the main reasons of dying in developing countries. The patients who suffer this disease are the most one in Iran base on the studies (1, 2). It has been estimated that 16.7 million people die every year because of these disease (29 percent of whole death in the world) (3). One of the cure and prophylactic maneuvers in caring cardiovascular patients is using electrical pacemaker for hear (4). About three million people in the world use pace maker and 600000 people are prescribed to use it every year (5). Based on the reports of the magazine of heart association of Iran every year 550 people are prescribed to use permanent pace maker (6). Using defibrillation and pacemaker in patients is useful, because they prevent sudden death and control dangerous cardiac dysrhythmia

(7). Placing external device in body especially in heart which symbol of affection and feel is deemed to be an important event in life (8). Therefore, putting pace maker or defibrillator in the chest may causes some changes in phantasm and may makes psychological, social and life quality problems and may causes emotional problems and it affects family and social relations, physical activities, psychological situation and life quality (9, 10). In some studies, it has been pointed to experiences like fear (11), stress, depression (12), mental conflicts, psychological challenges (13), and financial problems (14); As it is said, one of the most important effects of the device is its effect on life quality. Life quality that means the ability of someone in doing life satisfactorily includes large amount of body factors and properties that is correlated with psychological situation (15). Scientific evidences show that 32 percent of cardiovascular ones in the hospital are

depressed which is continuing after a year. It has also reported that stress of patients was about 26 percent that is increased to 40 percent (16). Some other studies have been shown that more than 20 percent of patients had shock horror (ICD) and more than 55 percent have mood disorders too (17, 18). Problems like fear, feeling angry, depression and stress can make disorder in the embedded device compatibility (7), but some of the researchers have found that using these devices increases life quality of the patients and stress of these patients was similar with ones who do not use them (8). Carol found in his studies that patients progressively get compatible with the device through the year, but they have psychological, social and physical problems in the first 6 month of the year (9). Spindler specified in a research that there is a significant relation among psychological problems, depression, stress, arrhythmia events and repeated shock drain (19) and the other researches have shown that most of the patients live with the low life quality because of low self confidence in life doing, stress and depression and these happens because of bad recovery (20). Because of the devices complexity, healthcare team pay attention to physical problems and device function checking and psychological problems do not check much and because of untreated situation of psychological problems, patients have to pay many expenses to cure themselves (21). These statistics show that paying attention to psychological problems of patients is the first thing that they should pay attention to that and it is necessary to prevent or cure when determining the amount of impairment. Therefore, stress and depression amount can be decreased by psychological instructions like cognitive therapy and relaxing instructions. With regard to high efficiency of heart rhythm correction device in prevention of sudden cardiac death and progressive use of that and spreading stress and depression after using device, paying attention to psychotherapy interventions of patients is important for researchers in this study and it has been tried to study the relation of life quality of patients and their psychological situations.

2. MATERIALS AND METHODS

This study has been done by cross-sectional descriptive method on the all patients who have gone to AFSHAR heart center (Yazd) to use the cardiac rhythm management device (pacemaker and implanted defibrillator). Sampling is census in research time (performance time) that 110

people (41.8 percent women and 58.2 percent men) with the mean age of 54.4 have been made present research. All the patients have been answered the questionnaire that includes demographic properties, age, gender, marital status, job, time and kind of using device. Then they have answered QOL (quality of life) questionnaire (SF36), depression and anxiety questionnaire (HADS, hospital anxiety depression scale). These questionnaires have international value and favorable credit in Iran (22, 23). Statistical data have been analyzed by spss20 software. Descriptive statistics have been used for calculating measures of central tendency and dispersion of studied factors based on different levels of T, r-person tests, independent, F (ANOVA), and used for testing demographic features relation, anxiety, depression and life quality. Significant levels of statistical results have been considered in calculations ($P < 0.05$).

3. RESULTS AND DISCUSSION

The least age of respondents is 10 and the most one is 82 and the mean age of them is 54.4 years based on the results. 39.1 percent of the respondents are housewives, 21.8 percent is practitioner, 10 percent are retired and 29.1 percent is unemployed. 11.8 percent is single and 88.2 percent are married. 25.5 percent has been used pace maker and 75.5 percent used defibrillator. The least time of using device is a month and the most time is 11 months and the mean time is 6/6 months. In these patients stress mean is 5.24 ± 4.06 , depression mean is 4.88 ± 4.01 and life quality mean is 6.08 ± 17.40 . Checking ordinal index of anxiety in patients shows that 7.72 percent is normal, 20 percent are edgy, 5.5 percent is average and 1.8 percent is high. Ordinal checking of depression index also shows that 75.5 percent are normal, 6.4 percent is edgy and 1.8 percent is high. Based on anxiety, depression and QOL it was not significant difference among gender, job, marital status, kind and duration of device using. But the relation of age and life quality shows that there is a significant difference among life quality in different age groups. So that, age group that is under 35 years old have reported the most life quality and after that 35 to 60 years and upper 60 years have life quality and then the mean difference among groups are significant. Mean, standard deviation and the significance of test, the relation of age and anxiety, depression and life quality is presented in Table 1.

Table 1. Mean and standard deviation of anxiety, depression and quality of life based on age groups

Age groups	Anxiety	QOL	Depression
Under 35 years	4.8±2.8	68±13.1	4.8±3.5
35 to 60 years	5.8±5.1	60.5±18.9	5.3±5.1
Over 60 years	4.9±3.5	57.8±16.9	4.5±3
F(ANOVA)	0.61	2.97	0.51
P	0.54	0.05	0.602

In analyzing the relation among anxiety, depression and life quality in patients show that there is a significant

relation between these indexes and the relation is negative, so that by increasing depression and anxiety mean in

patients their life quality decreases (Table 2).

Table 2. The relation MEAN QOL, anxiety and depression in respondent patients

Psychological problems Life quality	Anxiety	Depression
R-Pearson	-0.726	-0.744
P	0.000	0.00

Studying this relation in ordinal level and ANOVA test between anxiety/ depression and life quality confirms this relation. So that we can see decreasing of life's quality

mean in people who are in stress and depression medium and high groups (Table 3).

Table 3. Mean and standard deviation quality of life (QOL) based on anxiety and depression of patients

Ordinal Level HADS	QOL based of anxiety	QOL based on depression
0-7 normal	66.4±14.6	66.5±14.1
8-10 boarderline	51.8±14.4	49.9±14.3
11-15 moderate	31.2±5.03	30.8±4.7
16-20 sever	30.1±0.000	30.1±0.000
F(ANOVA)	18.9	22.9
P	0.000	0.000

Scientific evidences show that high amount of depression and anxiety in cardiovascular patients is one of the most important predictive factors that decrease the life quality in this group of patients (24). Present studies results showed that psychological situation, depression and anxiety have relation with life quality of patients who have heart rhythm correction device and life quality of these patients decrease by increasing the amount of anxiety and depression. The analysis of anxiety and depression average based on life quality also show that the people who are in higher level of depression and anxiety have reported low life quality average. Therefore, it can be said that stress and depression determine the amount and level of life quality in these patients. These results have been confirmed by cardiac researchers that have been studied life quality based on psychological situations (12, 16). Therefore it can be said that in patients who use heart rhythm correction device paying attention to patient's mental consequences, teaching relaxation methods, psychological interventions and workshops on anxiety and depression coping skills will increase life quality and cure success. Some of the previous studies have not shown the psychological interventions on mental health of ICD patients. In Newall and Sneed studies it has been shown that intervention as teaching skills to cope with anxiety could not make a difference between depression and anxiety in patient (7, 22). Therefore paying attention to the kind of psychological interventions, high amount of depression and anxiety and demographic properties have high necessity in increasing life quality of patients. As it is shown in this research the average of anxiety was higher than depression and there is a significant relation between age and life quality of patients and in higher age groups life quality has been decreased. Therefore, in psychological

interventions it is necessary to pay attention to the age group and stress and depression amount because of increasing life quality. anxiety and depression level of patients have not shown significant relation with age, gender, marital status, kind of job, duration of using device, duration of using and the kind of the device. These results are consistent with results of Newall and Spinder et al. (25, 26). Newall and Spinder have also said that there is not a significant relation among gender, age, life quality, duration of device using and anxiety and depression. But they are inconsistent with foreign researches (25, 26). Presented scientific evidences say that high amount of anxiety and depression in women who suffer heart disease is because of low social and family supporting, while it is considered there is not any difference in family and social supporting in Iran for women. Final purpose of medical proceedings is increasing the life quality of the patients (27).

4. CONCLUSION

With regard to the results of this study, paying attention to psychological problems anxiety and depression in patients who have used pacemaker and defibrillator is necessary and it increases life quality and cure success probability. It is considered that nurses should pay more attention to psychological instructions and should try to protect emotional security and controlling good feelings in these patients. According to demographic properties of patients and demographic properties relation and anxiety and depression in them, nurses should do the training discharge to reach the most quality in life and cure.

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AUTHORS CONTRIBUTION

This work was carried out in collaboration among all authors.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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