

Original Article: Relationship between Cardiac Rehabilitation before Coronary artery Graft Surgery on Parameters of Surgical Satisfaction

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ABSTRACT

Introduction: Cardiovascular care has become an important part of the continuity of care for cardiac patients. Its use is recommended in today's cardiac diagnostic procedures. Despite well-documented morbidity and mortality outcomes, cardiac services are underutilized. The basic principles of cardiac therapy are explained in detail. Improvements in cardiac referrals, recording, and completion are possible using new performance measures. **Material and Methods:** Most guidelines recommend moderate-intensity exercise (60 to 75% of your maximum heart rate based on your target heart rate or ideal heart rate) for at least 30 minutes a day, at least 5 days a week, and preferably every day. Borg aerobic exercise, such as brisk walking, should be supplemented with daily water sports (such as walking after work, gardening, and housework). **Results:** Regular physical activity has been shown to have many cardiovascular benefits, including weight loss, lowering blood pressure, controlling diabetes and improving blood lipids. An analysis of 11 rehabilitation studies involving 115 patients found that regular physical activity was associated with a 28% reduction in all-cause mortality (6.2% vs. 9.0%) with a difference of 0.72, 95% CI 0.54–0.95), there was a 24% reduction in myocardial infarction recurrence, but this was not significant (hazard ratio 0.76, 95% CI 0.57–1). **Conclusion:** Cardiovascular therapy has been shown to be safe and effective in improving quality of life and reducing morbidity and mortality in cardiac patients. Despite proven benefits, it is still not used in the treatment of heart disease. More patients will benefit from effective technology by improving referral and participation in cardiovascular care programs and personalized services involving the patient's condition.

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Introduction

Cardiovascular disease is another important factor affecting the quality, performance and sexual satisfaction of individuals [1-3]. This group of diseases is one of the most common chronic diseases and the cause of death of adults around the world, and the prevalence of this disease doubles with each passing decade of life. Dysfunction and decreased sexual activity are common in heart patients and affect their quality of life and can be associated with the development of psychotic disorders and

ultimately, will reduce life expectancy for patients [1]. Among these, one of the major sexual problems of heart patients has been reported to be a decrease or lack of sexual desire, which includes anxiety about sudden death during sexual activity, misinterpretation of natural signs of sexual arousal such as increased heart rate and respiration as cardiac symptoms [2]. And depression after a heart attack, which ultimately leads to sexual dissatisfaction, endangering mental health and resulting in family breakdown, and also, one of the factors associated with readmission of these patients, inappropriate sexual activity after a heart attack (Figure 1).

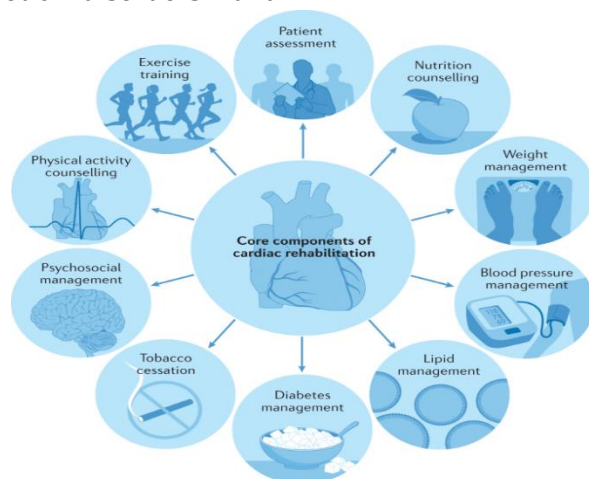
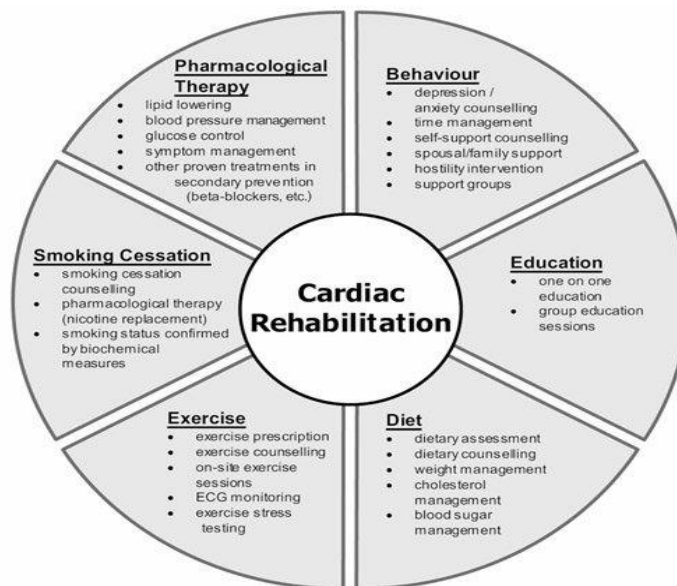


Figure 1: Cardiac Rehabilitation

Coronary artery bypass graft (CABG) surgery is one of the most common major surgeries, with approximately 400,000 CABG surgeries performed annually in the United States alone, and is a method in which autologous arteries or veins are used as partial or partial coronary artery bypass grafts [4-6]. Completely blocked by atherosclerotic plaque, it is used and many of these patients require surgical treatment such as coronary artery bypass graft surgery [4]. The results of various studies indicate that CABG has a negative effect on all stages of sexual

function. Based on this, it can be acknowledged that one of the educational needs of patients after myocardial infarction is how to perform sexual activity [7-9]. Accordingly, it is recommended that issues related to sexuality and marital relations be part of the topic of medical care for cardiovascular patients, be given the necessary information in this regard, and consult with the patient and his spouse in this regard to avoid pressure. Their psychology should be reduced (Figure 2).



Current Controlled Trials in Cardiovascular Medicine

Figure 2: Cardiac Rehabilitation and Health

Among these, cardiac rehabilitation is a set of activities designed to improve the patient's condition in physical, physiological, psychological and social dimensions, adjust risk factors and prevent secondary recurrence of cardiovascular events, and includes strategic therapy and training to stimulate adaptive behaviors [10-12]. Performance is desirable in life, so that the patient's quality of life is improved and his individual limitations are reduced. One of the activities performed in the cardiac rehabilitation program is sexual counseling in the cardiac rehabilitation program, which can improve sexual problems and sexual function. Safety in sexual activity is after an event or a cardiac process [6].

Unfortunately, despite the high prevalence of sexual disorders, few of these people seek medical attention [13-15]. As a result, this range of symptoms, along with unspoken social and cultural factors, and if not treated properly, can lead to chronic, psychological disorders, and ultimately deprivation of the couple's peace and comfort [16-18]. Considering the direct effect of sexual function on life satisfaction and consequently the high quality of life of patients, it is necessary to pay attention to it [7].

Numerous studies by researchers have shown a high prevalence, lack of sexual satisfaction in heart patients and the existence of negative effects on patients' quality of life. The results of research also show that most of the interventions performed to improve sexual function were based on cognitive-behavioral counseling; According to the above, the aim of this study was to evaluate the effect of cardiac rehabilitation after coronary artery surgery in postmenopausal women on their sexual satisfaction [19-21].

Material and Methods

Study design: The present study is a cross-sectional descriptive-analytical study of all postmenopausal women who are candidates for coronary heart disease in 2014-2015. A similar article was used to determine the sample size and a pilot study was used to determine the sample size more accurately. Sampling was available by method [22-24]. In this cross-sectional study, the sample size was determined to be 108 according to the same study, taking into account the standard deviation of the sexual satisfaction score of 37.5 and the level of confidence (95%) and the test power of 80%.

Inclusion and Exclusion Criteria: Participants in the present study, ie the study population, heart patients had the following criteria: age over 45 years, menopause, not having any known psychological problems, including depression based on the patient's medical record and being married. Or having a sexual partner. Exclusion criteria were: severe family conflicts and other family crises, addiction, divorce and threat of divorce at the time of the investigation (based on the patient's statement), as well as cognitive and speech disorders and physical or mental disabilities. That has been confirmed by a reputable doctor.

Methodology: A questionnaire consisting of two parts (demographic and Larson sexual satisfaction) was used to collect data. The first part of the questionnaire included questions such as age, gender and level of education to describe the personal characteristics of research units. The second part is the Larson Sexual Satisfaction Questionnaire which has 25 questions in a five-choice Likert scale. In questions 1-2-3-10-12-13-16-17-19-21-22-23 the option never gets a score of 1 and the option always gets a score of 5, and in questions 4-5-6-7-8- 9-11-14-15-18-20-24-25 The option never gets a score of 5 and the option always gets a score of 1. A score of 25 to 50 was equivalent to lack of sexual satisfaction, a score of 51 to 75 was equivalent to low sexual satisfaction, a score of 76 to 100 was equivalent to moderate sexual satisfaction, and a score of 101 to 125 was equivalent to high sexual satisfaction. The scientific validity and reliability of this questionnaire has been proven. The results of reliability coefficients obtained using Cronbach's alpha method for positive questions were 0.803, negative questions were 0.788 and also internal correlation index was 0.801, which indicates the appropriateness of the reliability of the whole instrument and indicates that the questions being measured They are a similar

concept and structure and there is no conceptual dispersion in it. The researchers reported the reliability of the questionnaire using the test method as 0.98 and 0.89, respectively. Formal and content validity methods were used to assess the validity of the questionnaire. For this purpose, the questionnaire was given and handed over to 10 experts in this field and their corrective opinions were included in the questionnaire. After receiving an official letter of introduction from the Vice Chancellor for Research of Tabriz University of Medical Sciences and presenting it to the officials of Shahid Madani Cardiac Rehabilitation Center, which has the only cardiac rehabilitation center in the hospital, he is invited to participate in the research. After explaining the objectives of the study, a questionnaire was given to the patients and while emphasizing the confidentiality of all information, they were asked to fully answer the questions. For added convenience, patients could take the questionnaire home and return it to the center on their first visit. Questionnaires were distributed twice among the participants and the necessary information was collected. The first time, before starting cardiac rehabilitation programs and the second time, after attending at least 10 sessions of cardiac rehabilitation programs [25].

Data analysis: In this study, first the collected data from different stages of measurement (pre-test and post-test) were encoded and then analyzed using SPSS software version 18. Central data, dispersion and proportional statistical tests were used to analyze the data. The normal distribution of quantitative study data was measured using the Kolmogorov-Smirnov test. The mean of sexual satisfaction after the intervention compared to the beginning of the study was measured using paired t-test or its nonparametric equivalent Wilcoxon. Analysis of covariance was used to determine the effect of the intervention on the

outcome (sexual satisfaction) by modulating the effect of possible confounders. The significance level of the tests was considered $P < 0.05$.

Ethical Considerations: This study was conducted after approval by the Ethics Committee of Tabriz University of Medical Sciences and the participants in the study signed an informed and written consent.

Results

To compare the sexual satisfaction score before and after the intervention, at the beginning of the normal distribution, the difference in sexual satisfaction score before and after the intervention was examined. Results (skewness and elongation values and Shapiro-Wilk test; $P < 0.05$) Non-compliance of patients' corresponding values in the variable level of sex satisfaction score difference before and after intervention on the bisector line It was an intervention (Figure 3).

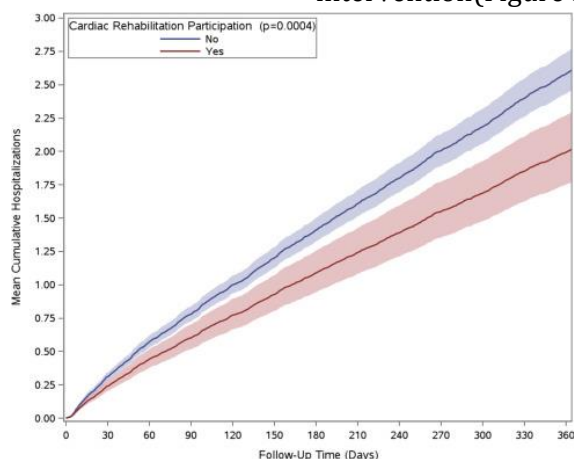


Figure 3: Cardiac Rehabilitation outcome after CABG

Based on the results of the study, there was a very weak non-significant positive correlation between sex satisfaction score before and after the intervention with age ($r=0.025$, $P=0.795$). The difference in sexual satisfaction scores before and after the intervention was higher in women than men, but the observed difference was not statistically significant ($P=0.841$). Also,

the difference between the scores of sexual satisfaction before and after the intervention and the place of residence of individuals ($P=0.896$), employment status of individuals ($P=668.0$), level of education ($P=290.0$) and economic status ($P=0.161$) No statistically significant difference was observed (Figure 4).

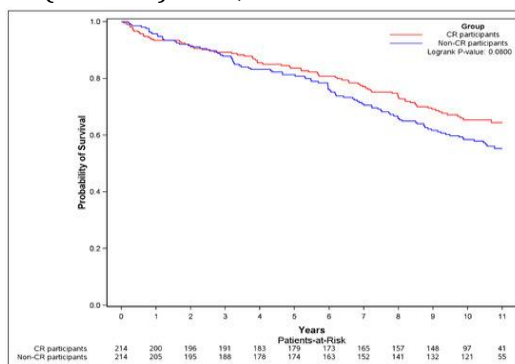


Figure 4: Result of Cardiac Rehabilitation in surgery satisfaction

Discussion

The aim of this study was to determine the effect of cardiac rehabilitation on patients' sexual satisfaction after coronary heart surgery [26-28]. In the present study, the level of sexual satisfaction of patients after the intervention was reported to be moderate and up compared to before, and in no case, the level of sexual satisfaction of patients was worse than before, which was in line with the results of previous studies [30-32]. In a qualitative study conducted by researchers to determine patients' perceptions of cardiac rehabilitation after coronary artery bypass graft surgery, one of the experiences of patients after coronary artery surgery from participating in cardiac rehabilitation programs was to reshape life. Items such as achieving physical fitness, life expectancy, and returning to the community were consistent with the results of the present study, which suggested improving their quality of life [8].

In this study, there was a very weak non-significant positive correlation between the difference in sexual satisfaction scores before and after the intervention and no statistically significant difference was observed in the two age groups under 60, 60 and above. Some studies have reported that plasma testosterone levels are lower in patients with CAD than in patients without CAD [33]. Explaining this result, it can be said that because the prevalence of heart disease is higher in the elderly, testosterone administration in the elderly can be associated with improved sexual activity and reduced marital problems [9].

The difference in sexual satisfaction scores before and after the intervention was greater in people without comorbidities than in people with comorbidities [34]. Although underlying diseases accelerate the process of atherosclerosis, causing changes in the endothelial vessels and the formation of atherosclerotic plaques, they reduce the blood

flow to the genitals and cause fibrosis in the organs and dysfunction [35-37]. Also, a history of underlying disease can lead to sexual dysfunction by accelerating the process of atherosclerosis and other hormonal disorders, reducing estrogen or testosterone [38-40]. There was no statistically significant difference between the score of sexual satisfaction before and after the intervention and employment status, education level, economic status, urban / rural residence and the number of years of marriage, which was consistent with the results of the study of researcher [10]. Accordingly, if the staff of the Cardiac Rehabilitation Center is aware of patients' satisfaction with the programs and how they are effective, these programs will be more effective [41]. This awareness of employees can be helpful in recognizing how programs are effective in order to strive for greater effectiveness and by emphasizing the positives and reducing or eliminating the negatives [11].

One of the limitations of the present study was the non-cooperation of patients. We tried to provide the patient comfort for responding by creating a suitable and secluded environment. Also, due to Iranian culture, some questions were difficult for participants to answer; The researcher's effort was to motivate the patient to respond by stating the exact objectives of the research and ensuring the complete confidentiality of the information [12].

Among the suggestions in this regard, based on the results of the present study, is the development of a comprehensive training package for patients after coronary artery surgery for training in cardiac rehabilitation programs and increasing sexual satisfaction of couples [42-44]. Also, due to the increasing statistics of coronary heart surgery and the incidence of complications such as impaired sexual satisfaction that can affect the continuity and quality of life of couples, similar studies in other cultures can be done using the current

research process [45-47]. He paid attention to different societies and cultures and took steps to improve the quality of life of people by using the results obtained with proper planning [48-50].

Conclusion

Sexual dysfunction and sexual problems are common in patients after coronary artery bypass graft surgery, but this is ignored despite the recommendation of health organizations to evaluate and counsel sexual issues in heart patients. According to the results of the present study, it is necessary to pay more attention to the sexual performance of patients who are candidates for coronary artery surgery and prepare the patient to face future conditions with the necessary training before, during and after surgery and to create a culture to participate in rehabilitation programs. Postoperative heart improves the quality of sexual function and ultimately improves the quality of life.

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