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Relationship between physical activity and quality of life with health related factors in female with coronary artery disease

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ABSTRACT

The present study was conducted with the aim of studying physical activities and quality of life in relation with women suffering from Coronary heart Disease. The methodology of the study was descriptive-sectional and the correlation between the variables was analyzed too. The population of the study is the total number of women who are affected by coronary heart disease and seek medical advice from Shahid Chamran cardiovascular center in Isfahan and were operated by angiography. They were 420 people among whom the sample was chosen by purposive sampling. The quality of life questionnaire SF-36 and factors of the amount of physical activity were used in the present study. The results indicated that the amount of physical activity and quality of life of is lower than the average amount and the correlation coefficient between physical activity and quality of life was not significant. Also, the findings of the study showed that correlation of Body Mass Index (BMI) and Waist-to-Hip Ratio (WHR) with body activity is significant and reverse ($\leq p$ 0.05). A positive and significant correlation was observed between women's education and their quality of life. It seems that women who suffer from coronary heart disease could probably bring their BMI and WHR close to desirable levels if they increase their body activity. It is observed that their quality of life is increased by increasing their body activity.

Keywords: quality of life, body activity, Body Mass Index (BMI), Waist-to-Hip Ratio (WHR), coronary heart disease

INTRODUCTION

According to the development of industry, mechanical life and reduction of body activity and also people-seeking comfort, the illnesses rooted from inactivity have been expanded vastly within the present society. Among these illnesses, the share of cardiovascular diseases is more than the others because it is directly related to body activities (1). Cardiovascular diseases are considered as one of the most common reasons of death in the present societies, especially in more industrial societies. One of the main reasons of Coronary Heart Disease is quite related to lifestyle in which saturated fat in foods, excessive calorie and salt, obesity and physical inactivity could be seen (2). Curing cardiovascular diseases are encountered with their own specific limitations and often, treatment methods do not have desirable effects. Therefore, one of the best strategies for fighting these kinds of diseases is prevention from catching them that this strategy is possible through adjusting the risky and predisposing factors of cardiovascular diseases(3). However, recognizing the risky factors in cardiovascular diseases might be the first step in their adjustment and consequently preventing their appearance. The risky and predisposing factors of cardiovascular diseases are those ones which play a role in creating trouble for blood circulation and they are called dangerous factors. These factors include high blood pressure, high blood cholesterol, high blood triglyceride,

obesity, smoking, lack of appropriate quality of life, and stresses and tensions. These factors, along with heredity, age and sex are considered as threatening factors of cardiovascular diseases. According to research findings, the danger of CHD expansion is twice in inactive people in comparison with active ones (4). For this, adopting an active method and doing regular body activities in free times, controlling quality of life and stressful factors, controlling nutrition, avoiding smoking, controlling weight etc. are serious strategies for preventing to catch cardiovascular diseases. Lack of movement and body activity could be among the controllable factors for coronary artery and also is considered as one of the important elements of exercise rehabilitation of heart diseases (3). Emphasizing on body activity is one of the effective methods for improving the conditions of heart and vessels and also amending and improving the risky factors of heart. By making the injured person do exercise, the time of his returning to the regular life will be shorter and the quality of life will be returned to him. The programs which can bring improvement to the function of cardiovascular system are not very time consuming. Iran approximately has a population of 75 million people from which about 35 million are more than 35 years old. Research on risky factors of cardiovascular diseases in 27 countries like China indicate that more that 50 percent of people are unaware of waist circumstance and abdomen fat as predisposing factor of cardiovascular diseases (5). According to the quite large number of middle-aged population in Iran one can say that about 50 percent are over 30 and the age of this group and inappropriate patterns of nutrition is adding to the number of people with cardiovascular diseases each year. About 40 percent of death reasons of adults in Iran is cardiovascular diseases and this percent is increasing quickly (6,7). Neurological stress, unhealthy food, obesity, physical inactivity, smoking etc. are among the risky factors of heart failure that some measure should be taken in order to change the lifestyle to prevent these diseases. Although cardiovascular diseases are the main reason of death in the present societies (8), and it has been reported that doing exercise has an important role in reduction of risky factors of cardiovascular diseases especially reduction of death rate (9), unfortunately, a very small percent of women participate in sport programs. It seems that this fact is due to women's lack of knowledge and awareness from appropriate sport programs. Because middle-aged women have social and movement limitations, the present study analyzes their quality of life, body activity and the condition of their heart function after heart failure which is dependent to their life conditions before heart failure. Evaluation of life quality and body activity in order to prevent coronary heart diseases in people is necessary and essential. Therefore, this study attempts to investigate the relationship between quality of life with health of women suffering from coronary heart diseases.

MATERIALS AND METHODS

The population of the study includes all of the women suffering from coronary heart diseases and referred to ShahidChamran Heart Hospital of Isfahan that were operated by angiography. Among 420 women referring to ShahidChamran heart hospital of Isfahan who were suffering myocardial infarction or were operated by angiography and were ended with bypass surgery, 190 ones were chosen voluntarily as the sample of the study. It should be mentioned that all of the participated sick people in the study had the required criteria for participating in the study. All of them had coronary artery. Procedures: after choosing the subject and its approval in council of graduate studies at research Science University, the written request of Chamran Hospital cooperation with me was sent to the hospital and the agreement of officials' cooperation to conduct the thesis was worked out. The height of the subjects was calculated in standing position with tape meter and SEGA tape scale with measurement accuracy of 0/1 kilogram was used to measure their weight. Body mass index of the subjects, as a body combination index, was calculated from dividing the weight of the people by kilogram to square of the subject's height by meter. For this, for measuring the waist the thinner part of the waist and for measuring largest part were measured by tape meter. The amount of coronary artery was determined by exercise test and angiography and the percent of the occlusion was recorded. The systolic and diastolic blood pressure was recorded one time during angiography and another time by using a Richter mercury manometer with the measurement accuracy of 1 mmHg. Finally, the quality of life was taken by means of quality of life questionnaire sf-36. This questionnaire contains 36 items that evaluate 8 different areas of health. These areas include general health, physical health, limitations in accomplishment because of physical reasons or emotional reasons, body pain, social reaction, tiredness or happiness, psychological health, from which physical dimension includes (10 items), physical accomplishment (4 items), body pains (4 items), general health (5 items), tiredness or happiness (4 items), social reaction (2 items) emotional accomplishment (3 items) and psychological health includes(5 items) that evaluates the quality of life. The questionnaire scoring is from zero to one hundred. The closer the score is to 100 the more is quality of life and the closer is the score to zero the person's life has a lower quality (Montazeri et al. 2005). Reliability index of quality of life scales and body activity were 0.78 and 0.81 respectively. Data analysis: in order to analyze the data descriptive analysis including frequency, mean, standard deviation and interpretive statistics were used as follows. To determine the relationship between the two variables Pearson and Spearman correlation test was used.

RESULTS

Diagram 1 shows that social reaction with 67.17 has the highest mean score and accomplishment limitations rooted from physical health condition with 5.13 has the lowest mean score. Also, Table 1 indicates that body activity, BMI, and WHR have taken the mean scores of 39.05, 31.75, and 0.85 respectively.



Diagram 1: mean comparison of quality of life subscales

Table 1: mean comparison of body activity, BMI, and WHR

Statistic index	mean	standard deviation
	Subscales	
Physical Activities	39/05	11/17
BMI	31/75	8/49
WHR	0/85	0/043

The results showed that the body activity of women suffering from coronary heart diseases is lower than the average level $(p \le 0.05)$. In addition, their quality of life on dimension of physical function is lower than the average level $(p \le 0.05)$. Also, women's quality of life on dimension of accomplishment limitations due to physical health condition is lower than the average level $(p \le 0.05)$ and their quality of life on dimension of accomplishment limitations due to physical health condition is lower than the average level $(p \le 0.05)$ and their quality of life on dimension of accomplishment limitations due to emotional problems is lower than the average level $(p \le 0.05)$. The results indicated that life quality of women suffering from coronary heart diseases on dimension of tiredness or happiness is lower than the average level $(p \le 0.05)$. Also, the life quality of women suffering from coronary heart diseases on dimension of emotional health is higher than the average level $(p \le 0.05)$. In addition, the life quality of women suffering from coronary heart diseases on dimension of pain, their quality of life is lower than the average level $(p \le 0.05)$. And finally, on dimension of general health, the life quality of women suffering from coronary heart diseases in in the average level (P = 0.980).

Table 2: correlation coefficient between body activity and quality of life related to health of women suffering from coronary heart diseases

	Basicvariable		body activity
Previewing variable			
Statistic index	correlation coefficient	correlationcoefficient square	Levelof significance
Quality of life	0/477**	0/228	0/001
Physical function	1**	1	0/001
Accomplishment limitations due to physical health condition	0/275**	0/076	0/001
Accomplishment limitations due to emotional problems	0/067	0/004	0/367
Tiredness or happiness	0/265**	0/070	0/001
Emotional health	0/140	0/020	0/057
Social reaction	0/242**	0/058	0/001
Pain	0/457**	0/209	0/001
General health	0/190**	0/036	0/009

P<0.05

The findings of Table 2 show that correlation coefficient between body activity and quality of life related to health of women suffering from coronary heart diseases is significant. That is, there is a significant relationship between body activity and quality of life related to health of women suffering from coronary heart diseases. Based on determination coefficient (r2) 22.8 percent of variance has been common in body activity and quality of life related to health of women suffering from coronary heart diseases. Therefore, the relationship between body activity and quality of life related to health of women suffering from coronary heart diseases is confirmed. The results of correlation coefficient indicated that there is a reverse and significant relationship between Body Mass Index (BMI) with body activity of women suffering from coronary heart disease (r=-0.34, $p \le 0.05$). Also, there is a reverse and significant relationship between waist-to-hip ratio with body activity of women suffering from coronary heart disease (r=-0.26, $p \le 0.05$). In addition, a significant and negative relationship between the amount of BMI with physical dimensions of life quality of women who suffer from coronary heart diseases was observed (r=-0.34, p \leq 0.05). Also, there was a significant and negative relationship between the amount of BMI and general health related to health of women who suffer from coronary heart diseases (r=-0.15, $p \le 0.05$). A significant relationship was found between WHR with aspects of physical function related to health of women who suffer from coronary heart diseases (r=-0.26, $p \le 0.05$). Finally, the results indicated that there was a significant relationship between educational degrees with quality of life of those women who suffer from CHD ($P \le 0.05$).

DISCUSSION

According to the findings of the study, body activity of women suffering from CHD was lower than average. The findings of this study are in line with the findings of the study conducted by Montazer-Ghaem et al. entitled 'study of life quality of sick people after open heart surgery'. They discovered that body activity is reduced in people who suffer from CHD (11). To elaborate more on this point, it should be mentioned that most of the women suffering from cardiovascular diseases do not have that much of recommended body activity. It is necessary for them to have appropriate body activity to lose weight for getting better of their illness and its consequences. Obese women are more in danger of death from cardiovascular diseases than those who are thin or have slight obesity and the severity of illness and its consequences are more in overweight women. Although treatment of the illness reduces the power of activity, it is recommended that even those who have the most serious treatment should be physically active because this activity has positive effects and reduces the weakness caused by treatment and elevates the quality of life and psychological conditions of the ill person. Half of the people suffering from this illness have problems with nightly sleeping that physical activity will certainly help them. Of course, the activity should be frequent. It seems that appropriate body activity changes the body activity system in some way (12,13). According to the findings of the study, one can say that the quality of life of women suffering from CHD is lower than average. The findings of the present study are in line with those ones conducted by Yousefi et al (2011) entitled 'study of life quality of patients suffering from heart failure confined at hospital', and also with the study done by Biranvand et al. (2010), entitled 'quality of life in people suffering from the first acute heart failure' and also in line with the results of Montazer-Ghaem (2011) study, entitled 'study of quality of life of people after open heart surgery' who concluded that quality of life related to patients suffering from CHD is low. To elaborate more on this research question it could be said that skeletal-muscular troubles, physical inabilities, sexual dysfunctions, and vascular problems are among the problems that affect these people's life. These patients usually have feelings of disappointment and failure because of fighting with illness and having plans for its cure. Therefore, their social psychological feeling will be affected and most of them have feelings such as fear, anger, and sin in relation to their illness and they often do not take care of themselves and do not have control over their illness (14). The results of the study indicated that the primary aim of treatment is not only obviating the physical symptoms of the illness but the general improvement of the patients' quality of life should be taken into account. In order to do so, psychological and socio-psychological consequences caused by the illness should be noticed to. The category of life quality is very important since if it was ignored, it would be led into disappointment, lack of motivation for any attempt, and reduction of social, economical, cultural and hygienic activities that could affect socio-economic development of a country in deeper levels (14). Based on the results, the quality of life for women who suffer from CHD from the aspect of physical function was lower than average. The results of this study were in line with those ones achieved from Yousefi et al (2011) entitled 'study of life quality of patients suffering from heart failure confined at hospital' that quality of life related to women suffering from CHD in the dimension of physical function is low (15). According to the results of the study, the quality of life for women who suffer from CHD on the dimension of accomplishment limitations caused by emotional problems was lower than average. The results of this study were similar to those ones achieved from Biravand et al (2010) entitled 'study of life quality of patients after their first acute heart failure' that quality of life related to women suffering from CHD on the dimension of accomplishment limitations is low (16). From the aspect of tiredness or happiness, the results showed that quality of life of women suffering from CHD was lower than average. The results of this study were similar to those ones achieved from Yousefi et al (2011) entitled 'study of life quality of patients suffering from heart failure confined at hospital' that quality of life related to patients suffering from CHD in the dimension of tiredness or happiness is low (15). From the aspect of emotional health, the results showed that quality of life of women suffering from CHD was higher than average. The results of this study were similar to those ones from Biravand et al (2010) entitled 'study of life quality of patients after their first acute heart failure' that quality of life of the cardiovascular patients on the dimension of emotional health is to some extent higher than average. (16). According to the findings, quality of life of women suffering from CHD on dimension of social reaction was higher than average. The results of the present study were in line with those ones from Biravand et al. that quality of life of the cardiovascular patients on the dimension of social reaction is higher than average. (16). From the aspect of pain, the results showed that quality of life of women suffering from CHD was lower than average. The results of this study were in line with those ones achieved from Yousefi et al (2011) that quality of life related to patients suffering from CHD on the dimension of pain is low. Based on the findings of the study, quality of life of women suffering from CHD on dimension of general health is average. The results of the present study were the same with the results from the study conducted by Montazer-Ghaem et al. (2011) that the cardiovascular patients' quality of life on dimension of general health is on the level of average (11). Based on determination coefficient (r2) 22.8 percent of variance of body activity and quality of life related to health of women suffering from CHD was common. The result of this study are in line with the results achieved from Montazer-Gaem et al. (2011) that there is relationship between body activity and quality of life related to the heath of women suffering from CHD (11). To elaborate on this research question, it could be said that the studies have indicated that lack of body activity is an important risky factor for chronic illnesses such as diabetes, heart illnesses, heart failures, and several cancers. In spite of considering the effect of exercise and body activity on losing weight, it will improve the quality of life of elderly women and the amount of improvement in quality of life depends on the amount of body activity and this improvement is more between those women who had body activity in a week in relation to other groups. Moreover, body activity caused the improvement of the subjects' behavior and as well as their participation in social activities (17,18). All of the people need to have body activity. Body activity increases happiness and health while preventing catching diseases. The studies show that even the people with half an hour daily activity can highly mount their health. In general, researchers have special attention to body activity in maintaining and reinforcing physical and psychological health and the see movement poverty as a risky factor in large spread of chronic diseases. The role and importance of body movements in reduction of diseases and improvement of health is determined by the fact that science, distribution study and determinant factors of illnesses have shown the relationship between lack of body activity and weak physical fitness as risky dangers for spread of illnesses and also have shown reduction of death caused by cardiovascular illnesses, diabetes type 2, blood pressure and cancer. Generally, today, researchers have special attention to body activity in maintaining and reinforcing physical and psychological health and they consider poverty movement is a risky factor in high rate spread of chronic diseases (12). Based on determination coefficient (r2), 11.6 percent of BMI variance is common with body activity of the women suffering from CHD. The results of the present study are in line with the results achieved from study of Demetra et al. (2005) entitled 'obesity is a better determinant than aerobic fitness of health for determining heart risky factors'. They concluded that obesity, BMI, WHR have correlation with heart risky factors in that there is relationship between BMI with body activity of women suffering from CHD (19). The correlation coefficient between waist-to-hip ratio (WHR) with body activity of women suffering from CHD is significant. According to determination coefficient (r2) 6.8 percent of WHR variance is in common with body activity of women suffering from CHD. The achieved results of the present study are in line with the results from Demetra (2005) entitled 'obesity is a better determinant than aerobic fitness of health for determining heart risky factors' in that obesity, BMI, WHR have correlation with heart risky factors in that there is a relationship between WHR with body activity related to health of women suffering from CHD (19). To elaborate more on the results we can say that the role and importance of body movements in reduction of diseases and improvement of health is determined by the fact that science, distribution study and determinant factors of illnesses have shown the relationship between lack of body activity and weak physical fitness as risky dangers for increase of illnesses and also have shown reduction of death caused by cardiovascular illnesses (20). There was not a significant relationship between body mass index (BMI) withquality of life and also a significant relationship between waist-to-hip ratio with quality of life was not observed. In general, obesity of abdomen is a risky actor around the world which is in a state of increasing and BMI and WHR increase are highly related to cardiovascular diseases (18). Obesity is the cause of physical illnesses such as cardiovascular ones, diabetes, joint damage, and backache, different kinds of cancer, blood pressure, and increase of death. The psychological consequences could be lower level of self-esteem, poor self image, reduction of quality of life, depression disorders, bipolar disorders, attack of panic, and phobia of market. Therefore, reduction of life quality is one of the psychological consequences of obesity (21). The correlation coefficient between education level and quality of life related to health of women suffering from CHD is significant. According to determination coefficient (r2), 4 percent of education variance is in common with quality of life of women suffering from CHD. The results of this study were the same as those ones from Montazer-Ghaem's study entitled 'life quality of patients after open heart surgery' in that there is a relationship between education level and quality of life of women suffering from CHD (11). In this regard, following an increase of education level, there will be and increase of public awareness and consequently changes of attitudes and hygienic behavior of people that will cause a great influence on health improvement and more desirable quality of life. The reason of low quality of life of illiterate patients in the present study could be the poverty of these people, and their inadequate access to financial resources that prevent them to continue specific treatment and healthcare. In general, women have a life with less quality and normally, education is considered as a positive point to have a healthy life that leads to a better health and satisfaction, and finally it increases the quality of life(15).

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