



# Comparison of Perfectionism Consequences among Women and Men with Coronary Heart Disease

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## ABSTRACT

This study compares the dimensions of perfectionism among women and men with coronary heart disease undergoing Coronary Artery Bypass Graft (CABG) surgery. The statistical population in this study included all coronary heart disease patients, in which 100 patients (50 women, 50 men) selected as sample using random sampling method. The statistical methods used in this research were descriptive statistics (frequency, percentage frequency, mean, standard deviation and variance), inferential statistics (independent t test to compare two groups) and ANOVA test (SPSS software used to analyze the data). The results show that for comparing the difference between the two groups of women and men in the scores of perfectionism dimensions using independent t-test with 99% confidence and with a p-value of (0.002), the observed difference between the mean scores of egocentricity scale in the two groups of women and men is statistically meaningful. Therefore, it can be concluded that women than men have a higher degree of perfectionism at an egocentric scale or self-oriented. One-way Analysis of variance (ANOVA) test used to compare the mean scores of perfectionism dimensions in three groups with education (diploma, under diploma, academic). As a result, with a freedom degree of 2.97 and 95% confidence there was a significant difference. The average of the three groups according to perfectionism scales shows that the group with the under diploma education as compared with other two groups has more perfectionism.

**KEYWORDS:** perfectionism, coronary heart disease, CABG surgery

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## I. INTRODUCTION

Today many the inhabitants of planet die by mental illnesses such as coronary artery disease, asthma and digestive disorders, etc. The role of stress and lifestyle is seen as an important and effective factor along with other factors in all of the above disorders. According to experts, the basis of all mental illnesses is the effect of psychological problems, personality problems and even lifestyle

on the body. Therefore, coronary heart disease is a chronic disease that requires treatment and long-term care to prevent the progression of the disease and its side-effects. The financial and social costs of the disease in the society is so high that researchers have been seeking effective ways to reduce them, and these patients can live a high quality of life (Shorty, 2018). A large part of the serious issues that man is facing will not be solved solely by the technology derived from the natural sciences. These issues have specific personality

and behavioral components that, in order to solve them, should be based on psychological knowledge, especially personality psychology. The motivating force of each person is towards growth and self-development. All of us need to thrive on our potential ability to the highest possible level and to achieve growth beyond our current growth (Davoudabadi et al., 2016). Of course, achieving perfectionism and prosperity of the potentials of a person is very valuable, and in this area perfectionism is a positive and beneficial one. The cardiovascular system is one of the most sensitive systems in the body. Environmental and emotional changes such as stress, anxiety, fear, anger, and happiness instantly change the number of heart beats and blood pressure. A great deal of the individuals' death is related to the diseases of this system. When psychologists introduced perfectionism as a personality trait, they more considered its negative and destructive aspect. For example, Ellis considered the perfectionist beliefs as one of the most unreasonable beliefs, but today, perfectionism is divided into positive and negative types. If the negative type of it extensively appears in the individual, it can cause psychosomatic illnesses such as cardiovascular diseases through creating anxiety and stress (Mohammadabadi et al., 2016). What this research refers to is the extreme or negative aspect of perfectionism in psychology. Negative perfectionism usually considered the personality trait that is determined with trying to have a flawless and highly standard situation. It is associated with a tendency to critically evaluate the behavior of others and itself (Igly, 2017).

Today, many people report less satisfaction from their life. Many people are not satisfied from their interpersonal relationships and others! Quick judgment, emotionally acting, high expectation, seeking the best, dissatisfaction with work efficiency, over-committing to work, inattention to recreational activities, restlessness, depression and so on are issues that today increased among many people from the community (Basharpour et al., 2018). On the other hand, mental illnesses such as coronary artery disease, asthma, digestive disorders and so on, today, demolish the lives of many inhabitants of the planet earth (Reza'i, 2017). From the viewpoint of experts, the most important and commonly diagnosed mental illness, on average about 30-40% of deaths in the world, is coronary artery disease. In this study on the coronary artery disease and the dimensions of

perfectionism in women and men undergoing CABG surgery, are studied and reviewed.

Perfectionists are described as those who consider the superior criteria. They strictly follow these criteria and define their own value in accordance with these criteria (Rastmanesh, 2017). Patients with coronary heart disease in various places of life also show perfectionism. They regard high, unrealistic and disproportionate criteria for themselves and important people in their living, such as spouses, children and close relatives. They are never satisfied with their own performance and other individuals or relatives (Ghazizade, 2017).

Coronary heart disease is a type of heart disease that has essentially psychiatric nature, and the role of psychological factors, especially the personality in it has been proved. These factors increase the risk of coronary heart disease by directly affecting the physiological factors. Therefore, stroke is one of the most common causes of death in the world. Coronary artery disease is the most commonly known cause of heart attack, and the onset and progression of this disease are attributed to low-density lipoprotein or LDL particles from the vessel wall. Since negative perfectionism can be a risk factor for coronary heart disease, recognizing this personality trait and its treatment can have a preventive aspect of the disease, and even has an advantageous role in controlling this illness and its successful treatment (Firouzabadi, 2017).

A Single Photon Emission Computed Tomography (SPECT) is used as a diagnostic tool for detecting patients with coronary artery disease. The experiences have shown that usually there are errors in visual analysis of cardiac images due to the fatigue and unpredictability of the expert technician. Thus, there is a need for computer-based diagnosis tools to help the physician to diagnose the disease (Akhundi, 2017). The present study also compared the dimensions of perfectionism in women and men with coronary heart disease are undergoing surgery of CABG, The goal is to help families, counseling centers, health centers, and community planners. Having more information about the personality characteristics of men and women, more effective planning is needed to improve their mental health and, as a result, the health of community. There is no possibility of angioplasty and there is a need for a heart surgery in an acute condition in which the number of arterial stenosis is high or if it occurs in a dangerous location such as Left

Main Coronary Artery. In this method, the internal artery of the chest and veins of the lower extremities are used and through them, the aortic trunk is connected to the later part of the artery stenosis and sufficient blood flow to the heart muscle is provided in that area. This surgery will lead to the stop of reduction in blood supply which caused by existing stenosis (Jacobs, 2016).

## II. LITERATURE REVIEW

Ruddox et al. (2018) examined the role of personality factors in predicting perceived stress and perfectionism in asthmatic patients. They investigated whether asthma is one of the most common respiratory diseases that causes the death of forty percent of the world's population. The overall aim of this study was to determine the role of personality factors in predicting perceived stress and perfectionism in asthmatic patients. The findings showed that there is a significant relationship between the perceived psychological character and the perceived stress in asthmatic patients, while there is not a significant relation between the extroversion and consistency in predicting the extent of the perfectionism. Therefore, in patients suffering from asthma, a number of personality factors play a role in predicting the perceived stress and perfectionism. Richards et al. (2018) did a comparative study on the perfectionism in patients suffering from coronary heart disease and healthy people. The purpose of this study was to compare perfectionism in coronary heart disease patients and healthy people with descriptive comparative causative method. Data were analyzed by independent t-test. Findings showed that there is a significant difference in the subscales of perfectionism in the healthy and sick groups.

Teerlink et al. (2017) studied the effect of teaching the method of controlling the emotion on the extent of depression in cardiac patients. They concluded that depression as a psychological disorder causes many problems for cardiovascular patients. The purpose of this study was to determine the effect of controlling the emotion on decreasing depression symptoms in cardiovascular patients.

Doshi et al. (2017) examined the effects of cardiac rehabilitation on physical tolerance of patients after coronary artery bypass graft surgery. Therefore, coronary artery disease (CAD) is one of the most important causes of mortality in most countries, including Iran, which leads to significant disability, reduction in the quality of life

and death. According to studies conducted by different researchers, cardiac rehabilitation can significantly reduce mortality and play an important role in secondary prevention. The aim of this study was to investigate the effects of cardiac rehabilitation on physical tolerance of patients after coronary artery bypass graft (CABG) surgery. It was also concluded that cardiac rehabilitation has important effects on functional capacity of patients after coronary artery bypass graft surgery. Adler et al. (2016) examined the issue of perfectionism. Therefore, they believed that human struggles to get superiority and compensate for the feelings of inferiority that lead to create psychological disturbances.

Yung et al. (2016) examined the relationship between perfectionism and anxiety in patients. They believed that the emotions and motives associated with the "collective unconscious" could cause positive and creative efforts in person, but it is also possible that these emotions would be subjected to an unconscious attempt which is completely contradictory with person's conscious willingness and as a result he experiences psychological disturbances.

Myles et al. (2016) studied the cognitive emotion regulation strategies and relationship between perfectionism and alexithymia in cardiac patients. Therefore, they consider cardiovascular disease as the most common serious illness in advanced countries. The aim of this study was to determine the relationship between early maladaptive schemas, emotional cognitive regulation strategies, perfectionism and alexithymia in cardiac patients. The method of this research was descriptive. The findings showed that there were a significant negative relationship between positive cognitive emotion regulation and alexithymia and a significant positive correlation between negative cognitive emotion regulation and alexithymia. There is also a significant positive relationship between the worries about mistakes and doubts about parents' actions and expectations, parental criticisms, individual standards and order. Also, the results of regression showed that cognitive emotion regulation strategies and perfectionism are predictors of alexithymia in students. The results of this study can help researchers and therapists of alexithymia regarding the factors influencing it.

Anderson et al. (2016) investigated using Bayesian meta-analysis to estimate the relative risk of death in coronary patients. Therefore, they still have doubts about the amount of reduction in

the risk of death in coronary heart disease patients after smoking cessation. In this research, the Bayesian meta-analysis model was used to obtain a reliable estimate of the risk of death in coronary heart disease patients after smoking cessation. The results of this study showed that after eliminating the effect of two variables, the number of people surveyed and the duration of follow up in each study, and also considering the heterogeneity of the studies, it can be concluded that smoking cessation decreases 0.36 percent of death risk in coronary heart disease patients.

Connolly et al. (2015) examined the effect of the implementation of phase I cardiac rehabilitation program on the anxiety and depression of patients with acute coronary syndrome. Therefore, the aim of this study was to determine the effect of first phase cardiac rehabilitation program on anxiety and depression in patients with acute coronary syndrome. Several psychological factors, such as anxiety and depression, play a role in the prognosis and treatment of patients with acute coronary syndrome. Cardiac rehabilitation programs are an essential part of the care plan for most cardiac patients. The results of this study showed that the phase I cardiac rehabilitation program reduced the anxiety and depression of patients with acute coronary syndrome. Therefore, this program can be used as an effective method in the implementation of nursing care programs for patients with acute coronary syndrome.

### III. RESEARCH METHODOLOGY

**3.1 Statistical population:** All patients with coronary heart disease undergoing CABG surgery are located in ShahidRajaee Heart Center of Tehran.

**3.2 Statistical sample and sampling method:** 100 patients (50 females and 50 males) were randomly selected from patients with coronary heart disease who were undergoing surgery of *Heart bypass surgery*, also called *coronary artery bypass surgery*.

**3.3 Research plan:** The present research is a post-event or causal-comparative design, which is descriptive.

**3.4 Statistical methods:** Descriptive statistics (frequency, percentage frequency, mean, standard deviation and variance) are descriptive indexes of research variables. Inferential statistics: for this statistic were used independent t test for the groups and the *analysis of variance* (ANOVA) test for testing hypotheses 1 and 2, as well as the

assumption of normal distribution using the Kolmogorov-Smirnov (KST) test.

**3.5 Research tools:** The dimensions of perfectionism of patients are measured by "Identity and Felt" perfectionism questionnaire (1991), a multi-dimensional scale. The short form of the questionnaire is on a 5-point Likert scale (I totally agree (1), I agree (2), I have no idea (3), I disagree (4), I totally disagree (5)). It includes 18 terms and 3 sub-scale (self-oriented, other oriented, society-oriented), as each sub-scale consists of (6) matter. For each subscale, the range of scores is between 6 and 30, and the total perfectionism score is not calculated. As the total score is lower in one of the subscales, it indicates more perfectionism in which subscale (Ramezanian, 2018).

**3.6 Validity and reliability:** In the preliminary validation of the Iranian form of this scale, in a sample of 500 students of the University of Tehran, the Cronbach's alpha coefficients under the perfectionism scales of self-oriented, other-oriented and society-oriented were calculated, respectively, 0.90, 0.91, and 0.81, which are the symbols of good and high homology in the scale. Correlation coefficients between the scores of 78 individuals participated in the tests were calculated in two turns with two 4-week intervals was calculated for reliability evaluation of re-test. These coefficients were calculated for perfectionism of self-oriented, other-oriented and society oriented,  $r = 0.85$ ,  $r = 0.79$  and  $r = 0.84$ , respectively, which at the level of  $P < 0.100$  this was a sign of satisfactory retest reliability (Zare'nezhad, 2017).

Descriptive statistics and single variable covariance analysis (ANCOVA) were used to analyze the data. The results of single variable covariance analysis showed that the depression scores of cardiovascular patients in the experimental group, who are trained emotion regulation, are decreased with compared to the control group in the post-test. Therefore, the results show that teaching emotion regulation significantly reduces the symptoms of depression. These results have important implications for improving the health of cardiovascular patients.

### IV. RESULTS AND DISCUSSIONS

#### 4.1 Descriptive findings

#### 4.2 Demographic characteristics

As can be seen from table 1, the whole 100-individual sample consisted of 50% female and 50% male (figure 1).

Table 1 Frequency distribution and percentage statistical sample based on sex segregation

Statistical index-sex	Frequency	Percentage frequency
Female	50	50
Male	50	50
Total	100	100

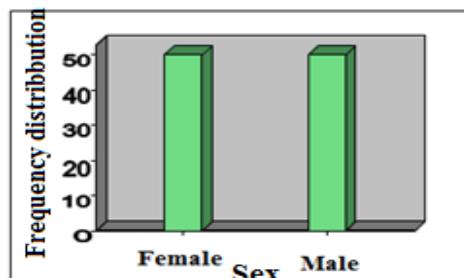


Figure 1 Frequency distribution of statistical sample versus sex segregation

Table 2 Frequency distribution and percentage of statistical sample based on age segregation

Percentage frequency	Frequency	Statistical index-age (year)
1	1	25-35
7	7	36-45
23	23	46-55
43	43	56-65
21	21	66-75
5	5	Above 76
100	100	Total

As is observed from table 2, in the total sample of 100 people, 43% was in the age group of 56 to 65 years old as the most frequency and 1% among the 25 to 35 year olds as the least frequency (figure 2).

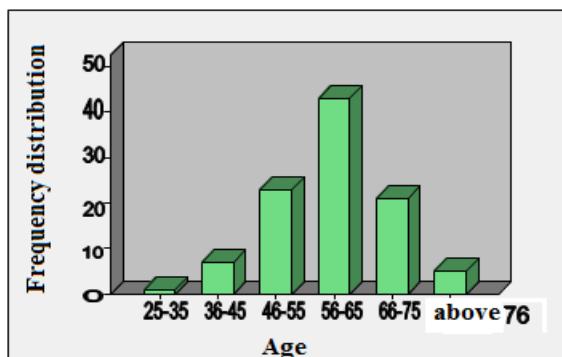


Figure 2 Frequency distribution of the statistical sample versus age

Table 3 Frequency distribution and percentage of the statistical sample based on education degree

Percentage frequency	Frequency	Statistical education index
71	71	Under Diploma

18	18	Diploma
11	11	Academic education
100	100	Total

According to table 3, the 100-individual statistical sample includes 71% under-diploma, 18% diploma and 11% academic education (figure 3).

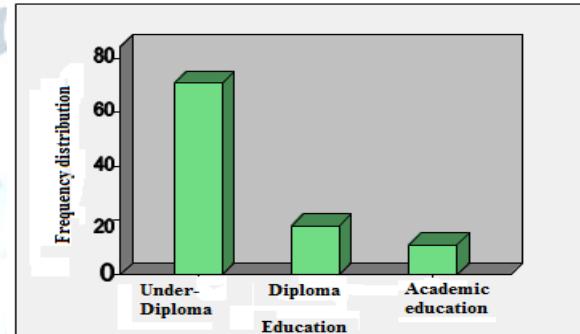


Figure 3 Frequency distribution of statistical sample versus degree of education

4.3 Descriptive indicators of research variables  
In this section, as we mentioned earlier, descriptive statistics of the research variables are presented.

Table 4 Descriptive indicators (central and dispersive) of variables applied in the research

Statistical index-variable	Nu mb er	M ea n	Crit erio n devi atio n	Vari anc e	Mi n- val ue	Max- value	
Perfec tionis m dimen sions	Excite ment- orient ed	10 0	15 .3 0	3.6 9	13. 59	7	24
	Other- orient ed	10 0	14 .6 2	3.2 1	10. 30	7	24
	Self-or iented	10 0	15 .8 6	3.7 6	14. 14	9	27
Total score of perfectionism	10 0	45 .7 8	8.5 3	72. 82	28	72	

The findings of table 4 show descriptive indicators (central and dispersion tendency). Among the average calculated indicators are central tendency index, standard criterion deviation index and the dispersion tendency index of tested scores.

#### 4.4 Inferential findings

4.4.1 Correlation between perfectionism in women and men with coronary heart disease, undergoing CABG surgery

In this section, the results obtained for a survey of the Correlation between perfectionism in the two

genders are researched. The results clearly showed the p-value of Levine test to examine the equality of variances is more than the criterion coefficient, that is, 0.05, so it can be said with 95% confidence the two groups are equal in terms of variance. The presumption of variance equalization in the two groups of perfectionism variables is observed for t test.

According to the independent t-test results, the value of t obtained on a self-oriented scale with a degree of freedom of 98 is greater than the value of t in table. Likewise, the obtained p-value of 0.002 is less than the p-value criterion of 0.01. Therefore, with 99% confidence, we can say that the observed difference between the mean scores of the self-oriented scale in the two groups of men and women is significant. Because the high scores on this scale represent low perfectionism, on the contrary, we can conclude that women in the self-oriented scale do have perfectionism than men.

In addition, in the case of the excitement-oriented, other-oriented, and total perfectionism score variables, the value of t obtained at the above-mentioned scale with a degree of freedom of 98 is smaller than the t-value table. Additionally, their p-value obtained is larger p-value criterion of 0.05. For these two reasons, with 95% confidence, it can be said that the observed difference between the mean scores of scales in other-oriented, excitement-oriented and total score general score in both groups of men and women is not significant.

Table 5 Independent t-test results of the mean scores of perfectionism dimensions in both men and women groups

variable	Levene's test		t-independent	Degree of freedom	p-value
	F	p-value			
Excitement-oriented	0.72	0.39	0.32	98	0.74
Other-oriented	2.09	0.066	1.18	98	0.23
Self-oriented	0.43	0.51	3.16	98	0.002
Perfectionism (total score)	0.12	0.72	1.94	98	0.054

4.4.2 Investigation on the correlation between perfectionism dimensions and education level of people who have undergone CABG surgery because of coronary heart disease

As the results of the F test show, the F value obtained in the excitement-oriented scales,

other-oriented, self-oriented, and as well as the total score of perfectionism with a degree of freedom (2.97) is greater than the F value of table. Moreover, their p-value obtained is less than the p-value criterion of 0.05. Therefore, with 95% confidence, we can mention that the observed difference between the average scores of excitement-oriented, self-oriented, other-oriented, and the total score of perfectionism in the three groups with a different educational level is meaningful.

Furthermore, the comparison of the meanings in the three groups based on perfectionism scales shows that the group with an under-diploma education acquired less scores on this scale than those with an academic and diploma education. In other words, because the high scores on this scale represent low perfectionism and vice versa. We can conclude that the group with under diploma education had a higher degree of perfectionism than those with a diploma or academic degree. Therefore, the hypothesis of research with 95% confidence regarding the significant difference between the three groups with different educational levels in the dimensions of perfectionism is confirmed and the zero assumption is rejected.

Table 6 The results of ANOVA test in the scores of perfectionism dimensions based on education degrees

Variable	Statistical index/changes source	Sum of squares	Degree of freedom	Mean of squares	CoefficientF	p-value
Excitement-oriented	Intergroup variance	92.15	2	46.07	3.567	0.032
	Intragroup variance	125.276	97	1.292		
	Total	134.500	99			
Other-oriented	Intergroup variance	110.55	2	55.28	5.898	0.004
	Intragroup variance	909.01	97	9.37		
	Total	101.956	99			
Self-oriented	Intergroup variance	209.4	2	104.52	8.512	0.0001
	Intragroup variance	119.100	97	12.28		
	Total	140.04	99			

perfectionism	Intergroup variance	117 3.49	2	586. 74	9.43	0.0 001
	Intragroup variance	603 5.68	97	62.2 2		
	Total	720 9.16	99			

## V. CONCLUSIONS

The purpose of this study was to compare the perfectionism dimensions among women and men with coronary heart disease, undergoing CABG surgery. The results of this research show that women than men have more perfectionism in their self-oriented, as well as the group with a under diploma education than the group with educational university and diploma levels have higher perfectionism.

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