

## Depression and Anxiety in a Cardiovascular Outpatient Clinic: A descriptive study

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**Objective:** Cardiac diseases are psycho-somatic disorders, and psychological aspects play an essential role in their initiation and exacerbation. The aim of this study was to gain appropriate knowledge in the epidemiology of co-morbid depression and anxiety disorder in cardiovascular outpatients.

**Method:** This study is descriptive with a sample of patients attending a cardio-vascular clinic. 238 individuals were included in this study using a consecutive sampling method. The study instrument was Hospital Anxiety and Depression Scale (HADS) questionnaire, which is a clinical scale for assessing anxiety and depression.

**Results:** Of the 238 participants in this study, 93(38.7%) were male and 146 (61.3%) female. 28.5% of patients suffered from anxiety disorders, and 41.9% had depression. Regarding comorbid diseases such as diabetes mellitus, hyperlipidemia and hypertension, the severity of depression was just related to hypertension. There was a meaningful relationship between gender and symptoms of anxiety so that symptoms were more severe in women.

**Conclusion:** Considering the high prevalence of depression and anxiety in patients suffering from cardio-vascular diseases, it is necessary to screen psychological disorders in patients with cardio-vascular diseases and improve their cardio-vascular health and quality of life as much as possible.

**Keywords:** cardiovascular diseases, depression, anxiety, HADS

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**D**uring recent years many studies have been conducted on cardiovascular diseases. Considering the chronic manner of such diseases, their mortality rate, and the burden of these diseases on the economic generative years of people on the one hand and the nature of this condition as the most preventable non contagious diseases on the other hand, special and increasing attention has been paid to cardiovascular diseases (1, 2). Considering the world burden of these disease until 2020, they are the main cause of the increase in mortality rate in underdeveloped countries. It has been predicted that in 2020, cardio-vascular diseases will result in 25 million deaths; and regarding current circumstances, it seems that these diseases will bring about 35 to 60 percent deaths worldwide (3).

In Iran, cardio-vascular diseases are a health problem with social consequences (4). It has been estimated that, with their current pace, cardio-vascular diseases will be the first cause of disability in the next decades.

As the Age of the onset of vascular diseases has decreased, about 1.3% of deaths that occur after the age of 35 are the result of cardiovascular related diseases (4).

Considering the fact that cardiac diseases are categorized as Psycho-somatic disorders, psychological aspects play an essential role in their initiation and exacerbation directly or indirectly (5). Also, psychiatric disorders can be a common complication in those with cardiovascular disease.

Some studies demonstrated that there was a range of 5%-10% of anxiety and 15-20% of depressive

disorders among patients at outpatient cardiac wards. Acute psychological stressors and personality characters have proved to be risk factors for cardiovascular diseases, and recent studies imply that depression and anxiety are independent factors that affect mortality and morbidity in patients with cardiac diseases. (6)

From the biological point of view, depression can disturb regulation of autonomous nervous system and lessen the power of regulatory of the Vagus nerve in heart, which will result in an increase in the rate of acute heart failure. Also, there is a role for platelets in coagulation and clot making in coronary accident in depressed patients (7). Depression can lead to such unhealthy behaviors as smoking, unhealthy diet, alcoholism, lack of exercise and physical activity, which could give rise to cardio-vascular diseases. It has been estimated that cardiac symptoms in 10 to 20 percent of patients who refer to cardiologists are the consequences of psychiatric problems, most of which are related to anxiety, panic disorder and depression (8).

Considering the increase in mortality rate of cardiovascular diseases, there is a need for more research on psychological aspects of these diseases in Iran. In the current study, depression and anxiety were assessed in a sample of patients with cardio-vascular diseases in an outpatient clinic. The aim of the study was to gain appropriate knowledge in the epidemiology of comorbid psychological disorders in these patients.

## Materials and Method

This study was descriptive with a sample of all the patients with cardio-vascular diseases in a cardio-vascular clinic. 238 patients were included using a consecutive sampling method, and their cardiovascular disease was confirmed by a cardiologist. In this study, a questionnaire containing demographic variables of the participants was used. The study instrument was Hospital Anxiety and Depression Scale (HADS) questionnaire which is a clinical scale used to assess anxiety and depression. The HADS (Hospital Anxiety and Depression Scale) questionnaire, which was introduced in 1983, measures the level of anxiety and depression in outpatient population (9). In order to protect the participants' privacy all questionnaires were anonymous.

### Analysis :

After data collection, data were analyzed using descriptive statistics and correlation coefficients. (Pearson and Spearman correlation)

## Results

Of 238 participants in this study, 93(38.7%) were male and 146 (61.3%) female. The mean and standard deviation of participants' age was  $(54.4 \pm 16.2)$  year, the youngest participant was 20 and the oldest was 90 years old. In this population, 30 subjects (12.9%) had hyperlipidemia, 32(13.7%) were diabetic, and 90

(37.9%) suffered from hypertension; 58 participants (24.6%) were smokers.

According to HADS, 100 participants (42.1%) suffered from depression, 56(27.1%) experienced subtle symptoms of depression, 68(28.7%) reported anxiety, and 59(24.6%) reported mild symptoms of anxiety.

According to statistical analyses, there was not any meaningful relationship between anxiety symptoms and age. However, a meaningful relationship was observed between depression and age ( $P < 0.001$ ) so that as the patients got older, their depression was exacerbated.

A meaningful relationship was observed between gender and symptoms of anxiety and it should be noted that the symptoms were more severe in women. The relationship between underlying disease and psychiatric disorders showed that there was not any meaningful relationship between depression or anxiety and hyperlipidemia. Diabetes mellitus was not related to the symptoms of depression and anxiety.

The studies revealed that more severe hypertension exacerbated the severity of depression ( $P > 0.001$ ); however, there was not a meaningful relationship between anxiety and hypertension.

## Discussion

The current study revealed that 41.9% of the patients suffered from depression, and 28.5% had anxiety. Regarding comorbid diseases such as diabetes, hyperlipidemia and hypertension in this population, the severity of depression was just related to hypertension. Considering the prevalence of anxiety (28.5%) in this outpatient population with cardio-vascular diseases, results were similar to those of Bankier and Colleagues (10). They found that 29% of their sample suffered from PTSD, and 24% reported generalized anxiety disorders. In this study there was only patients with coronary heart diseases, the high prevalence can be the result of more anxiety disorders compared to the sample of Bankier's study. The findings of this study also indicate higher prevalence of anxiety symptoms among women; and this supports the usual pattern of higher prevalence of anxiety disorders among women compared to men.

It should be noted that high prevalence of anxiety can be the consequence of psychological trauma secondary to heart disease and other distressing somatic situations. From another point of view, women are more sensitive to psychological trauma, and cardiovascular events can result in vulnerability to trauma or deterioration of the previous psychological trauma or anxiety symptoms (11).

In our study, the reported prevalence of depression was about 41.9% which confirmed the high prevalence of depression among patients with cardio-vascular diseases in other studies (12). Misland in another study, reported the prevalence of recurrent depression among vessel heart diseases up to 44% (13).

In the current study, the assessment of patients with non-coronary heart diseases is an important aspect;

and their high prevalence can be explained by the higher number of women.

Another finding of the current study is the correlation between depression symptoms and hypertension which can be reciprocal. The changes in the performance of autonomous nervous system and decrease in regulatory of vagus nerve can affect regulation of blood pressure and possibly the escalation of blood pressure. Besides, depression through the promotion of unhealthy behaviors like unhealthy diet, lack of exercise and physical activity can result in hypertension. From another point of view, depression can be one of the side effects of anti hypertension medicine or can independently develop in hypertensive patients. Above all, the comorbidity between depression and hypertension increases the rate of morbidity and mortality of cardiac problems or strokes (14).

The results of our study, supported by previous studies, indicated that the prevalence of depression and anxiety in participants, even those in outpatient wards, was relatively high (15).

If more appropriate instruments such as structured interview, applying a prospective method or comparison with a control group were utilized in this study, then the results could have been more reliable.

Considering the high prevalence of depression and anxiety in patients with cardio-vascular diseases, which may have negative effects on the course and prognosis of the disease and may increase the mortality and morbidity, it is necessary to screen the psychological disorders in patients with cardio-vascular diseases and improve their cardio-vascular health and quality of life as much as possible.

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