

## **Family Environment and Its Correlation with Anxiety and Depression: A Study on Heart Patients**

Dr. Meena Jain<sup>1\*</sup>, Saloni Chandalia<sup>2</sup>

### **ABSTRACT**

This research paper deals with the Family Environment and its Correlation with Anxiety and Depression level among persons with Heart Disease. There had been a number of researches that investigated that ischemic heart disease patients who suffer significant anxiety have close to a 5-fold increased risk of experiencing frequent angina and those with depression have more than a 3-fold increased risk for these episodes. This observed link between psychiatric symptoms and angina underlines the importance of treating anxiety and depression in cardiac patients, according to study co author Dr Mark D Sullivan (University of Washington School of Medicine, Seattle). To gather the needed data, Hamilton Anxiety Scale and Becks Depression Inventory were used. As stated from literatures, for people with heart dysfunction, depression and anxiety can increase the risk of an adverse cardiac event such as a heart attack or blood clots. For people who do not have heart disease, depression and anxiety can also increase the risk of a heart attack and development of coronary artery disease. Researchers have also emphasized on the role of family psychosocial environment and its positive association with the Coronary Heart Disease risk.

**Keywords:** *Family Environment, Anxiety and Depression*

Anxiety and Depression are common in patients with Heart Dysfunction. Studies have shown that 15 percent of patients with cardiovascular disease and up to 20 percent of patients who have undergone coronary artery bypass graft (CABG) surgery experience major depression (Davidson, J. W. 2005). Others have firmly established anxiety as an independent predictor for subsequent coronary heart disease years down the line (Roest et. al. 2010).

Patients with depression have been shown to have increased platelet reactivity, decreased heart variability and increased pro inflammatory markers (such as C-reactive protein or CRP), which are all risk factors for cardiovascular disease. Unmanaged stress can lead to high blood pressure,

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<sup>1</sup> Associate Professor, Department of Psychology, University of Rajasthan, Jaipur

<sup>2</sup> Research Scholar, Department of Psychology, University of Rajasthan, Jaipur

\*Responding Author

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arterial damage, irregular heart rhythms and a weakened immune system. For people with heart disease, depression can increase the risk of an adverse cardiac event such as a heart attack or blood clots. For people who do not have heart disease, depression can also increase the risk of a heart attack and development of coronary artery disease. In one landmark study, the continued presence of depression after recovery increased the risk of death (mortality) to 17 percent within 6 months after a heart attack (versus 3 percent mortality in heart attack patients who didn't have depression). During recovery from cardiac surgery, depression can intensify pain, worsen fatigue and sluggishness, or cause a person to withdraw into social isolation. Patients who have had CABG and have untreated depression after surgery also have increased morbidity and mortality. Patients with heart failure and depression have an increased risk of being readmitted to the hospital, and also have an increased mortality risk.

Early research findings have indicated there may be genetic factors that increase a patient's risk of depression and risk of recurrent cardiac events after a heart attack (Nakatani et al.). Patients with heart disease and depression also perceive a poorer health status, as manifested by Quality of Life (QoL) studies. Negative lifestyle habits associated with depression – such as smoking, excessive alcohol consumption, lack of exercise, poor diet and lack of social support – interfere with the treatment for heart disease.

A very strong association between generalized anxiety disorder, or GAD, and the occurrence of cardiovascular events such as strokes, heart attacks, heart failure and death. Patients experienced chest pain and other symptoms when they exerted themselves and engaged in certain activities, a condition known as stable coronary heart disease. It was found that people who had this type of heart disease, plus GAD, had a higher rate of cardiovascular events than did patients who did not suffer from GAD. The findings also showed that risk factors for heart disease such as smoking, physical inactivity and skipping meds did not play a role in the greater number of cardiovascular events. In short, these findings suggest, GAD can predict whether people with stable coronary heart disease will have a stroke, heart attack or other serious heart problem.

Little is known about whether the family psychosocial environment affects heart disease. Many studies have found a positive association between the family psychosocial environment and coronary heart disease. The impact of family psychosocial environment on later socioeconomic position and/or psychosocial functioning may lead to higher heart disease risk. (Loucks et. al.).

### **METHODOLOGY**

*On the basis of the introduction and the review of literature, the following methodology has been followed for the study*

#### **Objective:**

1. To study the level of anxiety and its effects among patients with heart disease.
2. To compare the level of anxiety among males and females with heart disease.
3. To study the level of depression and its effects among the persons with heart disease.

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4. To compare the level of depression among males and females with heart disease.
5. To study the role of family's psychosocial environment and its associations with heart disease.

### ***Hypothesis:***

*Based on the above objectives, the following hypotheses were formulated:*

1. There will be a significant difference between the level of anxiety among males and females with heart disease
2. There will be a significant difference between the level of depression among the males and females with heart disease.
3. There will be a significant relationship between the role of family environment and heart disease.

### ***Research Design:***

Compared group research design was used for the purpose of the research. The group was divided into males and females with heart disease

### ***Sample and Sampling Techniques:***

A sample of 30 persons with heart disease was taken by the purposive sampling technique, it was further divided into two groups of 15-15 each; one group consisted of males with heart disease and other group consisted of females with heart disease

#### **Inclusion Criteria:**

- The sample chosen must belong to Rajasthan region.
- The sample chosen must be above 45 years of age.

#### **Exclusion Criteria:**

- The sample chosen should not be suffering from any other psychiatric disorder.
- The sample chosen should not have myocardial infarction and should not have undergone heart surgery.
- The sample below the age of 45 was excluded.

### ***Variables:***

The purpose of the investigation is to study the level of anxiety and depression among the persons with heart disease..

### ***Measures:***

#### **Beck's Depression Inventory –**

The original version of BDI was introduced by Beck, Ward, Mendelson, Mock & Erbaugh in 1961. The BDI was revised in 1971 and made copyright in 1978 (Groth Marnat, 1990). Both the original and revised versions have been found to be highly correlated.

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**Type of instrument:** The BDI is a 21 item self-report rating inventory measuring characteristic attitudes and symptoms of depression.

**Description:** The BDI takes approximately 10 minutes to complete although clients require a fifth-sixth grade reading age to adequately understand the questions.

**Reliability and Validity:** Internal consistency for BDI ranges from .73 to .92 with a mean of .86 (Beck & Garbin, 1988).

**Concurrent validity:** Correlations with clinicians' ratings of depression using revised BDI range reported as high to moderate ranging from .55 to .96

### Scoring and Interpretation:

Score	Interpretation
05-09	These ups and downs are considered normal.
10-18	Mild to moderate depression
18-29	Moderate to Severe Depression
30-68	Severe Depression
Below 4	Possible denial of depression, faking good

### Hamilton Anxiety Scale –

In 1959 Hamilton presented a rating scale which was designed to assess the severity of the disorder in patients suffering from anxiety. It covers the whole spectrum of anxiety. The total number of items present in this scale are 14 with a total score of 56.

Score	Interpretation
1-14	Mild anxiety
15-28	Moderate Anxiety
29-42	Severe Anxiety
43-56	Very Severe Anxiety

### Family Environment Scale –

The Family Environment Scale (FES) was developed and designed by Mr. Sanjay Vohra in 1998. The FES was developed as a means to get information about the family environment in a rapid, objective and standardized manner.

### Method of Data Collection:

First a list of subjects with heart disease were made, this was done by contacting a hospital situated in Jaipur, Rajasthan. After that each client was spoken to directly by the investigator and was assured that the information revealed by him/her will not be disclosed. Many clients were reluctant to share their experiences and refused blatantly to reply to the questions. But they were

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later convinced to reveal to fill the data required for the purpose of the study and were assured about the confidentiality of the information.

### *Statistical analysis:*

Collected data was tabulated, classified, grouped and processed through the computer tables, and graphs, etc. were prepared with the help of computer. The software to be used is Statistical Package for Social Sciences. The data will be analyzed using mean, correlation and t-test.

### *Ethical consideration:*

Information gathered during the course of the study was kept confidential.

The information was gathered by the consent of subjects.

## **TABULATION AND INTERPRETATION**

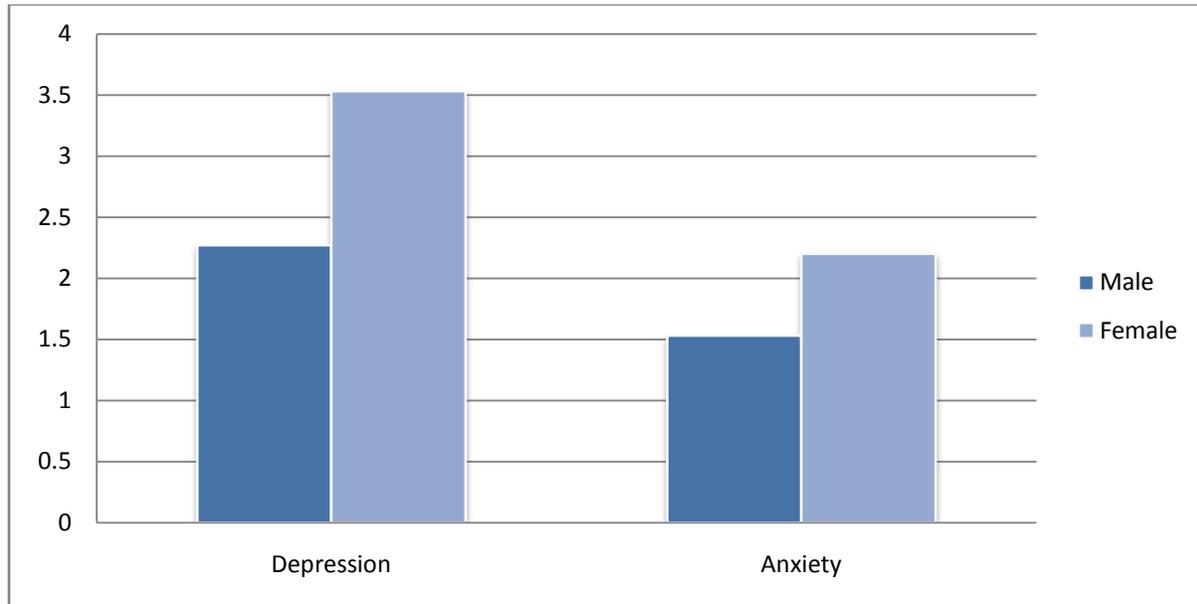
### *TABLE 1 - Mean, SD and t-test*

*The table below demonstrates the average amount of anxiety and depression experienced by men and women with heart disease.*

Variables	Gender	N	Mean	S.D.	t-test
Depression	Male	15	M1 = 2.27	0.80	4.8
	Female	15	M2 = 3.53	0.63	
Anxiety	Male	15	M1 = 1.53	0.64	3.4
	Female	15	M2 = 2.20	0.41	

(Note: M1 = Mean of males, M2 = Mean of females)

*Graph 1 – Mean, The graph below demonstrates the average amount of anxiety and depression experienced by men and women with heart disease.*



The above table represents the average amount of anxiety and depression experienced by men and women with heart disease. It can be interpreted from the table that the level of anxiety and the level of depression experienced by the females were more when compared with males (For Depression,  $M1 = 2.27$  and  $M2 = 3.53$  ; for anxiety  $M1 = 1.53$ ,  $M2 = 2.20$  ). During the process of case-history taking from the clients the investigator found that the females lived in more inhibited and protective environment. Most of the females involved in the process of data collection belonged to rural area and were admitted in the hospital as they were diagnosed with heart disease. As enquired during case history taking they often made remarks such as “I am not allowed to go out of the house, I spent my time at home and whenever my children go out for work I fear that something bad will happen to them”. Most of the females also reported high blood pressure level. On the other hand, when males were enquired about their problem they stressed upon their duties and role they play in their family which leads to the development of high level of stress and may lead to heart related problems. The major problematic areas reported by the female clients on Hamilton Anxiety Scale were highly anxious mood, insomnia, depressed mood most of the time, pain in chest and gastrointestinal problems mostly related to diarrhoea. While males reported severe chest pain, difficulty in concentrating and poor memory and respiratory problems associated to their heart problem. When BDI was administered both males and females felt uneasy to discuss about their interest in sex. While the major problematic areas reported were sadness, indecisiveness, guilt, insomnia, loss of appetite and loss of weight by both male and female clients. During the study it was also observed by the investigator that the male clients were confident and self-motivated while the female clients were less interested in answering the questions and seemed inhibited to discuss about their problems. Studies have shown that mental stress has a negative effect on a person’s heart health. In particular

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unmanaged stress can lead to high blood pressure, arterial damage, irregular heart rhythms and a weakened immune system. For people with heart disease, depression and anxiety can increase the risk of an adverse cardiac event such as a heart attack or blood clots. For people who do not have heart disease, depression and anxiety can also increase the risk of a heart attack and development of coronary artery disease. The above graph also makes the data easier to comprehend.

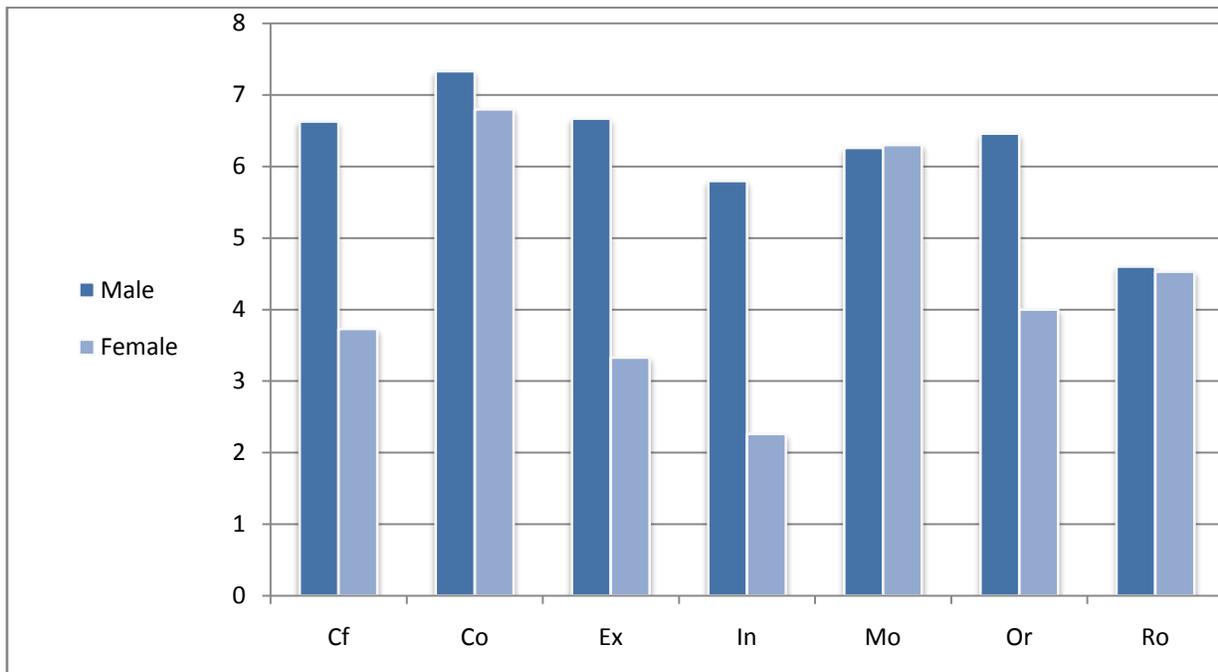
**Table 2: Mean, SD and t-test**

*The following table demonstrates the average amount of various dimensions of family environment among men and women with heart disease.*

Dimensions	Gender	N	Mean	S.D.	t-test
Competitive Framework (Cf)	Male	15	M1 = 6.33	6.33	3.96
	Female	15	M2 = 3.73	3.73	
Cohesion (Co)	Male	15	M1 = 7.33	1.23	1.23
	Female	15	M2 = 6.80	1.14	
Expression (Ex)	Male	15	M1 = 6.67	1.87	4.43
	Female	15	M2 = 3.33	2.22	
Independence (In)	Male	15	M1 = 5.80	2.45	4.853
	Female	15	M2 = 2.26	1.38	
Moral Orientation (Mo)	Male	15	M1 = 6.26	1.53	0.000
	Female	15	M2 = 6.30	1.79	
Organization (Or)	Male	15	M1 = 6.46	2.03	3.068
	Female	15	M2 = 4.00	2.36	
Recreational Orientation (Ro)	Male	15	M1 = 4.60	1.53	0.132
	Female	15	M2 = 4.53	1.12	

(Note : M1 = Mean of males; M2 = Mean of females)

Graph 2 – Mean



The above table represents the average or mean of the various dimensions of the family environment among males and females with heart disease. During the case-history taking it was observed by the investigator that the females belonged to rural areas and were admitted in a city hospital for their treatment. Most of the females reported that their family environment was quite conservative. They were not allowed outings, they were just allowed to talk to neighbours, and so most of their time was spent at home doing household chores. They seemed to be more concerned about their children's well-being. While males reported that they lived in free and independent environment, though they were not allowed to misuse their freedom. They enjoyed many forms of leisure activities like smoking and drinking occasionally with friends. On the dimension of competitive framework the males were more dominant on than females ( $M1 = 6.33$ ,  $M2 = 3.73$ ;  $M1 > M2$ ). Thus it can be interpreted that the male clients are high on competitive and achievement orientation. Their family members give importance to the success one achieves at work and other areas of life. While a comparatively low average score for female clients suggests that their family members are low on competitiveness and their need for achievement is also low. On the dimension of Expressiveness the male clients seems to dominate the female clients ( $M1 = 6.67$ ,  $M2 = 3.33$ ;  $M1 > M2$ ), this shows that they are encouraged to act openly and express their feelings. They are free to express the feelings of disapproval and disagreement as and when required. While a comparatively low average score for female clients indicate that they display difficulty in expressing their feelings and thoughts to one another. They are always cautious about what they say to each other in the family and important family matters are not discussed openly. Male clients are also dominant on the dimension of Independence when compared to female clients ( $M1 = 5.80$ ,  $M2 = 2.26$ ;  $M1 > M2$ ) thus it can be said that the family members of male clients are encouraged to be independent. They are assertive and self

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sufficient and make their own decisions. Low average score for female clients indicate that their family members are not encouraged to speak up for themselves and there exists little privacy at home. Most of decisions are made by one member in the family. On other dimensions such as Cohesiveness, Moral orientation and Recreational orientation both male and female clients exhibit almost same average scores. Thus on these dimensions it can be interpreted that they display support, help, calm and commitment towards their family members. They place equal emphasis on ethical, moral, and religious issues and values held by their family members. Also, they actively participate in social, recreational, cultural and social activities. On the dimension of Organization both male and female clients display a high average score but the average score of male clients is higher than female clients thus both of their family members place greater importance in the areas of clear organization, structural planning and responsibilities. The above graph also makes the data easier to comprehend.

### LIMITATIONS AND FURTHER SUGGESTIONS

*The limitations of the study are as follows:*

1. The sample size is too small. This limits the efficiency of the findings to be generalized. A large sample should be taken to generate the results.
2. There was no control group in the study due to time constraints. Inclusion of control group should have provided a comparative analysis of anxiety and depression. Further researches should incorporate control group.

*The merits of the study are mentioned below:*

1. The study reveals the gender differences among persons with heart disease along with the level of anxiety and depression faced by the persons.

The study has achieved most of its goals; however future studies in this area should explore more aspects pertaining to heart disease and its effects.

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