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## Depression among elderly residents of Kolkata: A comparative study on cardiac and non cardiac elderly patients

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### Abstract

Depression is the most common problem of the elderly. In the present scenario of the migration of the youth, retirement, loneliness, diseases and other causative factors lead to depression among elderly residents of Kolkata. Keeping this backdrop in mind the study emphasized on the cardiac and non-cardiac elderly patients mainly living in Kolkata. The population of the study comprised of hundred elderly belonging to two age groups (60 – 70 years and 70 – 80 years). The Beck Depression Inventory was used to find out their level of depression. Correlation coefficients were calculated to find out the effect of age, gender and cardiac condition on the two age groups and gender groups. The t – test was also performed to find out the difference between the samples of the study. The present study therefore intends to help us to conclude whether the elderly suffer from depression, the causative factor being cardiac problems and the methods that can be undertaken to eradicate such problems from the lives of the senior citizens.

**Keywords:** Depression, tachycardia, bradycardia, systolic pressure, diastolic pressure

### 1. Introduction

Epidemiological transmission with increasing life expectancy and demographic shifts in the population age profile, combined with lifestyle related increase in the levels of cardiovascular risk factors is accelerating heart disease epidemic in India. A recent study found that men who complain of high anxiety are up to six times more likely than calmer men to suffer from sudden cardiac death. Thus the present intervention is to see whether cardiac patients are more prone to personality and stress related disorders (Dasgupta, 2000). The disease that is caused by stressor induced hormonal effects is termed as psychosomatic disorder or mind – body disorder. Greene and Delistraty (1992) [2] proved that people who are habitually hurried, competitive and hostile would tend to be heart attack prone. In one of the study by Sudin, O. (1995) [5] it was found that Type A personality men irrespective of coronary status showed larger systolic and diastolic pressure response to both mental and physical stress than did Type B men. Environmental and social factors also play a major role in reactivity differences (Soaf PG, 1997) [4]. Price, F. W. (1966) [3] suggested that distinct physiological pathways are activated in response to acute psychological stress. Therefore the problem for the present research was selected as a study on the psychosocial problems of depression among patients having cardiac disease.

### 2. Method

#### 2.1 Objectives

The present study would attempt to find out

1. Cardiac patients feel isolated from others because of the disease.
2. Cardiac patients believe that proper diet and medication can help them cure the disease.
3. Cardiac patients believe that they are leading a stressful life resulting in development of cardiac problem.
4. Cardiac patients think that they would have been energetic and happier in the absence of cardiac problem.
5. Cardiac patients feel more anxious than normal people.
6. Cardiac patients feel more depressed than their normal counterparts.

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**2.2 Hypotheses**

1. Cardiac patients feel isolated from others because of the disease.
2. Cardiac patients believe that proper diet and medication can help them cure the disease.
3. Cardiac patients believe that they are leading a stressful life resulting in development of cardiac problem.
4. Cardiac patients think that they would have been energetic and happier in the absence of cardiac problem.
5. Cardiac patients feel more anxious than normal people.
6. Cardiac patients are more depressed than others.

**2.3 Sample**

The technique of purposive sampling was used to select a sample of hundred individuals comprising of fifty cardiac patients and fifty non cardiac patients. The sample was collected mainly from the city of Kolkata.

**2.4 Tools Used**

1. An investigator made questionnaire was used. The questionnaire consisted of twenty four questions of which eight are open ended and sixteen are closed ended. The items relate to topics like – kind of cardiac problem patients are suffering from, time of experiencing the disease, whether the patients have undergone any operations, whether the patients suffer from anxiety, whether this suffering is before or after the illness, is life stressful because of the illness. Important items were identified and the number and percentage of the subjects responding in affirmative or negative to each of these items were found out, tabulated and compared.
2. Beck Depression Inventory was used to measure the depression scores of the cardiac patients and the others. It is a standardized instrument widely used for the assessment of adult depression. It is a self report measure of depression which includes 21 items (scored 0 to 3) of which 15 items deal with psychological symptoms and only 6 are concerned with somatic symptoms. The inventory does not have a limit but usually it takes 10 – 15 minutes to complete answering. The minimum score obtainable is 0 and the maximum score is 63. Higher score indicates more depression. The inventory has high reliability and validity (Beck *et al.*, 1961).

**3. Variables**

Independent Variables      Dependent Variable

1. Age                                      1. Depression
2. Gender

**4. Method of Statistical Analysis**

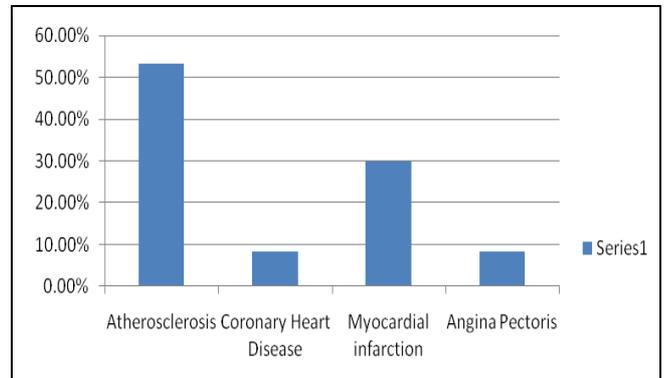
1. Mean, Standard Deviation was calculated.
2. Comparison of Mean and Standard Deviation Depression scores of cardiac patients with the normal individuals were calculated.
3. Correlation coefficients were calculated to find out whether there is a relation between cardiac problem and depression.
4. T – test was performed to find out the difference between the depression scores of cardiac patients and the non cardiac individuals.

**5. Result and Discussion**

The basic descriptive statistics (viz., the means and standard deviations) is represented in Table 1.

**Table 1:** The different kinds of cardiac problems suffered by the respondents

Kind of Cardiac Problem	Percentage of Respondents
Atherosclerosis	53.34%
Coronary Heart Disease	8.33%
Myocardial infarction	30%
Angina Pectoris	8.33%

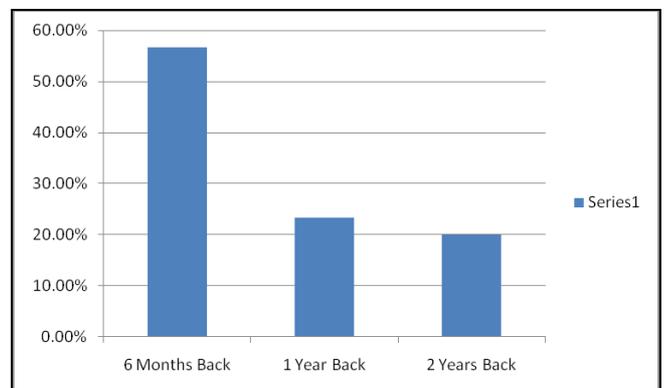


**Fig 1:** The different kinds of cardiac problems suffered by the respondents

Table 1 and Figure 1 shows that maximum number of respondents suffer from atherosclerosis and minimum number from angina pectoris.

**Table 2:** Duration for which the subjects are undergoing cardiac problems. (N = 100)

Duration of Illness	Percentage of Respondents
6 Months Back	56.66%
1 Year Back	23.33%
2 Years Back	20%

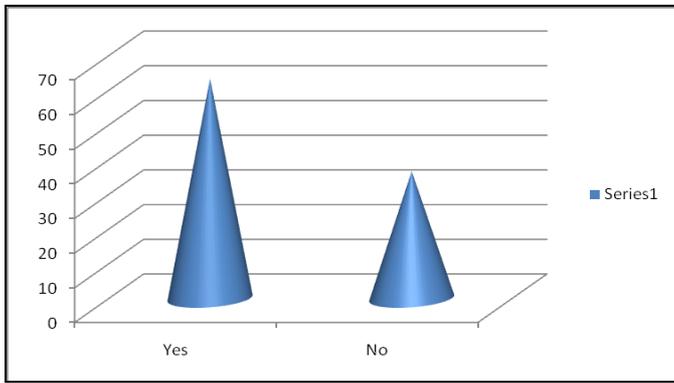


**Fig 2:** Duration for which the subjects are undergoing cardiac problems. (N = 100)

The table and the figure shows that maximum number of patients has experienced the disease 6 months back and minimum number of them 2 years back.

**Table 3:** The number of patients who have undergone cardiac operations (N = 100)

Options	Percentage of Respondents
Yes	63.33%
No	36.60%

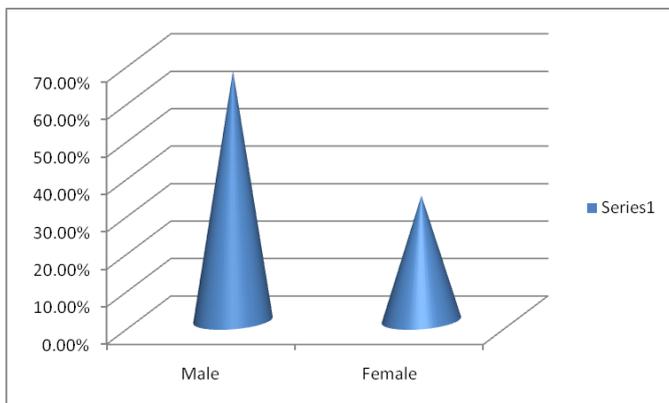


**Fig 3:** The number of patients who have undergone cardiac operations (N = 60)

Table 3, Figure 3 shows that maximum number of patients has undergone operations.

**Table 4:** The gender wise composition of the sample (N = 100)

Gender	Percentage of Respondents
Male	66.66% (40)
Female	33.33% (20)

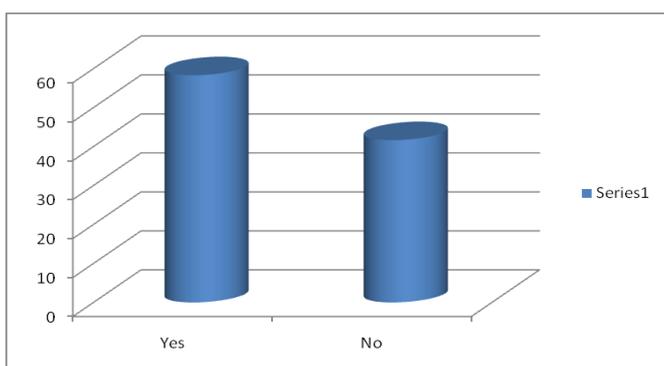


**Fig 4:** The gender wise composition of the sample (N = 100)

This table and the figure reveals that 66.66% of the respondents suffering from the disease are male and the rest are female. Therefore, it seems that the probability of developing a psychosomatic disorder is more in males.

**Table 5:** Feeling of isolation after the onset of the cardiac problems by the patients (N = 100)

Options	Percentage of Respondents
Yes	58.30%
No	41.65%

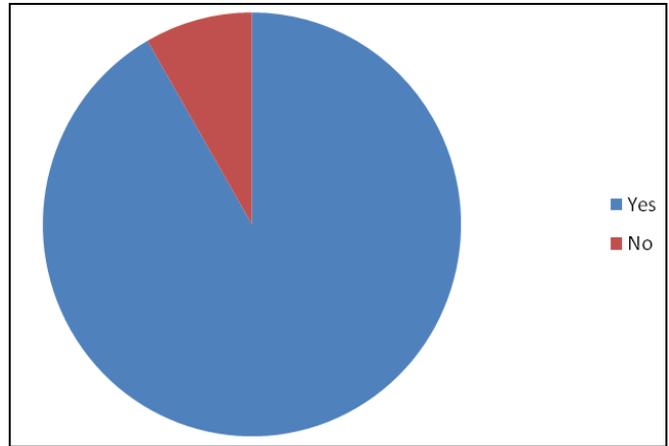


**Fig 5:** Feeling of isolation after the onset of the cardiac problems by the patients (N = 100)

The table and the figure shows that most of the respondents feel isolated after the onset of the disease. Thus the first hypothesis as mentioned earlier is verified.

**Table 6:** The number of cardiac patients suffering from anxiety (N = 100)

Options	Percentage of Respondents
Yes	91.66%
No	8.33%

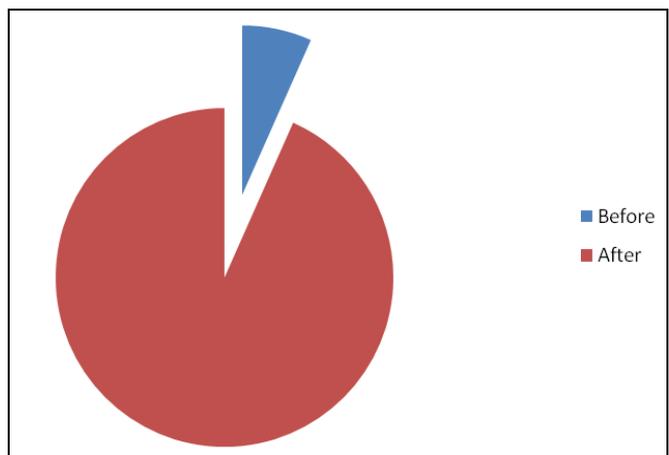


**Fig 6:** The number of cardiac patients suffering from anxiety (N = 100)

Table 6, Figure 6 shows that maximum number of the patients suffer from anxiety at times. Therefore the fifth hypothesis is verified.

**Table 7:** Whether the patients suffer from anxiety before of after the sickness (N = 100)

Options	Percentage of Respondents
Before	6.66%
After	93.33%

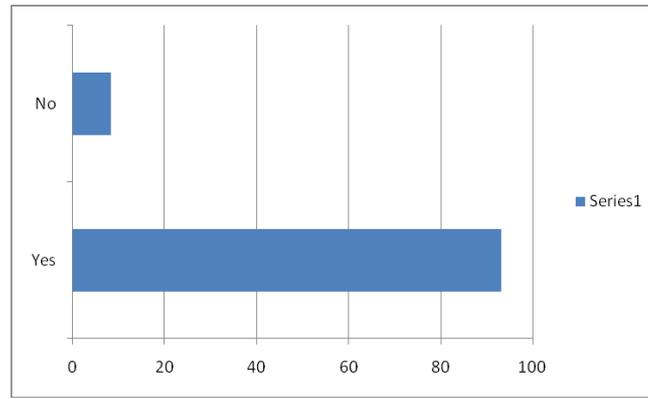


**Fig 7:** Whether the patients suffer from anxiety before or after the sickness (N = 100)

This table and the figure shows that maximum number of patients suffer from anxiety after the cardiac problem. Thus the fifth hypothesis as mentioned earlier is verified.

**Table 8:** Whether cardiac patients believe that proper diet and medication can help in curing the disease (N = 100)

Options	Percentage of Respondents
Yes	93.30%
No	6.70%

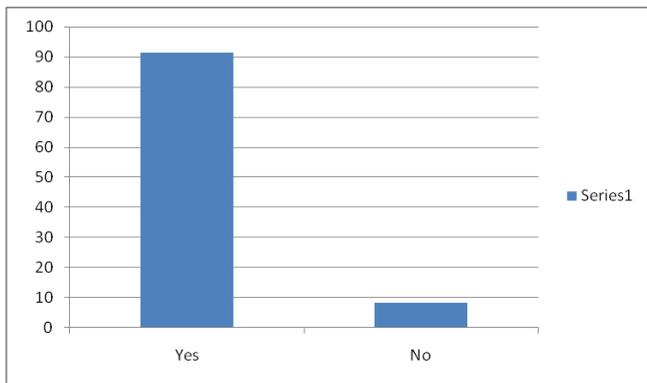


**Fig 8:** Whether cardiac patients believe that proper diet and medication can help in curing the disease (N =100)

The table and the figure shows that maximum number of respondents believe that proper medication and diet can help them cure the disease.

**Table 9:** Whether the fast paced and stressful life leads to heart problem (N = 100)

Options	Percentage of Respondents
Yes	91.66%
No	8.34%

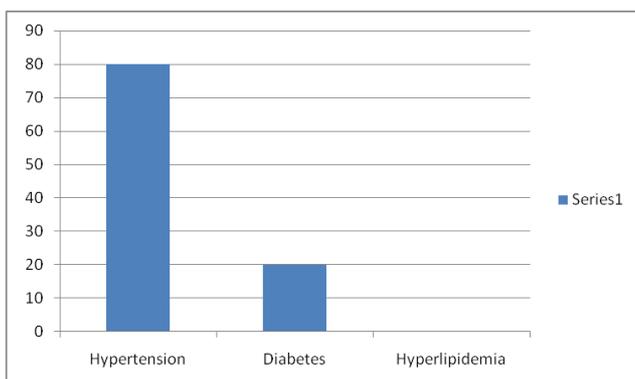


**Fig 9:** Whether the fast paced and stressful life leads to heart problem (N = 100)

The data shows that maximum number of the patients believe that a fast paced and stressful life leads to heart problem.

**Table 10:** Whether the respondents suffer from any other chronic illness apart from cardiac problem (N = 100)

Types of Chronic Illness	Percentage of Respondents
Hypertension	80%
Diabetes	20%
Hyperlipidemia	0%

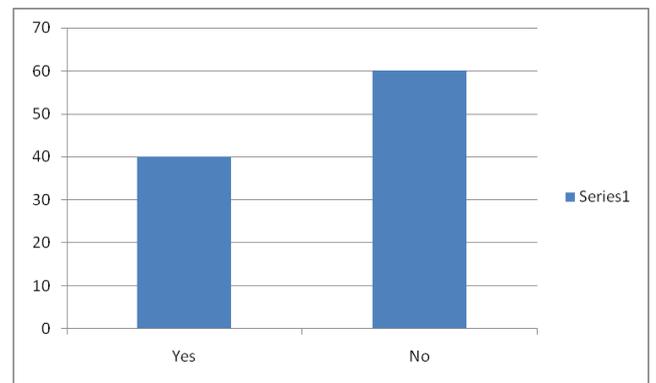


**Fig 10:** Whether the respondents suffer from any other chronic illness apart from cardiac problem (N =100)

Data shows that maximum number of patients suffer from hypertension apart from cardiac problem.

**Table 11:** The percentage of respondents consuming cigarette (N = 100)

Options	Percentage of Respondents
Yes	40%
No	60%

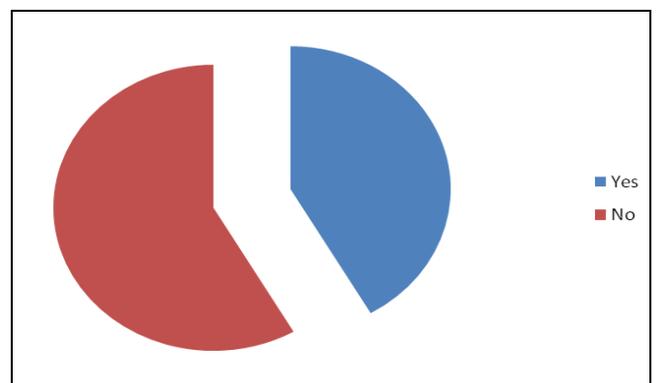


**Fig 11:** The percentage of respondents consuming cigarette (N = 60)

The data reveals that maximum number of patients do not smoke.

**Table 12:** The percentage of respondents consuming alcohol (N = 100)

Options	Percentage of Respondents
Yes	41.66%
No	58.33%

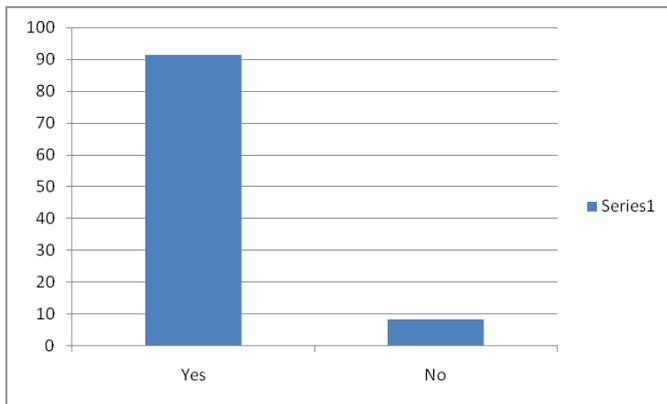


**Fig 12:** The percentage of respondents consuming alcohol (N = 100)

Table and the figure shows that maximum number of patients do not consume alcohol.

**Table 13:** Whether the cardiac patients would have been more energetic and happier in the absence of the disease (N = 100)

Options	Percentage of Respondents
Yes	93.30%
No	8.30%



**Fig 13:** Whether the cardiac patients would have been more energetic and happier in the absence of the disease (N = 100)

Data shows that maximum number of the patients believe that they would have been more energetic and happier in absence of the disease. Thus the fourth hypothesis has been verified.

**Table 14:** Mean and Standard Deviation values for Heart Beat (Tachycardia, Bradycardia), Hypertension (Systolic and Diastolic), Depression scores of cardiac patients (N = 100)

Mean	Heart Beat		Hypertension		Depression
	Tachycardia	Bradycardia	Systolic	Diastolic	
	102.46	48.5	151.58	107.16	48.1
Standard Deviation	3.73	5.56	8.42	9.39	5.04

The table shows the mean and standard deviation values of the following variables. The data represents that the scores are more or less homogenous.

**Table 15:** Correlation Coefficients of Heart Beat, Hypertension and the Depression scores.

	Heart Beat	Depression	Hypertension
Heart Beat	1	--	--
Depression	0.63**	1	--
Hypertension	0.52**	0.83**	1

\*\* p <.01

Table 15 and Figure 13 reveal the positive and significant relation between depression and hypertension, depression and heart beat and heart beat and hypertension scores of cardiac patients.

**Table 16:** Results of t-test: Difference between Mean Depression Scores of Two Groups (Cardiac Elderly patients and the Non Cardiac individuals).

t obt	df	t crit .05	t crit .01	Decision
6.8	98	1.66	2.36	Significant at .05 and .01 levels

The result of the t – test reveals that there is a significant difference between the depression scores of the cardiac patients and the non cardiac individuals.

### 6. Conclusion

The findings of the present study prove that the majority of

the cardiac patients are more prone to anxiety, a fast paced and stressful life leads to cardiac problem. The patients believe that they would have been happier and energetic in the absence of the disease. The cardiac patients are more likely to suffer from anxiety neurosis, neurasthenia and reactive depression. Cardiac patients feel isolated from others because of the disease. Cardiac patients believe that proper diet and medication can help them cure the disease. There is a positive and significant relationship between heart beat, hypertension and depression. Heart beat and hypertension being two parameters of cardiac problems in this study. There is a considerable difference between the depression scores of the cardiac elderly patients and the non cardiac elderly.

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