



Prevalence of Depression among Patients Attending Cardiology OPD: A Hospital Based Study in South India

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Abstract

Cardiovascular disorders are recognized to be a standout among the most well-known reasons for death among people in the world. Depression is considered to be an autonomous risk factor like diabetes, smoking, hypertension etc., for the development of cardiovascular disease. Depression is also found to influence the recovery of people with coronary illness, and increases the chances of further heart problems. It is seen that patients with depression are more prone for a detrimental lifestyle (like diet high in calories and salt, smoking, lack of exercise etc.,) and they have poor drug compliance. Co morbidity poses a treatment challenge for Cardiology and Psychiatry. The intention of this study is to gain appropriate knowledge about the prevalence of depression among patients attending cardiology outpatient clinic. In the present study a hundred patients were selected consecutively from cardiology outpatient department and were evaluated for the presence of depression.

Keywords: Cardiac outpatients, Psychiatric morbidity, HAM-D.

Introduction

For centuries, the mind body relationship has been postulated. These findings reveal that anxiety and depression are not simply “in the mind”. (Ashish Chadha et al)¹. Like any other physical illness depression has a negative impact on the entire body, most importantly the cardiovascular system. Despite various investigations and studies that elicit a clear relationship between cardiovascular diseases and depression, patients with myocardial infarction, arrhythmias, coronary heart disease etc., are not commonly screened for psychological or emotional distress, that which contributes to or emerges as a consequence of cardiovascular disorders.

Mental illness can be defined as a distress, feeling or an emotion on the one hand and on the other as a clinical condition which will be diagnosed using the standard diagnostic criteria. Patients may present with some symptoms described in diagnostic criteria such as easy fatigability, irritability, anxiety, reduced appetite, low mood, decreased concentration and attention etc., without actually having illness that is of syndromic level. Depression is no longer considered as just a low mood – it has significant impact on both physical and mental health of the patient.

Many of our life situations such as loss of a loved one, loss of job, substance abuse such as alcohol or drugs, inadequate and disturbed sleep, assault, physical abuse or sudden accidents can all lead to

mental distress. These may resolve with no medical intervention but however these life stressors will be a trigger for cardiovascular events. The patients with cardiovascular diseases usually present with symptoms such as chest tightness, sweating, palpitations, breathlessness can normally be seen in healthy individuals and also seen during stressful life situations. This overlapping of symptoms makes it very difficult for primary care physicians and patients to ascertain the casual role of stress to cardiovascular disease and vice versa.

Traditionally there is always a social stigma that is related with mental illness and this taboo makes patients and their families reluctant to even discuss issues identified with emotional wellness. Cardiologists and physicians thus tend to overlook symptoms of emotional distress and feelings leaving them with merely treating the medical illness and risk factors associated with it. The main purpose of this present study is to establish the fact that there is an increased prevalence of psychiatric co morbidity among patients with cardiac illness and to highlight the significance of early intervention in reducing the disease burden.

The chances of a patient with cardiovascular disease developing depression is three times more than that of healthy individuals in the population. In a medical setting depression is mostly under diagnosed. The American Heart Association recommends that, similar to diabetes, hyperlipidemia, smoking and hypertension, depression is recognized as a major risk factor for coronary heart disease.

The risk of developing a new disease or worsening of already existing cardiovascular disease (i.e., hospitalizations, treatment compliance, more complications) or even death due to it has increased by about 80% in adults with depression, irrespective of whether they had any prior cardiovascular disease or not. Depression is also found to increase the risk of a patient with angina developing myocardial infarction, atrial fibrillation, stroke, or even lead to sudden death.

The relationship between cardiovascular disease and depression is bidirectional. In other words, cardiovascular disease increases the risk of developing depression, depression increases the risk of developing cardiovascular disease and presence of comorbidity in either case may lead to a worsened outcome. Though a psychiatric illness, depression increases the risk of cardiovascular disease and most importantly it also complicates treatment and prognosis.

Objectives

The objective of the study was to find the prevalence of depression among patients attending cardiology outpatient clinic and socio demographic factors that contribute to it.

Methodology

Setting: The study was conducted at Cardiology OPD, Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram. Study period was from June 2017 to December 2017

Sample: A sample of 100 patients attending Cardiology OPD were consecutively chosen for the study.

Study Design: Observational study - Descriptive type

Inclusion Criteria

1. Patients attending cardiology outpatient department.
2. Patients belonging to both sexes were included
3. Patients above eighteen years of age
4. Patients with diagnosis of cardiac disease
5. Patients with absence of any prior psychiatric illness

Exclusion Criteria

1. Patients aged below eighteen years.
2. Presence of significant physical illness where interviewing cannot be done
3. Patients with severe cognitive impairment
4. Patients who are not willing to participate in the study

Interview: Patients attending Cardiology outpatient department were consecutively selected and the nature of the study and its objectives was explained to the patient and their relatives. A written informed consent was obtained from the patients as well as their family members. The assessment was done in a single session lasting for about an hour. The study was completed over a period of six months.

Tools Used

1. Self innovated proforma to elicit the Socio Demographic data, co morbid illness and treatment compliance.
2. Hamilton Rating Scale for Depression (HAM-D)
3. ICD – 10 criteria for Mental Disorders (WHO)

Data Analysis

The collected data was entered in Microsoft excel and analyzed using SPSS version 21. Quantitative data was analyzed using descriptive analysis. Correlation between age, gender, education, employment status, marital status, previous h/o psychiatric illness, co morbidity, treatment compliance, presence of social support, with depression was analyzed using Pearson's correlation coefficient method. The association between the above said various factors and depression was found out by Chi square test. P value less than 0.05 was taken as significant.

Results

In this study there were 100 participants with mean age to be 53.64 years and standard deviation to be 12.04 years. In the present study 32% of the participants were in the age group of 51 -60 years and 25% of them were between the age group of 61-70 years. Not many of the participants were below 30 years and above 70 years and it were found to be 5% in each age group respectively. A majority of the participants were males 53% remaining 47% was females and a large proportion of the participants 81% of them were married.

Among 100 participants, 41% were illiterates and 41% have completed schooling. Only 18% of the participants have done degree courses. Regarding occupation 74% of the participants were employed.

Majority of them were living in rural areas and it was 63% only 37% were living in urban areas. Also most of them belonged to lower socio economic status 63% and 37% were in middle socio economic status. No participants were found to be in upper social class.

Among the study participants 56% of them had social support from families and friends. In this study population 97% had no past history of anxiety and depression. Whereas, 3% of the participants had previous history of anxiety and depression. Family history of anxiety and depression was found in 5% of the study population and 97% of the participants had no family history of depression. Substance abuse was present in 35% of the participants and psychotropic drug use was there in 12% of the participants. Duration of illness in 19% participants was less than one year and more than a year for 81% of the participants, and 70% of them compliance to medic In this study, 53% of the participants had Ischemic Heart Disease, 48% of them had Diabetes Mellitus and Hypertension was there in 45% of the participants and among the 100 participants, 18% of them were newly diagnosed cases. Among the 100 participants for 68% of them the distance to the health care center from their residence was more than 10 kms.

55% of the participants had mild depression, 26% of the participants had moderate depression and very severe depression was found only in 1%. Among the participants 18% of them did not have depression.

Among the study participants, those who have educated were having less depression (44%) compared to illiterates (38%) with an odds ratio of 0.232. the difference was found to be statistically significant. ($p = 0.02$). Participants from lower socio economic class have higher number of depression (67%) compared to participants from

middle socio economic class (26%) with an odds of 0.295 and the difference is found to be statistically significant. ($p < 0.05$).

It was found that there are 8.4 times lesser chances of developing depression in participants who have good social support when compared to participants without social support. The difference was found to be highly statistically significant. ($p < 0.001$)

Participants who had chronic illness for more than 1 year duration are 2.6 times at higher risk of developing depression when compared to participants with duration of illness less than a year, and the p value was found to be 0.087.

In this study participants who were adherent to their treatment were having lesser depression compared to participants who were not adherent to treatment with an odds ratio of 4.148. The difference was found to be statistically significant. ($p < 0.05$).

Table 1: Socio Demographic Characteristics of Participants

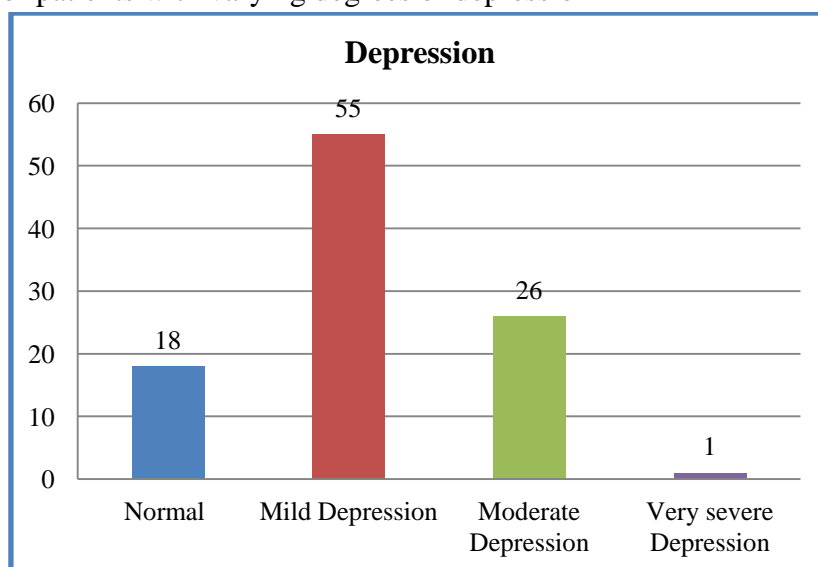
S.No	Variables	N (%)
1.	Age in Years	
	<30	5
	31-40	11
	41-50	22
	51-60	32
	61-70	25
	>70	5
2.	Sex	
	Male	53
	Female	47
3.	Education	
	Illiterate	41
	School	41
	Degree	18
4.	Occupation	
	Employed	74
	Unemployed	26
5.	Location of Residence	
	Urban	37
	Rural	63
6.	Marital Status	
	Married	81
	Unmarried	19
7.	Socio economic Status	
	Lower	63
	Middle	37
8.	Social Support	
	Yes	56
	No	44
9.	Substance abuse	
	Yes	35
	No	65

Table 2: Clinical Details of Participants

S.No	Variables	N (%)
1.	Past History	
	Yes	3
	No	97
2.	Family History	
	Yes	5
	No	95
3.	Psychotropic	
	Yes	12
	No	88
4.	Duration of illness	
	< 1 year	19
	> 1 year	81
5.	Treatment Compliance	
	Yes	70
	No	30
6.	IHD	
	Absent	47
	Present	53
7.	DM	
	Absent	52
	Present	48
8.	Hypertension	
	Absent	55
	Present	45
9.	New Case	
	Absent	82
	Present	18

Table 3: Proportion of patients with varying degrees of depression

Variables	Frequency
Depression	
Normal	18
Mild Depression	55
Moderate Depression	26
Very severe Depression	1

Figure 1: Proportion of patients with varying degrees of depression**Table 4:** Association between various factors with Depression

Variables	Depression		Total	Odds ratio	Chi Square	P value
	Absent	Present				
Age						
<50 years	8	30	38	1.387	0.387	0.534
>50 years	10	52	62			
Sex						
Male	13	40	53	2.73	3.256	0.071
Female	5	42	47			
Education						
Illiterate	3	38	41	0.232	5.373	0.02
Literate	15	44	59			
Occupation						
Employed	15	59	74	1.95	0.994	0.319
Unemployed	3	23	26			
Location						
Urban	8	29	37	1.46	0.522	0.47
Rural	10	53	63			
Marital status						
Married	14	67	81	0.784	0.148	0.7
Unmarried	4	15	19			
SES						
Lower	7	56	63	0.295	5.475	0.019
Middle	11	26	37			
Social support						
Yes	16	40	56	8.4	9.636	0.002
No	2	42	44			
Past history						
Yes	0	3	3	-	0.679	0.410

No	18	79	97			
Family history						
Yes	1	4	5	1.147	0.014	0.905
No	17	78	95			
Substance abuse						
Yes	9	26	35	2.154	2.171	0.141
No	9	56	65			
Psychotropic use						
Yes	1	11	12	0.38	0.863	0.353
No	17	71	88			
Duration of illness						
< 1 year	6	13	19	2.654	2.93	0.087
> 1 year	12	69	81			
Treatment compliance						
Yes	16	54	70	4.148	3.73	0.053
No	2	28	30			
IHD						
Absent	10	37	47	1.52	0.645	0.422
Present	8	45	53			
DM						
Absent	11	41	52	1.571	0.73	0.393
Present	7	41	48			
Hypertension						
Absent	10	45	55	1.028	0.003	.958
Present	8	37	45			
New case						
Absent	13	69	82	.490	1.422	.233
Present	5	13	18			

Discussion

“Cardiovascular disease (CVD) and depression are now considered to be the two` most common causes of disability in developed countries and expected to become so for countries of all income levels by 2030” (WHO Press 2008)². In a seminal paper from Australia by Wynn³ in 1967, “40% of the patients were depressed among the patients with perceived disability after myocardial infarction and most of them had not been previously recognized”. In 1972, Cay *et al*⁴. found symptoms of depression in two-thirds of patients after they were admitted for cardiac illness.

Similarly the present study found that there is high prevalence of depression among cardiac patients where the results showed 55% to have mild depression, 26% of study participants had moderate depression and 1% had severe depression. 18% subjects did not have depression. The current study revealed that socio demographic variables such as participants with age less than 50years are more prone for depression than

participants aged 50 years and above. This finding is similar to studies of Cohen & White⁵ (1951), Wood⁶ (1958), Mayou⁷ (1973) where the results reported that psychiatric symptoms and cardiac illness are commonly seen in younger age group. This suggests that proper diagnosis and treatment on time of these psychiatric disorders can improve the productivity and reduce the suffering of young vulnerable persons.

This study revealed that females were 2.73 times at a higher risk for developing depression when compared to males, the results were strongly correlates with earlier study conducted by Anne Maria, Moller *et al*⁸., who found that there seems to be increased risk of Cardiovascular Disease in women and they possibly experience higher levels of depression.

Educated people (44%) were having lesser chances of developing depression compared to illiterates (38%) with an odds ratio of 0.232 which was found to be statistically significant ($p < 0.05$) which is in correlation with other study by

Bjelland et al⁹ 2008. The HUNT study showed education level to be having a protective effect against developing anxiety and depression. Patients who with good social support had reduced risk of developing depression by 8.4times compared to participants without social support. The difference was found to be highly statistically significant ($p < 0.001$)

In the ten year literature review by Compare et al¹⁰, 2013 where five studies (three prospective cohort studies, one case-control study and one randomization controlled trail)were selected and coded according to the types of support (social & marital). It was found majority of findings suggests that “depression and low social support can independently pose as risk factors for poor cardiac prognosis”. Some evidence supports in predicting adverse outcomes. Therefore cardiac rehabilitation and prevention programs should thus include not only the assessment and treatment of depression but also a specific component on the family and social contexts of patients.

Participants in the study who had chronic illness > 1year are at 2.6 times higher risk than those with illness for lesser duration. Similarly treatment adherence showed to have lesser depression than non adherence to treatment which was statistically significance ($p < 0.05$)

The study by Goldstein et al¹¹, 2017 determined that depressed patients were 3.7 times more likely to be non adherent to treatment than non depressed patients after controlling for potential confounders.

As it is now widely recognized that clinical depression is related to increased morbidity and mortality in healthy adults and in patients with coronary heart disease (James et al¹² 2017).

The present study findings are in line with earlier literatures that have demonstrated the existence of anxiety and depression to be highly prevalent among cardiac patients. Thus early detection of psychiatric morbidity and treating them was found to improve treatment adherence and improve compliance and thereby improving quality of life among cardiac patients. This knowledge is

important in reducing the disease burden in the community. Additionally consistent efforts should be directed in integrating efficacious approaches along with the conventional management techniques.

Conclusion

In conclusion, after reviewing the literature and the results of the present study we can't ignore the high prevalence of depression and which is independently associated with increased cardiovascular morbidity and mortality. Early identification and treatment of these will enhance the quality of life through an improvement in biological and behavioural mechanisms related to deterioration of illness.

Limitations

The study sample was that of patients attending Cardiac Outpatient department of RMMCH (one selected institution). Hence the study population may not represent the entire community and so it could not be generalized to the community population. Even though the sample size was small and non probable sample selection of the patient were a limitation it was adequate for statistical analysis. Axis II disorders, in particular type A personality was not studied. It is a limitation considering the fact that type A is more often associated with depression. Lack of a comparison group is another key limitation of the study. Addition of a control group would've added more weight age in arriving at more precise hypothesis.

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