

Effect of depression and anxiety on quality of life among cardiovascular patients visiting tertiary care hospital Lahore

Abstract

Cardiovascular diseases are the leading cause of death worldwide. Mental disorders like anxiety and depression are common among cardiovascular patients. These mental disorders have adverse effect on quality of life among these patients which further increases mortality and morbidity among them.

Objective: The propose of this study was to assess the effect of anxiety and depression on quality of life among cardiovascular patients.

Methods: A Cross Sectional study was performed at Sir Ganga Ram Hospital Lahore. 100 patients of CVD were selected by non-probability sampling technique. All adults of both genders aged above 18 years having diagnosed cardiovascular disease, Hospital Anxiety and Depression Scale (HADS) was used to measure the anxiety and depression and WHOQOL was used to assess the quality of life of patients.

Results: Out of total 100 patients 53 were males and 47 were females. The mean age of patients was 54.87 ± 16.66 . Among CVD patients 52 were borderline cases and 33 were abnormal cases of anxiety. 56 cases were borderline and 28 were abnormal cases of depression. Anxiety and depression had adverse effect on quality of life among cardiovascular patients. Low scores were found for physical, psychological and environmental domains of WHOQOL. A significant association was found between social relationships domain of WHOQOL with anxiety and depression and the level of significance was p-values 0.016 and 0.043 respectively. There was significant association between psychological domain of QoL with depression ($P=0.039$) and monthly income ($P=0.016$). There was insignificant Association between educational level, sex, age with QoL, anxiety and depression.

Conclusion: Study concluded that anxiety and depression have negative impact on quality of life and are risk factors for health related quality of life among cardiovascular disease patients. People attending medical care are usually not being assessed for anxiety due to lack of facilities, lack of understanding of disease and over burden of patients. They are responsible for greater mortality and morbidity in cardiovascular disease patients. The depression and Anxiety are the mediating factors and it must be taken into consideration in clinical practices when quality of life is considered as a clinical prerequisite.

Keywords: cardiovascular disease patients, anxiety, depression, quality of life

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Andleeb Shakoor, Hafsa Kamran, Maryam Shakoor, Sidra Khalid, Sughra Shakoor, Hina Shakoor, Shaista Jabeen, Maria Aslam
University Institute of Diet and Nutritional Sciences, Faculty of Allied Health Sciences, University of Lahore, Pakistan

Correspondence: Maria Aslam, Assistant Professor University Institute of Diet and Nutritional Sciences, Faculty of Allied Health Sciences, University of Lahore, Pakistan, University of Lahore 1 km, Defense Road, Lahore Pakistan,
Tel +92 3224300729, Email mmarzaslam@gmail.com

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Introduction

According to WHO by year 2020 cardiovascular disease and anxiety will result in major disability of life.¹ Anxiety disorders are very common medical health condition in the US and effecting the developing countries as well. CVD anxiety and depression are rapidly emerging and are matter of major and growing concern in both developing and devolved countries. Anxiety disorders also affect the developed countries like Pakistan about 40 million adults of age group 18 and above.² Anxiety disorders with a 12-month prevalence rate of 17.7% and higher life time prevalence in women 30.5% than men 19.2% are among the most common psychiatric diagnosis.³ CVDs are the common cause of death globally and take lives of 17.7 million people every year. And 3.6 million in south Asia.⁴ Among CVD females risk of depression is higher than men but cardiac prognosis was worse for male.⁵ Approximately one out every five patients suffering from cardiovascular have major depressive disorder⁶ worldwide major depressive disorder(MMD) was the 4th leading cause of disability in

2002 and by 2020 MMD will result in 2nd leading cause of disability worldwide.⁷ Most of all mental disorders are because of change in behaviors leading to reduced physical activity, an unhealthy diet, sleeplessness, sedentary lifestyle, increased catecholamine, smoking, alcohol and addiction are the leading cause of anxiety and CVD on both sexes men and women.^{8,9} Quality of life has become an important outcome in patients with heart failure. Poor Quality of life is one of the most important characteristics of heart failure.¹⁰ Most studies showed that depression and anxiety were associated with poor Quality of life in patients with heart failure.¹¹ Out of 200million population, one out of three are suffering from these curable diseases.¹² Pakistan contributes a greater share to the global burden of cardiovascular diseases. Pakistan contributes a greater share to the global burden of cardiovascular diseases. CVDs are now the leading cause of death in Pakistan. Prevalence of these disorders are slightly higher in urban areas as compared to the rural areas.¹³

As indicated by research done by Imtiaz Dogar in Pakistan shows high prevalence of anxiety and depression in cardiac patients which

is responsible for greater risk of morbidity and mortality. Hence the timely investigation of anxiety and depression disorders in cardiac patients and their referral to psychiatrists and psychologists can play role in good prognosis of patients.¹⁴ Study conducted by Kyrouf I, Kollia N *et al.*, to find out the association (2002–2012), between depression and anxiety status with 10-year cardiovascular disease incidence among apparently healthy Greek adults in his study 853 members were participated without previous history of CVD 453 men were men and 400 women. And they reported depression and anxiety levels were positively and independently associated with the 10-year CVD incidence, with depression markedly increasing the CVD risk by approximately fourfold.¹⁵ A cross sectional study carried out in Afghanistan in 2015 – 2016 by Hamrah MS *et al.*, to access the wide spread interrelationship of depression and anxiety in hypertensive patients in Afghanistan with depression and anxiety among adult hypertensive out patient in Afghanistan. A total of 234 hypertensive patients were enrolled from which 34.6% were males and 65.4 were females and the average age was 54.6 +12.7 for the hypertensive patient with anxiety and 63.8 +15.0 with depression and 49 +10.2 for general population. It was concluded that depression and anxiety were common in hypertensive patients and further studies were needed and preventive strategies to control psychological problems¹⁶ by Kemp AH, Quintana DS *et al.*, in (2006-2007) to determine depression, ailments of anxiety, and discrepancy of heart rate in healthy patient’s implication for CVD risk. Major depressive disorder patients of which 24 patients were without anxiety 24 with general anxiety disorder and 14 with Parkinson Disease and 94 healthy aged people. These people had no previous record of drug abuse, stroke or any other medical problems these four groups had almost same age gender and BMI. Heart rate variability (HRV) was recorded in these people in resting state condition. The results show that there was decrease in HRV in MDD patients than control ones. And those patients with GAD had the greatest decrease in HRV.¹⁷ A cross sectional study conducted by Hallas CN *et al.*, at United Kingdom 146 patients were examined to determine the psychological and clinical variables predicting mood and quality of life among heart failure (HF). And it was found that depressed and anxious patients have more negative beliefs about Heart Failure, which is responsible for poor quality of life and negative coping behavior.¹⁸

Methodology

A Cross Sectional study performed at Sir Ganga Ram Hospital Lahore for period of 4 months. 100 patients of CVD were selected by non-probability sampling technique. All adults of both genders aged above 18 years having diagnosed cardiovascular disease attending Tertiary Care Hospitals, Lahore. Hospital Anxiety and Depression Scale (HADS) was used to measure the anxiety and depression and WHOQOL was used to assess the quality of life of patients. Data were collected by pretested questionnaire and analyzed by using Statistical Packages for Social Sciences (SPSS) version 21.

Results

In current study data was collected from 100 cardiovascular the results revealed that the majority of patients were male i.e. 53 and 47 were females of the total population. 53 patients were from urban areas and 47 were from rural areas. 46 patients belonged to middle class, 44 patients belonged to lower class while 9 Patients were from upper middle class and 1 patient were from upper class. 19 patients were illiterate, 21 patients attended primary school, 37 attended secondary school and 23 attended territory school. As shown in Table 1.

Table 1 Frequency of patient’s gender, socioeconomic status and demographic location and residential status

Sr no			
1	Gender	Male	53
		Female	47
2	Demographic Location	Urban	53
		Rural	47
3	Socioeconomic Status	Low	44
		Middle	46
		High	12
4	Residential Status	Own	60
		Rented	40

According to the first aim of the study was to find the effect of depression and anxiety among cvd patients Analysis showed that out of all the 100 patients of cardiovascular disease, higher anxiety was observed among cardiovascular patients i.e. 15 patients were not having anxiety, 52 were borderline cases of anxiety and 33 falling in the range of abnormally high anxiety as shown in Figure 1. While in the case of depression higher depression was observed among CVD patients i.e. 16 normal and 56 were of borderline cases of depression and 28 were having abnormally severe depression as shown in Figure 1.

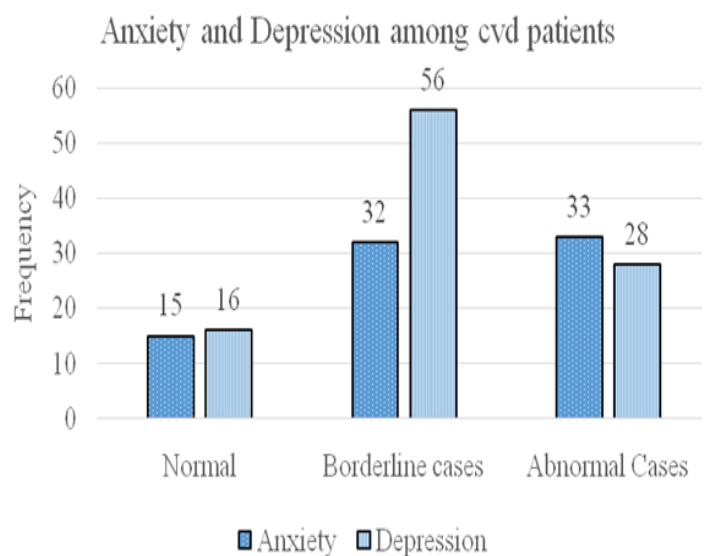


Figure 1 Frequency of cardiovascular patients according to different levels of anxiety.

As, per the second aim of the study; to find out the effect on quality of life among CVD patients, A strong significant association between social relationships domain of WHOQOL with anxiety and depression and the level of significance was p-values 0.016 and 0.043 respectively. As shown in Table 2.

There was insignificant association between Anxiety (P=0.440) and Depression (P=0.809) on Environmental Domain of WHOQOL among cardiovascular patients as shown in Table 3.

Table 2 Association between anxiety and depression on social relationship domain of WHOQOL among cardiovascular patients

	Social relationship domain			P=Value
	Low	Moderate	High	
Anxiety				
Normal	3	9	3	0.016
Borderline cases	18	32	2	
Abnormal cases	19	2	1	
Depression				
Normal	3	11	2	0.043
Borderline cases	20	32	4	
Abnormal cases	17	11	1	

Table 3 Association between anxiety and depression on environmental domain of WHOQOL among cardiovascular patients

	Environmental domain			P=Value
	Low	Moderate	High	
Anxiety				
Normal	10	15	0	0.44
Borderline cases	44	47	0	
Abnormal cases	29	30	1	
Depression				
Normal	15	1	0	0.809
Borderline cases	52	3	1	
Abnormal cases	25	3	0	

There was significant association between psychological domain of WHOQOL with depression (P=0.039) while with Anxiety there was insignificant association (P=0.143) as shown in Table 4. There was insignificant association between Anxiety (P=0.835) and Depression (P=0.439) on Physical Health Domain of WHOQOL among Cardiovascular patients as shown in Table 5.

There was insignificant Association between educational level, sex, age with QoL, anxiety and depression.

Table 4 Association between anxiety and depression on psychological domain of WHOQOL among cardiovascular patients

	Psychological domain			P=Value
	Low	Moderate	High	
Anxiety				
Normal	10	5	0	0.143
Borderline cases	44	7	0	
Abnormal cases	29	4	0	
Depression				
Normal	10	6	0	0.039
Borderline cases	48	7	0	
Abnormal cases	25	3	0	

Table 5 Association between anxiety and depression on physical health domain of WHOQOL among cardiovascular patients

	Physical Health domain			P=Value
	Low	Moderate	High	
Anxiety				
Normal	14	1	0	0.835
Borderline cases	50	2	0	
Abnormal cases	32	1	0	
Depression				
Normal	15	1	0	0.439
Borderline cases	53	3	0	
Abnormal cases	28	0	0	

Discussion

The current study was aimed to find the effect of anxiety and depression on quality of life among patients with cardiovascular disease by using Hospital Anxiety and Depression scale to determine the levels of anxiety and depression that a person is experiencing a cross sectional study done by Frasure-Smith *et al.*, also used similar scale.¹⁹ A study conducted by Dickens *et al.*, to examine the effect of depression on health related quality of life among coronary heart disease patients according to Dickens *et al.*, it was noticed that only the depression not having the significant effect on health related quality of life among CHD patients but depression and anxiety both had significant effect on health related quality of life among coronary disease patients.²⁰ Present results showed that 53% males and 47% females were suffering from cardiovascular disease. A study carried out by Lerner DJ *et al.*, showed that the incidence of CHD among men was considerably high than that in women almost a 2:1 ratio of male to female CHD patients in the population. Current study generally confirmed these findings but suggests that the sex differential may not be as large as was previously suggested.²¹ There is contradiction about the distribution of cardiac disease in male and female genders because different studies showed different results. A study conducted by Maas AH *et al.*, in 2010²² showed that cardiovascular diseases were more common in women than men however the risk of heart disease was often underestimated. While study conducted by Ko HY *et al.*, in 2015 showed that there were no differences between male and female genders.²³ In current results no significant relationship between the level of education and CVD had been established on the other hand educational level of the patients with CVD was found to be significantly lower. the proportion of male patients was found to be 52.5 % and there was no significant relation between gender and QoL and study conducted by Çeviker K *et al.*, also revealed corresponding results.²⁴ The current study showed that anxiety and depression had been negatively associated with health related quality of life. Similar results were found by study conducted by Lim *et al.*, in 2012.²⁵ The current study showed a strong significant association between social relationships domain of WHOQOL with anxiety and depression and the level of significance was p-values 0.016 and 0.043 respectively. A cross sectional study conducted by Ola BA *et al.*, to evaluate the relationship between depression and health-related quality of life (QoL) among heart failure (HF) Patients and it was found that patients suffering from major depressive disorder MDD had worse QoL on dimensions of psychological health, physical health and environment.²⁶ Further studies which correlate with current study

were Juenger J (2002) and Jiang W (2001) they found that depression significantly associated with poorer QoL in patients with HF.^{27,28}

Conclusion

Study concluded that there was an association between anxiety and depression on quality of life among cvd patients. Depression and anxiety were risk factors for Health related quality of life among cvd patients in addition, it was concluded that People attending medical care are not being assessed for anxiety and due to lack of facilities and lack of understanding of disease. They are responsible for greater mortality and morbidity in cardiovascular disease patients. The depression and Anxiety are the mediating factors and it must be taken into consideration in clinical practices when quality of life is considered as a clinical prerequisite. Early diagnosis of these psychological conditions can improve quality of life among cvd patients.

Acknowledgments

None.

Conflicts of interest

The author declares there are no conflicts of interest.

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