

PSYCHIATRIC MORBIDITY IN THE CARDIAC EMERGENCY SET-UP

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SUMMARY

This is a descriptive cross sectional study carried out in the emergency unit of the National Institute of Cardio Vascular Diseases (NICVD), Dhaka, with a view to find out the psychiatric morbidity among patients attending the cardiac emergency service. In this study 165 patients attending the cardiac emergency service of NICVD during the study period were interviewed irrespective of their age and sex. The patients who were found to be suffering from psychiatric disorders were evaluated using the DSM-IV diagnostic criteria. Cardiac diagnoses were obtained from the patients' records. As 5 had purely non cardiac general medical illness and no associated psychiatric illness, were not analysed further. Among the total number of 160 patients attending Cardiac Emergency Service 72 (45%) had exclusively psychiatric disorders (Group-A), 68(42.5 %) had purely cardiac illness (Group-B) and 20 (12.5%) were having both psychiatric & cardiac illnesses (Group-C). The results of the present study indicate a high prevalence (57.5%) of diagnosable psychiatric morbidity. The strength of this current study lies in the fact that this is the first time such a study has been carried out in Bangladesh. However this study has some limitation also. Here sample size are small and may not be representative of the whole population of the country. These needs to be keep in mind to draw the inference of the finding from the study.

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INTRODUCTION

It has been observed that a significant portion of patients attending emergency services with complaints of chest pain, present with psychiatric morbidity. In a study it was found that somatization disorder was significantly more frequent in self-referred and patients brought in by an ambulance presenting with chest pain in the emergency department¹. Non-cardiac chest pain is a common condition affecting approximately one quarter of the population during their lifetime. The impact on the quality of life in the consulters can be severe, with as many as 36% reporting much

lower quality of life level². In Bangladesh, in a study it was found that among patients admitted in cardiac unit with chest pain, 23.3% were diagnosed as having non-cardiac chest pain³. In another study it was shown that 17 to 43% of patients with non-cardiac chest pain suffer from anxiety or panic disorder⁴.

Psychiatric morbidity is also a causative factor in developing cardiac illnesses. Probably, patients with depression are more likely than patients without depression to develop Ischaemic heart disease and suffer cardiac related death⁵. In a representative study, the relation between depression and expression of inflammatory risk markers (C-reactive protein & interleukin-6) was implicated in the pathogenesis of coronary heart diseases⁶. The association between depression and increased cardiac mortality may also in part be due to an increase in platelet activity and an imbalance in sympathetic and parasympathetic activity that make patients more susceptible to ventricular fibrillation⁵.

It was found that anxiety and depression had a significant and persistent effect on physical function in patients with coronary artery disease⁷. A recent study showed that increased depressive symptoms at six months after coronary artery bypass surgery appeared to be associated with occurrence of subsequent major cardiac morbidity or mortality⁸. In other studies it was also found that depression is an independent risk factor for cardiovascular disease and causes higher morbidity and mortality rates among patients with coronary artery disease^{9, 10, 11}.

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From these observations, it can be concluded that psychiatric morbidity is an important differential diagnosis in emergency cardiac set-up; as well as a significant number from these observations, it can be concluded that psychiatric morbidity is an important of patients having both diagnoses at the same time. Moreover, psychiatric morbidity can also be a consequence of cardiac illness, which ultimately can affect the prognosis of the original illness. There are few representative studies on the prevalence of psychiatric morbidity among the patients attending medical outpatient departments of the tertiary hospitals in Bangladesh, the prevalence rate being 31% to 34%^{12, 13}. However, as far as the researcher's knowledge, no study has yet been reported on the psychiatric morbidity among the patients attending cardiac emergency services in Bangladesh. This study explores this aspect and helps to understand the extent of the psychiatric problems among this population.

MATERIALS & METHOD

This is a descriptive and cross sectional study. The study was carried out in the emergency unit of the National Institute of Cardio Vascular Diseases (NICVD), Dhaka. Study Population was Patients attended emergency department of NICVD during the study period from October 2004 to January 2005. The sample size is 165 patients who attended the cardiac emergency department of NICVD, and fulfilled the inclusion criteria, with or without consideration of cardiac morbidity, irrespective of age and sex.

Before going for the study, pre-testing was carried out to finalize the procedure and to evaluate the effectiveness of the research instruments. Necessary modifications were made in the questionnaire designed for the purpose of the study. The patients' register was the sampling frame. The patients who fulfilled the requirements for a case of the study were taken consecutively from the register.

Informed consent was taken from each patient before the inclusion as a case. Cardiac diagnoses were obtained from the patients' records kept in NICVD. Initially the

questionnaire for the study of psychiatric morbidity in the cardiac emergency set-up, which was designed by the researcher for the purpose of conducting the study, was used to get relevant data of socio-demographic variables. Then psychiatric assessment was done clinically by taking standard semi-structured history and mental state examination. The information was obtained from the patient as well as from reliable informant. All the diagnosis were phenomenological based and were assigned according to DSM-IV criteria.

Data analysis was done in this study with the help of the computer software - "Statistical Package for Social Sciences (SPSS)" for windows. Subjects were first assessed for prevalence of psychiatric cases. Afterwards, they were distributed into three groups, one for cardiac diseases, another for psychiatric disorders and another for having both cardiac and psychiatric disorder. To test the significance, chi-square (χ^2) test and student's t-test were applied where necessary. For assessing the association of variables Z test were carried out.

RESULTS

A consecutive series of one hundred and sixty five individuals attending the cardiac emergency of NICVD, who fulfilled the inclusion criteria, were interviewed. Out of these patients, 5(3%) had only non-cardiac medical illness and also not having any psychiatric disorder. These 5 were not considered for further analysis because these were not part of the objective of this study. Henceforth, the analysis was done with the remaining one hundred and sixty patients. Out of 160 patients, the number of patients with purely psychiatric disorders (Group A) was found 72 (45%), purely cardiac illnesses (Group B) was found 68 (42.5%) and those who were co-occurring with both cardiac and psychiatric illnesses (Group C) was found 20 (12.5%) [Fig. 1]. Calculating the total number of patients with psychiatric disorders from both Group A (purely psychiatric patients) and Group C i.e. patients with both co-occurring psychiatric and cardiac disease ($n=20$, 12.5%), it was found that as whole 57.5% ($n=92$) were suffered from psychiatric disorders.

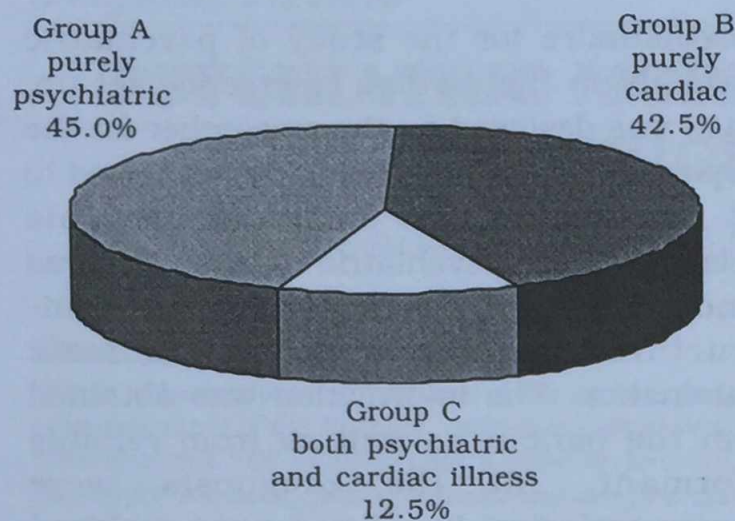


Fig.-1: Distribution of the prevalence rate (n=160).

The cases of psychiatric disorders were broadly grouped as following categories - anxiety disorders were found in most patients (n=58, 36.21% of the 160 cases followed by somatoform disorder (n=22, 13.7%) and mood disorders (n=12, 7.5%). The comparisons of these categories were made between Group A and Group C that is shown in Table I. This comparison showed that anxiety disorder and somatoform disorder were higher in number in group-A, which was highly significant ($P < 0.001^{***}$). Conversely, mood disorder was found higher in Group-C. The patients with anxiety disorders were further analysed according to the specific types anxiety disorder - Generalised Anxiety Disorder (n=10) 17.2%, Anxiety Disorder NOS (n=36) 62.1% and Panic Disorder (n=12) 20.7%. Comparison of the types of Anxiety disorder was made between Group A (purely It was found that Anxiety Disorder NOS (n=36) was 22.5% that dominated the sample followed by Panic disorder (n=12, 7.5%) and Generalised anxiety disorder (n=10, 6.3%). In patients of Anxiety Disorder NOS group, 12(7.5%) had single panic attack, but did not fulfil the DSM-IV criteria for diagnosing Panic

Disorder. In the remaining patients of Anxiety Disorder NOS, most fulfil the criteria of Generalized Anxiety Disorder except the duration of six months. In the patients of Panic Disorder most had Agoraphobia (n=8, 5.0%).

Combining patient's pure cardiac illness (n=68, 42.5%) and co-occurring cardiac and psychiatric disorder (n=20, 12.5), total cardiac patients (n=88) 55% of the sample. Among this coronary heart disease (n=72) was 81.8 % and valvular heart disease (n=16) was 18.2%.

Out of 160 patients 28 had past history of psychiatric disorder (17.5%). Here majority of the cases (n=104, 65%) were between 20-40 years of age. Next higher numbers of patients were between 51 - 60 years of age (n=20, 12.5%). Lower numbers of patients were from age 20 years and below (n=8, 5.0%). Male (n=104) were sixty five percent and female (n=56) were thirty five percent. As a whole male patients dominate the sample. Here most patients came from urban background (n=112, 70.0 %) then the rural background (n=48, 30.0%). It was found in Group A, a significant number of Patient came from urban background ($< 0.001^{***}$), which is not true in case of group B patients ($P > 0.50^{ns}$). Most patients are married in all groups. Married (n=140) was 87.5%, unmarried (n=12) was 12.5% and widow (n=8) was 5.0%. Most have education secondary and above (n=116, 72.5%), illiterate (n=16) was only 10%. In the sample, house wife (n=48), service holder (n=36) and businessman (n=36) comprises 75% of the study population. Next are retired persons (n= 16, 10%). Student (n=04) comprises only 2.5% of the sample. Most are middle-income group (n=80, 50%). Next are high-income group (n=48, 30%). Poor income group comprises least number of patients (n=32, 20.0%).

Table-I

Types of psychiatric disorders found among the study subjects.

Psychiatric Disorders	Group A		Group C		P value
	No.	(%)	No.	(%)	
Anxiety Disorder (n=58)	50	-86.2	8	-13.8	$< 0.001^{***}$
Somatoform Disorder (n=22)	20	-90.9	2	-9.1	$< 0.001^{***}$
Mood Disorder (n=12)	2	-16.7	10	-83.3	$< 0.05^*$

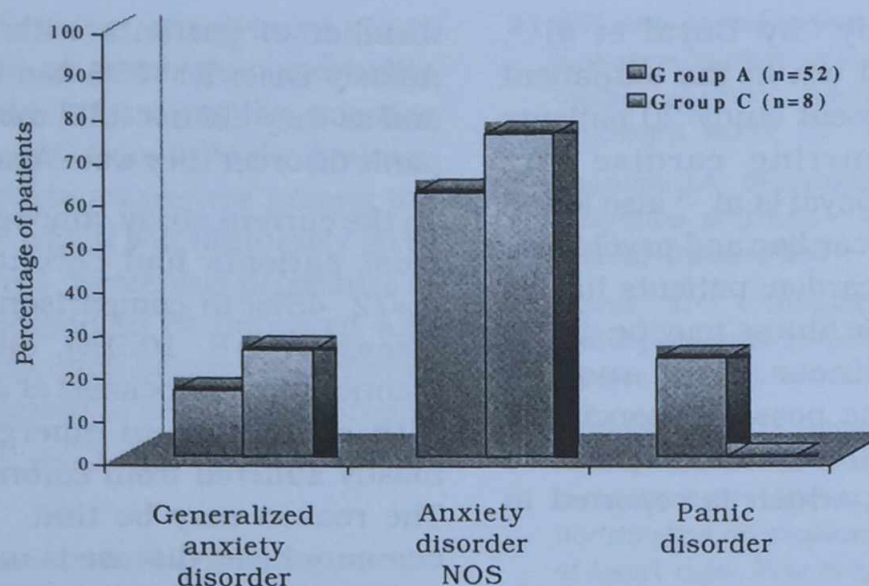


Fig.-2: Types of anxiety disorders

DISCUSSION

This is a descriptive cross-sectional study conducted in the National Institute of Cardiovascular Disease (NICVD), Dhaka. Participation rate is therefore 89.1%, which is acceptable for a valid study. Among 160 patients who attended cardiac emergency service, 72 (45%) had exclusively psychiatric disorders, 68 (42.5%) had purely cardiac illness and 20 (12.5%) were having both psychiatric & cardiac illness. As a whole, 57.5% were found to be suffering from psychiatric disorders. In comparison, we can refer to the results of a very similar study from this subcontinent that was carried out in cardiac OPD, PBM Hospital Bikaner, India, where 100 patients were selected by non-probability purposive method from cardiology OPD. On the basis of presence or absence of psychiatric morbidity, patients were divided in 3 groups. Group I comprised purely cardiac patients (n=25, 25%), group II was made up of exclusively psychiatric patients (n=21, 21%) and group III consisted of co-morbid patients who had both cardiac and psychiatric illnesses (n=54, 54%). The results of that particular study indicated a very high prevalence (75%) of diagnosable psychiatric morbidity.¹⁴

It is important to note that the prevalence of psychiatric disorder in the current study (n=92, 57.5%) is quite similar (n=75, 75%) to that of Goyal et al (2001)¹⁴. Similar findings were reported by Valkamo et al in Finland¹⁵.

Prevalence of psychiatric morbidity was less in the study by Chowdhury³, possibly due to the fact that sample was taken from the cardiac indoor patients supposedly evaluated for psychiatric disorders prior admission. Interestingly, we found opposite results in a study done by Knoackaert in Belgium¹, where cardiac diseases represented 51.7% of the cases (n=578) presenting with chest pain in the emergency department. However, in the same study, cardiac diseases were significantly less common ($p < 0.0005$) than psychiatric disorders in self-referred patients. It is well established that the anxiety and other psychiatric disorders often present with physical symptoms similar to the cardiac symptoms, e.g. palpitation, breathlessness etc. While experiencing such symptoms, most patients automatically associate these with heart disease and become fearful, therefore present themselves in the cardiac emergency department.

In the current study, more patients have purely psychiatric illness (n=72, 45.0%), than purely cardiac illnesses (n=68, 42.5%), in contrast to the study by Goyal et al¹⁴, where more patients were purely cardiac (n=25, 25%) than exclusively psychiatric patients (n=21, 21%). This difference is only marginal. Moreover, the difference of prevalence might be influenced by the different set up where the interviews took place. In this study researcher interviewed patients in the cardiac emergency department,

whereas in that study by Goyal et al¹⁴, interviews were carried out in the outpatient department. In the present study 20 patients (12.5%) had co-occurring cardiac and psychiatric disorders. Goyal et al¹⁴ also found 54% patients had both cardiac and psychiatric illness. The reason of cardiac patients having co-occurring psychiatric illness may be due to effect of chronic illness. The another explanation may be the possible association between psychiatric illness like depression with cardiac diseases, which is reported in recent studies⁵.

In our study among the psychiatric patients, anxiety disorder was most frequent (n=58, 36.2%), followed by somatoform disorder (n=22, 13.7%) and mood disorder (n=12, 7.5%) in study by Goyal et al¹⁴ most common was depression (29%) followed by panic disorder (18%). Knockaert et al¹ found somatization disorder was significantly more frequent in self-referred patients. Saddock and Saddock¹⁶ mentioned depression, anxiety, delirium and cognitive disorders are especially prevalent. In general, people in Bangladesh have little knowledge of the physical manifestations of psychiatric disorders and have tendency of somatization, so they present to the cardiac emergency department whenever they experience such physical symptoms mentioned earlier. Moreover pre-occupation with disease may also cause increase number of patients of somatoform disorder to attend cardiac emergency room. However, to confirm the validity of such an assumption requires further study.

In the current study, among the anxiety disorders most suffered from Anxiety disorder NOS (n=36, 62.5%), which is significantly more in patients with pure psychiatric disorders than co-morbid group (p<001). In contrast, Goyal et al (2001) mentioned of more panic disorders in their study. This difference of finding in more anxiety disorders, in our study, may be explained by the fact that our study mostly found coronary heart diseases among the cardiac patients, and not valvular heart diseases which are often associated with panic disorders¹⁶. Another explanation may be a significant

number of patients with the diagnosis of Anxiety Disorder NOS had single panic arrest and as they did not fulfil the DSM-IV criteria of panic disorder they were Anxiety Disorder NOS.

In the current study, among the cardiac cases, most patients had coronary heart disease (n=72, 45%) in comparison to Valvular heart disease (n=16, 10.0%), similar results also mentioned by Knockaert et al¹, where patients with chest pain in emergency department mostly suffered from coronary heart disease. The reason may be that the prevalence of coronary heart disease is more in our country as it is all over the world.

Most had absence of past psychiatric history (n=132, 81.5%) in the current study. Similar findings were mentioned by Mullick et al¹⁷ in their study of 100 patients having depression with myocardial infarction, where only 11 had a past psychiatric history. The probable explanation is that people with past psychiatric history are more likely to be diagnosed with psychiatric disorders, which may have made them realise that the physical symptoms were of psychiatric origin. This may decrease the number of patients with psychiatric history presenting in the cardiac emergency set-up.

From the result of the study, it can be stated that as a whole psychiatric morbidity is more than the cardiac morbidity among the population attending the cardiac emergency department. The researchers want to mention here that worldwide prevalence of psychiatric disorder is around 10-20%¹⁸ and recently in a countrywise unpublished epidemiological survey the prevalence of psychiatric disorders found in Bangladesh is about 16%. So the 57.5% prevalence rate of psychiatric disorder in cardiac emergency set-up in this study is significantly higher than that of the general population. The main strength of this current study lies in the fact that this is the first time such a study has been carried out in Bangladesh. However this study has several limitations. As sample size are small they can cause Type - I and Type - II error and may not be representative of the whole population of the country; therefore there are possibility of

sample biasness. However, the present study highlights the issue of psychiatric morbidity among the patients attending the cardiac emergency department. Hopefully the findings of this study will create awareness among the concerned persons, which will ultimately go in favour of the sufferers. Screening procedure of these patients is needed to be improved and combined liaison approach between psychiatry and cardiology is needed to help these patients and improve their quality of life.

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