HEART FAILURE

Co-morbid psychiatric disorders among subjects in stable state of heart failure in a West African teaching hospital

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Heart failure (HF) is an important cause of morbidity and mortality in the general hospital setting worldwide. The paucity of data on psychiatric co-morbidity in Nigeria necessitated this study. This study was carried out among adults in stable state of HF at the cardiology clinic of Lagos University Teaching Hospital (LUTH) with sex- and age-matched controls.

Fifty-eight subjects were studied, made up of 27 (46.6%) males and 31 (53.4%) females. The mean age was 51.2±13.8 years. There were 44 age- and sex-matched controls with mean age of 50.1±13.6 years. Thirty-four of the subjects (58.6%) had General Health Questionnaire (GHQ) scores of ≥2 (cut-off score); out of which 14 (24.4%) were confirmed to have psychiatric disorders. One subject with GHQ score <2 also had a psychiatric diagnosis giving a sensitivity of 0.93 and specificity of 0.54 for GHQ-12 in this study. Thus, a total of 15 (25.9%) had psychiatric diagnoses which included: depression 7 (12.0%); generalised anxiety 6 (10.3%); paranoid schizophrenia 1 (1.7%), and somatisation disorder 1 (1.7%).

It is concluded that clinically significant psychiatric co-morbidities exist among subjects with HF. The need for 'liaison' psychiatric services in the cardiology clinic is emphasised.

Introduction

A large number of studies have documented a high rate of co-occurrence of psychiatric morbidity and chronic medical conditions, such as bronchial asthma, diabetes, hypertension and heart disease.[1,2] Specifically, in heart failure (HF), psychiatric complications such as depression and anxiety are very common.[3,4] In Africa, most especially Nigeria, HF is quite common with attendant high morbidity and mortality rates.[5,6] Studies have shown that co-morbid psychiatric disorders delay recovery from HF, increasing length of hospital stay, with associated poorer prognosis and increased mortality.[7,8] Despite the importance of co-morbid psychiatric complications and HF, the paucity of studies in the country (Nigeria) necessitated this work.

Materials and methods

Study setting

The study was carried out at the cardiology clinic of Lagos University Teaching Hospital (LUTH), Idi-Araba, Lagos, the commercial capital of Nigeria. The clinic takes place on Tuesday with average patients' patronage of 70 per clinic session (both new and follow-up cases), most especially patients with hypertension and/or HF.

Subjects

Subjects aged 18 years and above, in stable state of HF and on clinic follow-up were studied over a six-month period. HF was defined by a left ventricular ejection fraction of <40% with or without accompanying clinical symptoms.[9] Necessary explanation was given on the study and consent obtained from the subjects in addition to the permission granted by the research and ethical committee of the hospital to carry out the study. Out of 62 patients who met the eligibility criteria and gave verbal consent to be included in the study, 58 (93.5%) eventually took part in the study.

Instruments

General Health Questionnaire (GHQ)

GHQ was developed by Goldberg (1972) as a screening instrument aimed at detecting psychiatric disorders in the community, in primary and post primary care settings.[10]

Table 1. Socio-demographic profile

	Subjects (%)	Controls (%)	Chi Square
Gender			
Male	27 (46.6)	20 (45.5)	χ^2=0.012,
Female	31 (53.4)	24 (54.5)	df=1,
Total	58 (100.0)	44 (100.0)	p>0.05
Marital status			
Single	7 (12.1)	17 (38.6)	χ^2=9.81,
Married	44 (75.8)	23 (52.4)	df=2,
Widowed	7 (12.1)	4 (9.0)	p>0.05
Religion			
Christianity	45 (77.6)	25 (56.8)	χ^2=7.45,
Islam	11 (19.0)	19 (43.2)	df=2,
Traditional	2 (3.4)	-	p>0.05
Education level reached			
None formal	3 (5.1)	-	χ^2=44.4,
Primary	15 (25.8)	1 (2.3)	df=3,
Secondary	20 (34.5)	19 (43.2)	p>0.05
Tertiary	20 (34.5)	24 (54.5)	-
Employment status			
Unemployed	15 (25.8)	5 (11.4)	χ^2=3.34,
Paid job/self-employed	43 (74.2)	39 (88.6)	df=1,
			p<0.05

Key: df = degree of freedom

The GHQ-12 with preserved psychometric properties of the original 60-item version was used in this study, and the cut-off score set at 2; the optimum cut-off score from previous studies.[11]

International Classification of Diseases–10th Edition (ICD–10)[12]

The diagnostic description and clinical guidelines of the ICD-10 was used to make definitive diagnoses from clinical interviews conducted by one of the authors, a consultant psychiatrist.

Rating scales

The following rating scales were used to assess the severity of psychopathologies diagnosed on the subjects:

- *Brief Psychiatric Rating Scale (BPRS)* was developed by Overall and Gorham (1962),[13] designed as an outcome measure in treatment studies of schizophrenia and also used to rate patients with very severe impairment from psychotic symptoms.
- *Hamilton Depressive Rating Scale (HDRS)* was designed by Hamilton (1960)[14] to assess severity of depression and to track changes in depressive symptoms over time in treatment.
- *Hamilton Anxiety Scale (HAM-A)* is a rating scale developed by Hamilton (1959)[15] to quantify the severity of anxiety symptomatology.

Procedure

Each of the subjects and controls was given a socio-demographic questionnaire and the GHQ-12 to complete by a research assistant (a senior registrar in cardiology). The completed questionnaires were made blind to the consultant psychiatrist (OFA) who thereafter carried out a comprehensive clinical interview and mental state examination on each of the subjects. For each of those with presence of psychiatric symptoms, the appropriate Axis-I diagnosis was made in line with the diagnostic description and clinical guidelines of ICD–10.[12]

The severity of the diagnosed psychiatric illness was rated with the appropriate rating scales.

Statistical analysis

This was performed on SPSS® for Windows® version 10.0. Frequencies and percentages

Table 2. Causes of heart failure (n=58)

Cause	Male	Female	Total	%
Dilated cardiomyopathy	14	13	27	46.6
Hypertensive heart disease	9	10	19	32.9
Rheumatic heart disease	3	2	5	8.6
Thyrotoxicosis/ hypertensive heart disease	1	1	2	3.4
Thyrotoxic heart disease	-	1	1	1.7
Valvular heart disease	-	1	1	1.7
Cor Pulmonale	-	1	1	1.7
Peripartal cardiomyopathy	-	1	1	1.7
Hypertensive heart disease/dilated cardiomyopathy	-	1	1	1.7
Total	**27**	**31**	**58**	**100.0**

Table 3. Diagnosed psychiatric illnesses

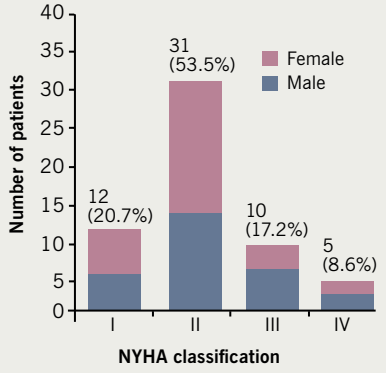
GHQ-12 scores	Subjects (%)	Controls (%)	Chi Square
<2	24 (41.4)	40 (90.9)	χ^2=26.26,
≥2	34 (58.6)	4 (9.1)	df=1,
Total	**58 (100.0)**	**44 (100.0)**	p>0.05
ICD-10 psychiatric diagnoses (subjects)		**Present**	**Absent**
GHQ score <2		1	23
GHQ score ≥2		14	20
Total		**15**	**43**

Types of ICD-10 diagnoses	Male	Female	Total	%
No diagnosis	20	23	43	74.1
Depression	4	3	7	12.2
Generalised anxiety disorder	2	4	6	10.3
Somatisation disorder	-	1	1	1.7
Paranoid schizophrenia	1	-	1	1.7

Key: df = degree of freedom; GHQ = General Health Questionnaire; ICD-10 = International Classification of Diseases, 10th edition

were calculated for discrete categorical variables and means with standard deviation for the continuous variables. Correlation analysis was also carried out between the subjects' socio-demographic variables and scores obtained on the psychometric instruments. The data obtained from the subjects and controls were compared using chi-squared test with statistical significance set at 0.05.

Figure 1. Severity of heart failure by New York Heart Association (NYHA) classification (n=58)



Results

Socio-demographic characteristics

A total of 58 subjects in stable state of HF were studied (**table 1**); made up of 27 (46.6%) males and 31 (53.4%) females. The mean age was 51.2±13.8 years with a range of 18–83 years. The majority, 44 (75.9%), were married, seven (12.1%) widowed and six (10.3%) single. Three (5.2%) had no formal education, 15 (25.9%) had only primary school education, 20 (34.5%) had secondary school certificate, and 20 (34.5%) had received tertiary education. In terms of employment, 15 (25.8%) were not actively engaged in any job (students, unemployed and retirees). The rest, 43 (74.2%), were in paid employment or self-employment.

There were 44 apparently healthy controls matched for age and sex, made up of 20 (45.5%) males and 24 (54.5%) females. The mean age was 50.1±13.6 years with a range of 15–76 years. Significant statistical differences between subjects and controls was only apparent in employment status with χ^2=3.34, degree of freedom (df) =1 at p≤0.05.

Causes and severity of HF

In nearly half (46.6%) of the patients HF was caused by dilated cardiomyopathy, followed by hypertensive heart disease (32.9%) and rheumatic heart disease (8.6%). Other causes are shown in **table 2**.

The severity of HF using the New York Heart Association (NYHA) classification shows over half (53.5%) of the subjects had class II level of severity, followed by class I (20.7%), class III (17.2%) and lastly class IV (8.6%) (**figure 1**).

Psychiatric morbidities

Thirty-four (58.6%) of the 58 subjects had a GHQ score ≥2 (the cut-off score); while four (9.1%) of the 44 controls had GHQ scores ≥2. The difference was not statistically significant (χ^2=26.26, df=1 and p>0.05).

Out of the 34 subjects with GHQ scores ≥2, 14 were confirmed (from the psychiatric interview and diagnosis with ICD-10) to have a form of psychiatric illness. Among the 24 subjects with GHQ score <2, only one was found to have psychiatric illness during further evaluation. This gives a sensitivity of 0.93 and specificity of 0.54 for the instrument (GHQ–12) in this study. Thus, overall, 15 (25.9%) out of the total 58 subjects had psychiatric illness (from both GHQ screening and ICD–10 diagnostic evaluation). The diagnoses included: depression 7 (12.2%)

with mean HDRS score of 25.8; generalised anxiety disorder (GAD) 6 (10.3%) with mean HAM-A score of 17.2; somatisation disorder 1 (1.7%); and paranoid schizophrenia 1 (1.7%) with BPRS score of 22 (**table 3**). No psychopathology was detected among the other 43 (74.1%) patients.

No significant correlation was found between GHQ scores and the socio-demographic variables of sex, marital status, education and occupation.

Discussion

The 25.9% prevalence of psychiatric morbidity in our study of subjects in stable state of HF is clinically significant. This figure is only slightly higher than that of Wells *et al.* (1998)[1] who found 24.7% of their subjects with chronic medical conditions had psychiatric complications. Our figure also fell within the range of 25–30% obtained by Barrett *et al.* (1988) and Derogatis *et al.* (1989).[16,17] When compared with local Nigerian studies, our figure is similar to that of psychiatric morbidity (15–25%) among attendees of general hospital settings with chronic medical illness,[18] and even closer to the figure (27.8%) obtained by Gureje *et al.* (1992).[19]

As a popular screening instrument, the cut-off score of 2 for the GHQ-12 used in this study is in line with Goldberg's (1972) original validity study in the UK;[10,20] and also previous studies in Nigeria.[21] The specificity and sensitivity figures obtained in this study for the GHQ are similar to previous Nigerian studies;[21,22] although the sensitivity figure in our study seemed to be moderately higher.

In our study, depression and GAD were the most common psychiatric co-morbidities among our subjects. This is in line with findings from previous studies.[1,2] In Nigeria, studies have shown a high level of hesitancy to consult psychiatrists in chronically ill patients with mental health complications;[23,24] hence, to ensure adequate care it is recommended that a 'modified' or 'mini' liaison psychiatric practice is set up in conjunction with cardiologists and even other medical specialists in the country. This would involve a psychiatrist visiting the cardiology clinic and cases requiring psychiatric evaluation could then be seen in the clinic by the psychiatrist. The arrangement would be such as to guarantee follow-up treatment of the psychiatric complication alongside that of the cardiac pathology. This integrative form of practice (though not labelled as recommended above) is already conducted in some centres in Europe and North America to overcome the stigma associated with psychiatric referrals.[2]

In conclusion, significant levels of psychiatric complications have been demonstrated among patients with chronic HF in Nigeria; and the need for special consultation-liaison psychiatry in cardiology clinics is emphasised. However, the small number of subjects is a limitation of this study. Further studies in a larger number of patients with chronic HF are required in other centres in Nigeria in order to generalise these findings in the population

Conflict of interest

None declared.

Key messages

- Heart failure is an important cause of morbidity and mortality
- Co-morbid psychiatric conditions can delay recovery resulting in a poorer prognosis and increased mortality
- Psychiatric co-morbidity was found in a quarter of heart failure patients attending a cardiology clinic in Nigeria
- A cut-off point of ≥2 on the General Health Questionnaire was sensitive for the detection of psychiatric illness
- Liaison psychiatric services should be available in cardiology clinics to encourage appropriate recognition and management of psychiatric conditions

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