ORIGINAL ARTICLE

Psychiatric morbidity in hypertensives attending a cardiology outpatient clinic in West Africa

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Abstract

Objectives: To determine kinds of psychiatric morbidity among a sample of stable hypertensive outpatients in a teaching hospital.

Materials and Methods: A cross-sectional study of 260 enrolled outpatients. Psychiatric morbidity was assessed using a 2-stage evaluation method with the General Health Questionnaire Version 12 (GHQ-12) and Structured Clinical Interview for DSM-IV (SCID) to assess for psychiatric diagnosis.

Results: 28 (10.8%) of the 260 patients endorsed some psychological distress, with a mean GHQ-12 score of ≥2. At the second stage, 16.1% (*N*=13 of 81) interviewed had one or more psychiatric disorder on the SCID. The commonest psychiatric diagnosis made were mood disorders, with current major depressive disorder occurring at a rate of 6.2%. Other disorders found were past major depressive episode (2.5%), organic mood syndrome (3.7%), and somatoform disorder (3.7%).

Conclusion: The relationship between hypertension and mood disorders should inform a higher index of suspicion among physicians and general practitioners in order to give patients appropriate treatments or referrals where necessary. It is recommended that collaboration with mental health service providers be encouraged.

Key words: African, cardiology, hypertensive, psychiatric morbidity

Date of Acceptance: 26-Apr-2011

Introduction

Under-recognition and under-treatment of psychiatric illness constitute a major problem in outpatient medical setting. Patients with cardiac conditions are at a high risk of medical and psychiatric comorbidities,[1-3] with the estimated prevalence of psychiatric disorders in primary care patients put at between 20% and 30%.[4]

Worldwide, there is an increased interest in the relationship between hypertension and depression, myocardial infarction, and heart failure.[5-7]

In Nigeria, existing studies have investigated psychiatric morbidity in general hospitals and primary care settings;[8] however, few have looked specifically at the relationship of disorders such as depression among cardiac patients.[9]

The obvious risks of these comorbidities often complicate the course of the hypertension and may further lead to increased morbidity and mortality[10-12] among sufferers, it is therefore imperative to examine the patterns of psychiatric morbidity.

In the setting of hypertension, knowledge about associated psychopathology may aid in improving early detection and paving way for more optimal patient care.

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Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/1119-3077.94105

PMID: 22437097

The aim of this study was to determine the nature of psychiatric morbidity among hypertensive patients attending the cardiology outpatient clinic of a Lagos teaching hospital.

Materials and Methods

Study procedure

The study was descriptive and cross-sectional in nature. It was conducted in a Multispecialty Teaching Hospital in Lagos, which is a mega city and the economic nerve center of Nigeria. The hospital is a referral center for many primary and secondary care providers within the state as it provides specialist care services in all areas of medicine, including cardiology. The hospital cardiology clinic runs once a week attending to approximately 70 patients per clinic. Patients present with various cardiac conditions, including hypertension, and a diagnosis of hypertension is usually confirmed based on history, physical examination, and laboratory investigations after the first few visits.

Participants

Eligibility criteria were an age range of 20–60 years, a known diagnosis of systemic hypertension, current/past use of antihypertensive agents, absence of any complication from the hypertension, and no known past history of psychiatric illness.

Eligible patients were recruited to the study every week and between 10 and 25 people were enrolled per clinic session over a period of 6 months, and a sample size of 260 was achieved at the end of this time frame.

Ethical approval to conduct the study was obtained from the hospital Ethical and Research Committee and written informed consent was obtained from all participants prior to commencement of study procedures.

Instruments

A sociodemographic questionnaire devised by the authors was administered and psychiatric morbidity was assessed using a 2-stage evaluation method. First, the General Health Questionnaire Version 12 (GHQ-12) was administered and this was followed up with a semistructured diagnostic interview (Structured Clinical Interview for DSM IV diagnosis or SCID).[13] The SCID was administered to patients with scores suggestive of psychiatric morbidity on the GHQ, namely all those with GHQ≥2 (positive scores) were interviewed. A third of the GHQ negatives were randomly selected and also interviewed with the SCID in the second stage, this was in order to correct for possible missed cases, thus improving the yield of identifying cases.

Data analysis

Data were analyzed using SPSS – version 17 statistical package. Descriptive statistics (means and frequencies) were calculated for continuous and categorical variables, respectively. While parametric and nonparametric tests, such as Pearsons Product Moment and Spearman Ranks, were used in determining correlation. Comparison of means of categorical variables was also done using the independent samples *t* test. A 95% level of confidence was used in the statistical interpretation, thus allowing for 5% sampling error.

Results

Demographic characteristics

Of the two hundred and sixty patients (260), 92 (35.4%) were males and 168 (64.6%) were females [Table 1]. The mean age of respondents was 50 ± 7.87 years, median of 52.0 years, range 27–60 years. The majority were married and in monogamous relationships. The predominant ethnic groups were the Yorubas, 145 (55.8%). Most were fairly educated, with the minimum educational level being secondary school (67.3%) [Table 1].

Psychopathology

10.8% ($N=28$) had GHQ scores ≥2, which is suggestive of psychological distress. These 28 patients along with additional randomly selected 53 patients out of those with GHQ scores of 0–1 were further evaluated with the SCID (total $N=81$).

A total of four types of psychiatric disorders were found in the sample based on the SCID and most of them were the mood disorders. Elicited disorders were namely current major depressive disorder (6.2%), past major depressive episode (2.5%), organic mood syndrome (3.7%), and somatoform disorder (3.7%) [Table 2].

A comparison of sociodemographic variables of subjects with and without psychiatric morbidity shows that a psychiatric diagnosis was prevalent among females (69.2%, $P<0.05$), those aged above 50 years (61.5%), with some degree of education (69.3%), having a diagnosis of hypertension for over 2 years (62.5%), and was on at least 2 or more drugs (61.4%, $P<0.05$).

Though at the time of interview, most of them were stable, with normal systolic and diastolic blood pressure readings at 69.2% and 46.2%, respectively [Table 3].

Using Spearmans rank tests, significant correlates of psychiatric morbidity (using SCID) were; ethnicity ($P<0.05$) and GHQ score ($P<0.05$). Both of these variables had negative correlations with having a comorbid psychiatry diagnosis on the SCID.

Discussion

Hypertensive heart disease is common in Nigeria with a prevalence of 20% in a population of 130 million people,

Table 1: Sociodemographic variables of hypertensives

Characteristics of subjects		
Variable	***N***	**%**
Age group		
21–30 years	4	1.5
31–40 years	26	10
41–50 years	87	33.5
51–60 years	143	55
Total	260	100
Sex		
Male	92	35.4
Female	168	64.6
Total	260	100
Religion		
Christain	224	86.2
Muslim	36	13.8
Total	260	100
Educational level		
No formal education	23	8.8
Primary level	62	23.8
Secondary level	78	30
Tertiary level	53	20.4
Postgraduate	44	16.9
Total	260	100
Occupation		
Unemployed	22	8.5
Civil servant	93	35.8
Business man/woman	118	45.4
Retired	1	0.4
Others	26	10
Total	260	100
Marital state		
Married	213	0.9
Single	11	4.2
Separated	5	1.9
Widower	31	11.9
Total	260	100
Type of marriage		
Unmarried/alone	25	9.6
Monogamous	195	75
Polygamous	40	15.4
Total	260	100
Ethnicity		
Yoruba	145	55.8
Igbo	84	32.3
Hausa	5	1.9
Other ethnic groups (Urobho and Calaba)	26	10
Total	260	100

with Kano having the highest rates.[14] Erhum *et al.*[15] also reported a low prevalence rate of 21% in a workplace study of hypertension amongst Nigerians.

The main findings of this study among hypertensive outpatients reflected that most of the patients were middle aged with a median age score of 52 years. The gender

Table 2: GHQ ratings and SCID psychiatric diagnoses psychological morbidity ON GHQ 12

Psychological morbidity ON GHQ 12 (*n*=260)	*n*	%
GHQ postitives	28	10.8
GHQ negatives	232	89.2
Total	260	100
SCID assessments - Stage 2 (*n*=81)		
SCID diagnosis present	16	19.75
NO SCID diagnosis present	65	80.25
Total	81	100
SCID diagnoses (*n*=81)		
Current depressive syndrome	5	6.2
Past major depressive syndrome	2	2.5
Organic mood syndrome	3	3.7
Somatisation disorder	3	3.7
SCID negatives	68	83.95
Total	81	100

GHQ = General health questionnaire, SCID = Structured Clinical Interview for DSM-IV,

distribution pattern had 92 (35.4%) males and 168 (64.6%) females and was similar to that by Bensenor[16] in Brazil. However that study had a smaller study sample size of 41 and subjects were all severe hypertensives. This may support reports that females use hospital services for follow-up care more than their male counterparts.[17]

The Yoruba (55.8%) and Igbo (32.3%) ethnic groups were in the majority. This can be explained by the location of the study being in Lagos, a Yoruba speaking city and economic capital of Nigeria.

Among these hypertensive the mean GHQ score was 0.45 (SD±1.09) with a median score of 0.45 and the overall prevalence of psychological distress on the GHQ 12 was 10.8%.

This was lower than figures gotten by Eze[8] in a general hospital setting in Benin, Nigeria, with 64.1% using GHQ 30 which is a more detailed enquiry. It was also lower than that study by WHO[4] in primary care centers which found prevalence of 27.8% of probable psychiatric morbidity. The higher figures in these studies may be attributed to the wide variety of medical disorders that may exist with psychiatric morbidity in general hospital and primary care settings; this would reflect an overall higher prevalence of psychological distress than in this index study which was specific only to cardiology patients. Among the gender groups, the presence of psychological distress was similar with 10.9% of men and 10.7% of women with GHQ +ve scores. The remaining 232 (89.2%) had no psychological distress.

At the second stage of screening, 81 of the patients progressed to being administered with the SCID, 16 (19.75%) of the 81 subjects met the criteria for a threshold SCID diagnosis, while 65 (80.25%) did not meet any diagnostic criteria.

Table 3: Psychiatric diagnosis, sociodemographics and blood pressure

Variables Total *N*=81	SCID diag. absent *n* %	SCID diag present *n* %	Total *n* %	Tests X^2 *P*
Age group				
21–30	2 (2.9)	2 (15.4)	4 (4.9)	18.568 0.000*
31–40	8 (11.7)	1 (7.6)	9 (11.1)	
41–50	24 (35.2)	2 (15.4)	26 (32.1)	
51–60	24 (35-2)	8 (61.5)	32 (39.5)	
Gender				
Male	21 (30.8)	4 (30.8)	25 (30.9)	0.127 0.721
Female	47 (69.1)	9 (69.2)	56 (69.1)	
Religion				
Christian	57 (83.8)	12 (92.3)	69 (85.2)	0.434 0.510
Muslim	11 (16.2)	1 (7.7)	12 (14.8)	
Education				
No formal education	5 (7.4)	0 (0)	5 (6.2)	
Primary level	16 (23.5)	4 (30.8)	20 (24.7)	5.998 0.199
Secondary level	23 (33.8)	4 (30.8)	27 (33.3)	
Tertiary level	13 (19.1)	5 (38.5)	18 (22.2)	
Postgrad	11 (16.2)	0 (0)	11 (13.6)	
Occupation				
Unemployed	5 (7.4)	1 (7.6)	6 (7.4)	9.091 0.059
Civil servant	27 (39.7)	6 (46.2)	33 (40.7)	
Business	25 (36.2)	2 (15.4)	27 (33.3)	
Man/woman				
Retired	0 (-)	0 (0)	0 (0)	
Others	11 (16.2)	4 (30.8)	15 (18.5)	
Duration of hypertension				
0–6 months	42 (17.2)	1 (6.3)	43 (16.5)	
7–12 months	12 (4.9)	1 (6.3)	13 (5.0)	2.118 0.740
13–24 months	43 (17.4)	4 (25.0)	47 (18.1)	
More than 24 months	150 (60.7)	7 (62.5)	154 (60.4)	
Total number of drugs				
Non currently	8 (3.2)	0 -	8 (3.1)	
1 Drug	34 (13.7)	5 (38.5)	39 (15.0)	12.862 0.025*
2 Drugs	89 (36.0)	7 (53.8)	96 (36.9)	
3 Drugs	78 (31.6)	1 (7.6)	79 (30.4)	
4 Drugs	32 (12.9	0 -	32 (12.3)	
5 Drugs	6 (2.4)	0 -	6 (2.3)	
GHQ group				
0 and 1 (normal GHQ)	8 (61.5)	19 (27.9)	27 (33.3)	75.156 0.000*
2 and above (psych distress)	5 (38.5)	49 (72.1)	54 (66.6)	
Total	13 (100.0)	49 (72.1)	81 (100)	

SCID = Structured clinical interview for DSM-IV; GFQ = General health questionnaire

The younger hypertensives seemed more likely to have psychiatric diagnosis and the age distribution was statistically significant (χ^2=33.511, DF=1, *P*=0.000). A larger study should clarify this further.

The diagnosis made were mostly mood disorders (4.3%). The other disorders were current depressive illness, uncomplicated bereavement, past major depressive episode, organic mood syndrome, and somatisation disorder. The fact that majority of the diagnosis made were mood disorders is similar to the study by Benensor *et al.*[16] in Brazil; however, it is note worthy that though Benensor studied only patients with severe hypertension, this study recruited known hypertensive subjects whose blood pressure happened to be either within normal range or at stage I hypertension at the time of the study. Overall, these 16 made up 6.15% psychiatric morbidity among the 260 subjects. Other epidemiological studies on psychiatric morbidity among primary care patients in Nigeria found 21.3%[18] and 27.8%,[19] both studies also had a 2-stage study design using GHQ 12 along with PSE and CIDI, respectively. This comparatively low percentage here is explained by the fact that the exclusion criteria in the study removed all known psychiatric patients and those with positive family history of mental illness. Thus, already reducing the number of subjects that will be eventually picked. In addition, the population of interest here, i.e., hypertensives, is only a subset of the primary care subjects in these other studies hence the lower prevalence of psychiatric morbidity.

A sensitivity of 69.2% and a specificity of 69.1% were found for the GHQ as a screening instrument of psychiatric morbidity in this population group. This finding is similar to that of Gureje[19] and Abiodun.[18]

Most of the subjects with psychiatric morbidity were on at least 2–3 different medications, this is often the pattern of prescription in many cardiology clinics.[14] Diuretics were the most prescribed as found also in the study by Adigun *et al.*[20] among hypertensives in tertiary hospitals in Nigeria. A few studies have shown that sodium retention plays a central role in the development of obesity-related hypertension, which is also common among the black race.[21] Therefore, treatment with an ACE-inhibitor or a diuretic is usually considered as first-line antihypertensive drug therapy in obesity - hypertension.

The presence of psychiatric diagnosis correlated significantly with ethnicity ($P<0.05$) among all the sociodemographic variables, this finding is expected as most of the respondents were from the Yoruba tribe which is the predominant tribe in the study location. The presence of a psychiatric diagnosis showed no significant correlations with the blood pressure severity, type of drug used nor any of the drugs in use, but there was a significant negative correlation with GHQ scores (at $P<0.05$).

All these differ from the general notion that drugs and blood pressure may be causative to psychiatric morbidity, which is still hard to establish especially without a longitudinal case control study in place.

The findings were also similar to that of Bensenor,[16] who found other factors such as systolic and diastolic blood pressure, not to show any association with the psychiatric disturbance. This is also corroborated by the meta analytic study on by Dennis *et al.*,[22] which reported that the conventional assumption that beta blocker therapy is associated with depression is not supported by data and that there is no significant risk of depressive symptoms.

A cause effect relationship of psychiatric morbidity and hypertension is not established from this study, a larger case control study will be put in place in order to explore this in more detail.

Limitations of the study include the finding that most patients had commenced use of antihypertensive medication and were mostly on polytherapy before recruitment to the study, and so the role of specific drug groups or that of hypertension in the onset of psychiatric morbidity cannot be clearly defined. Future longitudinal studies will be useful in clarifying this for these groups of patients.

Conclusion

This study will serve usefully in the understanding the possible comorbidity states between hypertension and emotional disorders in this environment. The study finds that younger hypertensives and those on multiple antihypertensive agents are more at risk of psychiatric morbidity. Monotherapy and the use consultation-liason psychiatry services in cardiology clinics are encouraged. Larger and locally based case control studies are recommended.

Acknowledgment

The authors are grateful to all the patients that participated in the study, for their patience and cooperation during the period of data collection.

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How to cite this article: Oshodi YO, Adeyemi JD, Oke DA, Seedat S. Psychiatric morbidity in hypertensives attending a cardiology outpatient clinic in West Africa. Niger J Clin Pract 2012;15:84-8.
Source of Support: Nil, **Conflict of Interest:** None declared.