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Psychiatric morbidity among adult patients at the medical and surgical emergency departments of a Nigerian teaching hospital

***Mohammed T.A., Abiodun O.A., Yussuf A.D.., Sulyman D**

Abstract

Objective: The study was conducted to determine the prevalence and pattern of psychiatric morbidity in patients seen at a Nigerian Tertiary Hospital's medical and surgical emergency department.

Method: A two-stage cross-sectional descriptive study used a systematic sampling of all consenting patients admitted into the medical and surgical emergency. Six hundred and three patients who met the inclusion criteria and completed a socio-demographic questionnaire and the General Health Questionnaire 12 (GHQ-12) were analyzed. Patients who met the cut-off score of 3 or more on the GHQ-12 and a 20% random sample with GHQ-12 score <3 were further subjected to a definite diagnostic assessment using the Mini International Neuropsychiatry Interview and were diagnosed according to the 10th version of the International Classification of Diseases (ICD-10) criteria.

Result: The mean age of respondents was 45±19 years, 63.3% were males, and 71.8% were married. Patients at the medical emergency constituted 53.2%. The weighted prevalence of psychiatric morbidity among medical emergency patients was 21.5% and 17.4% for patients at the surgical emergency. Depressive disorder was the commonest in both wards.

Conclusion: Some patients presenting to medical and surgical emergencies have co-existing psychiatric disorders. Conscious efforts should be made to recognize psychiatric disorders among patients with physical illnesses, improving their quality of care and contributing to better outcomes.

Keywords: psychiatric morbidity, depression, weighted prevalence, medical emergency, surgical emergency

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Morbidité psychiatrique chez les patients adultes des services d'urgence médicale et chirurgicale d'un hôpital universitaire Nigérian

***Mohammed T.A., Abiodun O.A., Yussuf A.D.., Sulyman D**

Résumé

Objectif de l'étude: L'étude a été menée pour déterminer la prévalence et le schéma de la morbidité psychiatrique chez les patients vus au service d'urgence médicale et chirurgicale d'un hôpital tertiaire nigérian.

Méthode de l'étude : Une étude descriptive transversale en deux temps a utilisé un échantillonnage systématique de tous les patients consentants admis aux urgences médico-chirurgicales. Six cent trois patients répondant aux critères d'inclusion et ayant rempli un questionnaire sociodémographique et le Questionnaire 12 (GHQ-12) a été analysés. Les patients qui ont atteint le score seuil de 3 ou plus sur le GHQ-12 et un échantillon aléatoire de 20% avec un score GHQ-12 <3 ont ensuite été soumis à une évaluation diagnostique définitive à l'aide du Mini International Neuropsychiatry Interview et ont été diagnostiqués selon le 10 ᵉ version des critères de la Classification internationale des maladies (CIM-10).

Résultat de l'étude: L'âge moyen des répondants était de 45 ± 19 ans, 63,3 % étaient des hommes et 71,8 % étaient mariés. Les patients à l'urgence médicale constituaient 53,2 %. La prévalence pondérée de la morbidité psychiatrique chez les patients aux urgences médicales était de 21,5 % et de 17,4 % pour les patients aux urgences chirurgicales. Le trouble dépressif était le plus fréquent dans les deux services.

Conclusion : Certains patients se présentant aux urgences médicales et chirurgicales ont des troubles psychiatriques coexistasse. Des efforts conscients doivent être déployés pour reconnaître les troubles psychiatriques chez les patients atteints de maladies physiques, améliorer la qualité de leurs soins et contribuer à de meilleurs résultats.

Mots-clés: Morbidité psychiatrique, dépression, prévalence pondérée, urgence médicale, urgence chirurgicale

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INTRODUCTION

Emergency service is an essential component of and is the gateway to different departments of a hospital facility1. It provides an important first point of call for patients coming into the hospital with health conditions that require immediate attention2. Both medical and surgical conditions may present to the Accident and Emergency (A&E) Department of any hospital, whose principal purpose is to provide timely care to these patients, reducing morbidity and mortality in them3. Medical emergencies are conditions that present with symptoms of sufficient severity requiring immediate medical attention4. Common medical emergencies include cardiac and circulatory conditions, metabolic conditions, cerebrovascular accidents, infectious conditions, and respiratory conditions5. Conditions that present to the surgical emergency, on the other hand, include trauma such as fractures, burns, chest and abdominal injuries, bowel obstruction, acute appendicitis, among others6.

Medical illnesses presenting to the emergency can produce acute psychiatric manifestations or mimic specific psychiatric disorders, constituting up to 10% of all psychiatric presentations7. For example, respiratory diseases such as asthma and chronic obstructive pulmonary disease have also been associated with depression and anxiety disorders, particularly panic attacks8. Surgical emergencies such as severe burns and traumatic injuries are also associated with psychiatric morbidities9. Symptoms of acute stress disorder (ASD) have been found in 11-32% of adult burn injury survivors in the emergency setting10. Traumatic brain injury (TBI) has also been significantly associated with psychiatric morbidity, with 43% of those having TBI having at least one psychiatric diagnosis compared to 20% in those without a history of TBI11. Depression, anxiety symptoms, personality changes, aggressive behaviour, and psychotic symptoms are common symptoms found in these patients12.

The co-existence of physical and psychiatric morbidity negatively impacts the course and outcome of both conditions. Therefore, it is of utmost importance that medical officers at the emergency units can detect psychiatric complications of medical/surgical emergencies. Failure to do so has been associated with increased morbidity, decreased quality of life, more extended hospital stay, increased costs of care, and ultimately, increased mortality13, 14, while early detection will ensure prompt treatment and better outcomes for the patients15.

MATERIALS AND METHODS

Study design

The study is a descriptive cross-sectional hospital-based study.

Study Location

The study took place at the Adult Emergency Department of the University of Ilorin Teaching Hospital (UITH), Ilorin, Kwara State, Nigeria; this department has dedicated medical and surgical units where related emergency cases are attended to.

Study Population

It consisted of all the patients with medical and surgical emergencies seen at the adult emergency department of the hospital who gave their consent and satisfied the inclusion criteria.

Inclusion Criteria

1. All consenting patients aged 18 years and above.

Exclusion Criteria

1. Patients who refused to give consent.
2. Patients who were too physically ill to complete the questionnaires

Ethics: This research was carried out with ethical conformity according to the Helsinki Declaration (1975) as amended. Ethical clearance was obtained from the University of Ilorin Teaching Hospital Ethical Review Committee. Written informed consent was also obtained from all participants.

Sampling Technique

Patients presenting to the medical and surgical emergency who met the inclusion criteria were recruited through a systematic random sampling technique. Sample size of 600 was divided proportionately between the medical and surgical emergency units based on number of cases seen by each unit over twelve months. Numerator was number of patients seen by each emergency unit over twelve months while denominator was total number of patients seen in both emergency units over a period of twelve months. Thus, the medical emergency unit with a total number of 1,720 patients seen over a year was allocated 319 participants while the surgical emergency unit with a total of 1,520 patients seen over one year period was allocated 281 participants. For the medical emergency, the sampling frame was determined by the estimated number of 860 patients seen over six months and the sampling interval was determined by the

sampling frame divided by estimated minimum sample size of 319 for the unit. The first patient was selected randomly and thereafter, every third (3rd) patient was selected until the required sample size for that unit was reached. For the surgical emergency, the sampling frame was determined by the estimated number of 760 patients seen over six months and the sampling interval was determined by the sampling frame divided by estimated minimum sample size of 281 for the unit. The first patient was selected randomly and thereafter, every third (3rd) patient was selected until the required sample size for that unit was reached.

Instruments

Data collection was done using the following instruments.

1. **Pro Forma Questionnaire**: A socio-demographic questionnaire was designed by the researcher to assess the socio-demographic data and clinical history of the patients, e.g., age, sex, educational status, number of previous emergency contacts, previous outpatient contacts, previous admissions without emergency contact, and history of previous psychiatric illness, among others.
2. **General Health Questionnaire (GHQ-12):** It is a self-administered screening instrument to detect individuals with a diagnosable psychiatric disorder16.It is helpful in settings where patients need help to complete the questionnaire17. Its use has been validated in Nigeria by Gureje18, in a hospital setting who recommended a cut-off of 2 and Abiodun19, also in a hospital setting, who recommended a cut-off of 3. Abiodun reported a sensitivity of 83.7% and specificity of 79.8%, with a misclassification rate of 19.4%. In this study, a cut-off score of 3 was used.
3. **The Mini-International Neuropsychiatric Interview:** A widely used psychiatry structured diagnostic interview instrument. It helps to generate positive diagnoses for the major Axis I psychiatric disorders. The researcher conducted the second stage MINI interview, blinded to the GHQ-12 scores of participants sent to her for interview by the trained research assistants.

Data Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 18. Frequency distribution of variables was carried out, and frequency tables were generated. Statistical weighting was done to know the true prevalence of psychiatric morbidity in this study as recommended for a two-phase epidemiological study20. Those with GHQ <3 who eventually had a specific psychiatric diagnosis had a greater weight value than those who had GHQ > 3 in stage 1 and also had a psychiatric diagnosis in stage 2. Cross tabulation and chi-square statistics were used to evaluate the relationship between variables. Where necessary, logistic regression analysis was also used to determine the predictors of psychiatric morbidity. A statistically significant level of less than or equal to 0.05 was used (i.e. $p \leq 0.05$) to know variables with statistical significance in this study.

RESULTS

Six hundred twenty-eight respondents met the inclusion criteria and were recruited for the study. However, twelve respondents (1.9%) died, and 7 (1.1%) were discharged before the questionnaires were administered. Thus, 609 respondents participated in this study which gave a response rate of 97%. Six respondents gave incomplete information and were discarded, leaving 603 questionnaires available for the final analysis.

The pattern of Psychiatric Disorders and Weighted Prevalence in Medical and Surgical Emergencies

Depression constituted 6.9% of those from a medical emergency and 3.9% from a surgical emergency. Those with Generalized anxiety disorder made up 3.4% of respondents from the medical emergency compared to 1.8% of respondents from surgical emergency. None of the respondents from the surgical emergency had psychosis compared to 2.5% of those from a medical emergency.

More than half, 23 (51.1%) of respondents with psychiatric morbidity were less than or equal to 40 years of age. The relationship between age group and psychiatric morbidity was statistically significant (χ^2 = 10.300, p=0.006). More than half (51.1%) of those with psychiatric morbidity were females (χ^2 = 0.297, p=0.586). Also, a significantly higher percentage (73.3%) of those with psychiatric morbidity were employed as compared to about half (52.2%) of

those without psychiatric morbidity (χ^2 = 7.003, p=0.008).

Among the respondents with psychiatric morbidity, more than half (51.1%) had 1-2 previous emergency contacts in the last year compared to respondents without psychiatric morbidity, in whom the majority (76.4%) had no previous emergency contacts. The relationship between previous emergency contact(s) and psychiatric morbidity was statistically significant (χ^2 = 19.699, p<0.001).

Three (6.7%) of the four respondents with a previous history of psychiatric illness who were also currently receiving treatment for the psychiatric illness had a psychiatric diagnosis. The relationship between the previous history of psychiatric illness and psychiatric morbidity was statistically significant (χ^2 = 7.898, p=0.005).

A higher percentage (89.7%) of those with psychiatric morbidity compared to those with no psychiatric morbidity (60.5%) were employed (χ^2=9.556, p=0.002).

Analysis of clinical variables and psychiatric morbidity in the surgical emergency revealed that about a third (31.0%) of respondents with psychiatric morbidity in the surgical emergency had greater than four previous outpatients contact in the last year as compared to those with no psychiatric morbidity (4.0%) (χ^2=27.927 p<0.001).

DISCUSSION

An overall prevalence of 19.6% psychiatric morbidity found among respondents in both the medical and surgical emergencies was similar to the 20% prevalence reported by Bell et al. 21, in an accident and emergency ward of a general hospital. Other similar studies have reported a higher prevalence 22, 23. For instance, El-Akabawy et al.23, in a two-staged study involving two hundred and fifty patients attending the Emergency Department in Ismailia General Hospital in Egypt, reported a prevalence of 35.2%. The difference in prevalence may be attributable to a difference in sample size. Salkovskis et al.22, among the one hundred and forty patients studied, reported a prevalence of 26.5%. The higher prevalence could be due to methodological differences as the authors used only screening instruments.

The weighted prevalence of psychiatric disorders in the medical emergency was 21.5%. This reported prevalence is lower than the findings of Seltzer24, who reported a prevalence of 27% (not weighted) of the 100 respondents studied in a similar setting. The prevalence of 17.4% in the surgical emergency is also lower than that reported by Mohammed et al.25 and Abiodun et al.26, among surgical inpatients. The difference might be because our study was carried out among patients at the emergency wards while the other studies were carried out among patients in the wards who might have chronic illnesses with proven association with psychiatric disorders.

Studies of psychiatric morbidity in medical and surgical wards have consistently reported a higher prevalence in medical wards than surgical wards, which may be due to a higher rate of infections and other chronic medical conditions compared to surgical wards and may be reflective of findings in this study as an admission of patients into the wards is most times via the emergency. It is, however, contrary to the study by Nair27, who reported a higher prevalence in the surgical ward.

Depression was the commonest psychiatric disorder found in medical (6.9%) and surgical (3.9%) emergencies, followed by generalized anxiety disorder (3.4%) in a medical emergency and Post-traumatic stress disorder (2.1%) in a surgical emergency. Studies have shown that people with physical health conditions experience depression and anxiety at a rate twice the general population28; this can occur in these patients because of feelings of frustration, despair and uncertainty associated with a chronic illness.

Depression is the commonest psychiatric diagnosis in both emergency units, keeping with results obtained from other studies in similar settings29. The prevalence of depression in this study is lower than that reported by Bell et al.29, who reported 29.8%. This difference may perhaps be because mental illness is still highly stigmatized in this part of the world, and people may be unwilling to disclose their symptoms so as not to be discriminated against or viewed as being mentally ill or weak30. Alcohol abuse and alcohol dependence had the lowest prevalences in both emergencies. The prevalence of alcohol dependence in the surgical emergency was 1.1%, while that of alcohol abuse was 1.4%. In the medical emergency, the prevalence of alcohol dependence was 0.6%. Studies have estimated that between 0.6–40% of all emergency department visits are due to an alcohol-related problem31. Although the current findings conform to previous estimates, the low prevalence found in this study could be because religious wise, alcohol use is considered immoral, particularly among Muslims, who

constituted a large percentage of the respondents in this study population.

The following factors were significantly associated with psychiatric morbidity in medical and surgical emergencies: age, level of education, and employment status. While most respondents with psychiatric morbidity in the medical emergency were less than 40 years, most respondents with psychiatric morbidity in the surgical emergency were older than 60 years. This study also showed that respondents with psychiatric morbidity in medical and surgical emergencies were not educated beyond the secondary school level. This probably may also be because of the documented association between low levels of education and psychiatric morbidity. A systematic review of depression after stroke in sub-Saharan Africa reported that psychiatric morbidity was significantly associated with low education, this may be because there is an association between poverty indicators and the risk of mental disorders; the most consistent association is with low levels of education32. Individuals with low educational attainment may have poorly paying jobs and have very low financial prowess, which is a stressor, especially in Nigeria where treatment of medical or surgical illness is mainly out of pocket.

Similarly, a higher proportion of individuals with psychiatric morbidity in this study was also employed. Perhaps this may be due to the stress of work or workload, conduciveness of workplace, and job insecurity. Strong associations have been documented to exist between self-reported job insecurity and both poor self-rated health and minor psychiatric morbidity.

Those who had no previous contact and those with one to two previous emergency contacts were found to have more psychiatric morbidity among respondents at the surgical emergency than those with three or more previous visits to the emergency in this study. This is, in contrast, to the report by Williams et al.33, who found that frequent attenders to the emergency department had more psychiatric morbidity. The fear of the seriousness of the illness warranting emergency visits in those with no previous contact or the previous experiences those with one or two previous contacts may have had at the emergency, like witnessing a patient die, may perhaps account for this.

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Conflict of Interest: We declare no conflict of interest in carrying out this work.

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Table 1: Comparison between socio-demographic characteristics of respondents at the surgical and medical emergencies.

Variable	Surgical n (%)	Medical n (%)	Total n (%)	χ^2	*p*-value
Age-group (years)					
= 40	141 (50.0)	143 (44.5)	284 (47.1)	7.684	**0.021***
41 – 60	72 (25.5)	115 (35.8)	187 (31.0)		
> 60	69 (24.5)	63 (19.6)	132 (21.9)		
Age (years)					
Mean ± SD	44.09 ± 17.83	46.47 ± 19.00		-1.575[t]	0.116
Gender					
Male	216 (76.6)	169 (52.6)	385 (63.8)	37.298	**<0.001***
Female	66 (23.4)	152 (47.4)	218 (36.2)		
Religion					
Christianity	99 (35.1)	125 (38.9)	224 (37.1)	0.945	0.331
Islam	183 (64.9)	196 (61.1)	379 (62.9)		
Marital Status					
Single	61 (21.6)	86 (26.8)	147 (24.4)	25.021	**<0.001***
Married	221 (78.4)	212 (66.0)	433 (71.8)		
Separated/Divorced/ Widowed	0 (0.0)	23 (7.2)	23 (3.8)		
Education					
No formal education	57 (20.2)	77 (24.0)	134 (22.2)	2.935	0.402
Primary	41 (14.5)	56 (17.4)	97 (16.1)		
Secondary	90 (31.9)	95 (29.6)	185 (30.7)		
Tertiary	94 (33.3)	93 (29.0)	187 (31.0)		
Employment status					
Employed	179 (63.5)	177 (55.1)	356 (59.0)	4.313	**0.038***
Unemployed	103 (36.5)	144 (44.9)	247 (41.0)		
Ethnic group					
Yoruba	229 (81.2)	292 (91.0)	521 (86.4)	16.988	**0.001***
Hausa	15 (5.3)	2 (0.6)	17 (2.8)		
Igbo	9 (3.2	6 (1.9)	15 (2.5)		
Others	29 (10.3)	21 (6.5)	50 (8.3)		

χ2: Chi-square test, Y: Yates corrected, t: t-test *: *p*-value = 0.05 (statistically significant)

Table 2: Comparison between clinical variables of respondents at the surgical and medical emergencies.

Variable	Surgical n (%)	Medical n (%)	Total N (%)	χ^2	*p*-value
Previous Emergency Contact					
None	227 (80.5)	231 (72.0)	458 (76.0)	8.550	**0.014***
1 – 2	45 (16.0)	82 (25.5)	127 (21.1)		
3 – 4	10 (3.5)	8 (2.5)	18 (3.0)		
Previous Outpatient Contact					
None	221 (78.4)	230 (71.7)	451 (74.8)	5.796	0.122
1 – 2	24 (8.5)	45 (14.0)	69 (11.4)		
3 – 4	18 (6.4)	18 (5.6)	36 (6.0)		
> 4	19 (6.7)	28 (8.7)	47 (7.8)		
Previous hospital admission					
None	201 (71.3)	276 (86.0)	477 (79.1)	20.483	**<0.001***
1 – 2	69 (24.5)	41 (12.8)	110 (18.2)		
3 – 4	12 (4.3)	4 (1.2)	16 (2.7)		
History of psychiatric illness and currently receiving treatment					
Yes	0 (0.0)	4 (1.2)	4 (0.7)	1.899[Y]	0.168
No	282 (100.0)	317 (98.8)	599 (99.3)		

χ2: Chi-square test, Y: Yates corrected, *: *p*-value = 0.05 (statistically significant)

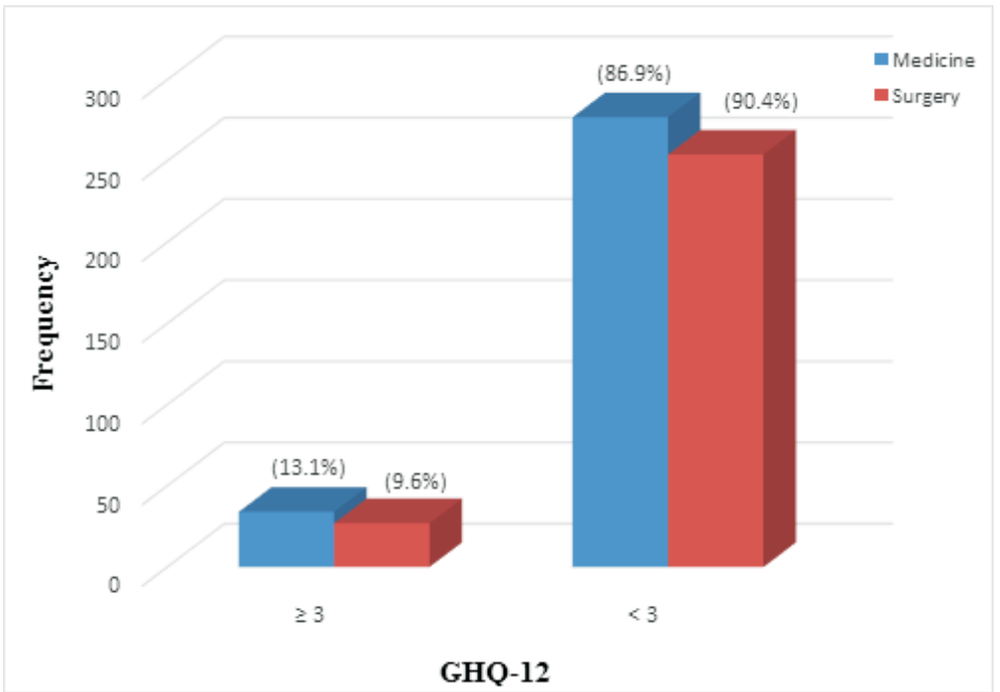

Figure 1: Respondents with probable psychiatric morbidity in surgical and medical emergencies.

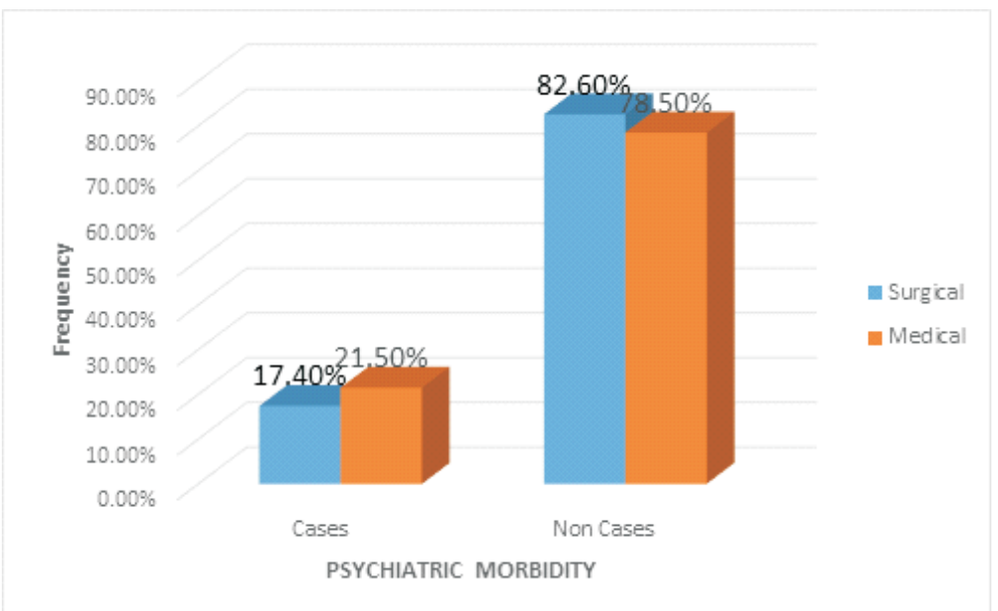

Figure 2: Weighted prevalence of psychiatric morbidity in respondents who had mini interview.