ORIGINAL ARTICLE

Rates of Physical Illness in Patients with Mental Disorders seen at Nnewi, Nigeria

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ABSTRACT

Background: In many cultures and countries, mental and physical disorders have been found to occur concurrently with more than mere chance phenomena. Such co-morbidity increases poor outcome for both disorders and results in high mortality and health care costs. Studies in Nigeria along this line seem scanty.
Objective: To describe the rates of physical illness in patients with mental disorders in a tertiary health care institution in Eastern Nigeria.
Methodology: All first ever referrals to the Mental Health Unit of Nnamdi Azikiwe University Teaching Hospital, Nnewi within one year were recruited. A full and standard structured mental state and physical examination was objectively done for each participant. Necessary ancillary laboratory investigations were done. After three months (for outpatients) or following discharge (for in patients), the physical examinations were repeated. The medical records were checked a year later for service drop out and mortality.
Results: Of the 413 participants, aged 15 to 74 years, mean age, 37.2±8.2 SD years, 205 males (49.6%), 43% had at least one physical disease at objective examination, of which only 14% was known prior to the referral. The major physical diseases were: cardiovascular (15.1%), Diabetes mellitus (5.4%), gastrointestinal diseases (1.5%). Only 2 (0.5%) of the patients had obesity at presentation but this sharply increased after 3 months to almost 13%.
Conclusion: Cardiovascular, endocrine (metabolic) and other physical diseases commonly occur in patients with mental disorders, especially mood and psychotic disorders, with a low rate of detection before full assessment.

Keywords: *Bipolar, co-morbidity, depression, disorders, Nigeria, schizophrenia-spectrum*

INTRODUCTION

The World Federation of Mental Health argues that physical and mental health disorders often go hand-in-gloves. Persons with severe or chronic physical illnesses often have a co-existing mental health problem and, persons with severe mental disorders have physical health problems that remain undetected or untreated.[1] This co-occurrence of mental

disorders and chronic physical conditions is greater than chance likelihood.[2]

Many studies have shown that people with severe mental disorders have an excess mortality, being two or three times as high as that in the general population.[3,4] A recent review shows that the mortality gap between persons with mental disorders in comparison with the general population translates to a 13-30 year shortened life expectancy in those patients with mental disorders even in countries where the quality of the health care system is generally acknowledged to be good.[5] The same review indicates that about two thirds of excess mortality in persons with severe mental disorders is due to physical illness.[5]

The excess mortality occurs in patients with all forms of severe mental disorders and may be accounted for by suicide.[6,7,8,9,10,11] Other workers contend that most mental disorders are associated with high physical mortality, besides suicide.[12,13,14] A number of studies consistently confirm that patients with depression or bipolar disorders have elevated odds of physical diseases compared to the general population.[15, 16,17]

A Singaporean study of over 6000 adults in the general population reported a lifetime prevalence of mental disorders to be 12.0%, and chronic medical disorders 42.6% with comorbid mental and medical disorders occurring in 6.1%.[18] The prevalence of any physical disorder in this population was 42.6%. Among those with chronic physical disorders, 14.3% also had a mental disorder, and among those with mental disorders, more than half (50.6%) had a medical disorder.

It is has been suggested that comorbidity between medical and mental conditions is the rule rather than the exception. In the 2001–2003 National Comorbidity Survey Replication (NCS-R), a nationally representative epidemiological survey in the USA, Kessler, *et al* found that more than 68% of adults with a mental disorder reported having at least one general medical disorder, and 29% of those with a medical disorder had a comorbid mental health condition.[19]

In Malawi, Mafuta reported a 48.6% prevalence of comorbid physical illness with mental disorders, with 32.9% being undiagnosed.[20] Using self report to estimate physical illness in refuges and natives in a local community in Western Nigeria, Akinyemi, *et al* reported that physical illness tripled the risk of any mental disorder in the study population.[21]

In the World Mental Health Survey, Demyttenaere, *et al* reported that between 10% and 42% of the participants had chronic back/neck pain in the previous 12 months.[22] There was a very strong association between mental disorders and back/neck pain which was consistent across both developed and developing country sites of the study. Along the same line, Gureje, in the Nigerian Survey of Mental Health and Well Being, investigated the comorbidity of anxiety disorders with pain and suggested a reverse causal link and shared risk factors, including distal events occurring in childhood.[23]

The phenomenon of mental-physical comorbidity has important clinical implications.[21,22,23] Apart from increased morbidity and mortality there is a greater-than-additive association with disability.[24,25] The impact of having comorbid conditions is at least additive and at times may be synergistic, with the cumulative burden greater than the sum of the individual conditions.[24,25] Detection of both the mental or physical disorder when they co-occur is more difficult and treatment may be complicated, with elevated symptom burden, functional impairment, decreased length and quality of life, and increased costs.[26,27,28,29]

Clinicians need to accord both mental and physical conditions equal priority, in order for comorbidity to be adequately managed and disability reduced.

Most of the reports of mental-physical co-morbidity have been based on clinical records. Record keeping in developing countries such as Nigeria is not well organized and there is a lack of efficiency in and capacity for maintaining databases in computerized format. Again physical illnesses in mental disorders can only be documented if they have been recognized by the attending psychiatrists. Besides, most of the physical illnesses reported among patients with mental disorders in the literature were based on patients' self reports, which may not necessarily match objective clinical examination. There are only few comparative studies of physical illnesses in mental disorders across cultures including Nigeria.[23]

The major aim of the present study was to describe the co-occurrence of diabetes mellitus, cardiovascular diseases, obesity and other physical diseases among patients with mental disorders in a psychiatric unit of a general/teaching hospital in Eastern Nigeria.

METHODOLOGY

Sample: A total of 413 patients aged 15-74years, mean age 37.2years±8.2 SD, 205 (49.6%) males were recruited from the Mental Health clinic of Nnamdi Azikiwe University Teaching Hospital Nnewi (Eastern Nigeria). They were first-ever referrals to the outpatient clinic (some of whom were later admitted to the wards from the clinics).

Hospital: The hospital is a 750–bed tertiary health institution of the Nigerian Federal Government. It serves as a teaching, research and health care service centre mainly for the over 4million inhabitants of Anambra State, with others from the neighbouring states of Enugu, Imo and Delta.

Assessment Procedures: Clinical assessment, supplemented with the Present State Examination (PSE) and International Guidelines for Diagnosis and Assessment was done for all the patients.[30,31] Patient's medical history was obtained in a face-to-face interview, and coded into a physical illness proforma which contains a checklist of medical and systemic diseases. The mental state examination was conducted. The pathways taken before encounter with mental health service at the study site were documented (for example traditional healing homes, spiritual guide, patent medicine store, etc.) A full general and systemic physical examination was done.

For each patient, the height (in meters) and weight (in kilogram) were obtained. The clinical presentation dictated the number and type of ancillary laboratory/radiological investigations. One of us (RU) had participated in a training offered by a physician on the basic information and investigations needed to make medical diseases diagnosis. Patients who needed further assessments were referred to the appropriate clinicians.

For most patients, basic haematological indices (haemoglobin, packed cell volume, total/differential blood count, erythrocyte sedimentation rate, leucocytes, erythrocytes, thrombocytes) were obtained. Also, C-reactive protein, fasting blood sugar, serum creatinine, urea, alanine transferase, albumin, total protein, sodium, calcium and potassium were done.

The ICD-10 was used to code all mental and physical diseases into the study proforma. At the end of three months (for outpatients) or at discharge (for inpatients), the same intake psychiatric and physical examinations were repeated. (In this paper only the intake examination results are presented). Three months period was chosen because it was considered that most patients (on admission) might remit earlier than 12weeks from admission into the study.

One year after the initial assessment the medical records were reviewed to ascertain mortality and drop out from treatment.

Analysis: The SPSS 13.0 was used for analysis. Simple descriptive statistics were employed to present the basic socio-demographic and other characteristics. Logistic regression and simple

Odds Ratios were used to test the association between physical illnesses and mental disorders. The physical diagnoses made at objective examination were compared with physical illnesses already known (to the patient, or the health services). Obesity was defined as BM1>30.

RESULTS

Majority of the patients (52%) had schizophrenia – spectrum disorders, and 22% had mood disorders. Over 70% had seen a religious healer, 40% a native/traditional healer before coming to our clinic. Within one year 33% had dropped out of psychiatric clinic and 2 deaths were recorded. Overall, 43% of the patients had any physical disease at objective examination. Only 14% of physical illnesses were known before examination. The major physical diseases were: cardiovascular (15.1%), diabetes mellitus (5.4%), gastrointestinal diseases (1.5%). Only 2 (0.5%) of the patients had obesity at presentation but this sharply increased after 3 months to almost 13%. The major diseases were more common in those above 40years (*Table 1*).

Table 1. Age group and major physical illness

Age Group	Diabetes (%)	Cardio vascular (%)	Obesity (%)	GIT (%) .
15 – 24	-	-	-	1 (1)
25 – 34	-	12 (10)	-	1 (1)
35 – 44	3 (4)	9 (13)	-	1 (2)
45 – 54	5 (9)	19 (34)	1 (2)	2 (4)
55 – 64	6 (28)	9 (41)	-	-
65+	8 (22)	13 (36)	1 (3)	1 (3)
Total	22 (12)	62 (20)	2 (3)	6 (2)

Table 2. Physical illness in hierarchically ordered mental disorders

Illness	F2 (%)	F3 (%)	F4 (%)	Others (%)
Diabetes	9(5)	6(7)	2(4)	5(11)
Cardiovascular	23(11)	17(19)	9(15)	14(29)
Obesity	23(11)	16(18)	11(18)	2(4)
Total	55(26)	39(44)	22(36)	21(43)

When the mental disorders were hierarchically ordered, physical diseases were detected in many of the patients with schizophrenia spectrum disorders (*Table 2*).

For purposes of comparison, the participants were dichotomized into patients with schizophrenia- spectrum (psychotic) disorders and non- schizophrenia spectrum disorders (i.e. all other mental disorder s combined). Similarly, the participants were dichotomized into bipolar and non-bipolar disorders (i.e. all other mental disorders combined).

For patients with schizophrenia spectrum disorders, there were increased risks for cardiovascular diseases (OR = 1.4, 95% C.I = 1.0-20), diabetes mellitus (OR = 1.3, 95% C.I = 0.8-2.1), and Obesity (OR = 1.2, 95% C.I = 0.9-1.7). For the participants with bipolar disorders, there were also increased risks for cardiovascular diseases (OR = 1.4, 95% C.I = 0.6-3.2). Patients with bipolar disorders had higher rates of major physical diseases than patients with depression (*Table 3*).

Table 3. Physical diseases in patients with depression and bipolar disorders

Disease	Depression	Bipolar .
Cardiovascular	(5)13.0%	(12) 32.3%
Diabetes mellitus	(2)5.0%	(4) 9.7%
Obesity	(5)13.0%	(11) 29.0%
Other illnesses	(11) 11.0%	(30) 29.0% .

In line with the usual tradition to separate substance use disorders from primary major mental disorders, and to enable at least visual comparison with substance use and abuse problems in Nigeria, the substances abused were listed. In all, about 29% of the participants admitted having abused any substances. When the individual substances were separately enquired into, there was a general low rate of psychoactive substances abuse. Alcohol was the commonest substance of abuse (*Table 4*).

The two patients, who had only substance abuse without co-morbid major primary mental disorders, both had physical diseases.

Table 4. Psychoactive substance abuse

Substance	Abuse Rate (%)
Alcohol	13.0
Tobacco	7.0
Cannabis	5.3
Opioids	1.2
Stimulants	1.0
Benzodiazepines	1.0
Other substances	0.5

DISCUSSION

About 43% of the patients in this study had major physical diseases at objective examination, but only 14% had been recognized prior to evaluation. It has been generally observed that physical illnesses in patients with mental disorders are not easily detected for the following reasons: misinterpretation of symptoms in patients with psychiatric disorders, poor social skills, lack of motivation, cognitive impairment, social isolation, and inability to clearly present symptoms.[32,33]

Psychiatrists may be more interested in mental than physical phenomena and thus fail to recognize physical diseases. In developing countries like Nigeria where most patients with mental disorders first consult religious and traditional healers, their physical illnesses may not be easily recognized. Our finding that over 40% of patients seen in a psychiatric clinic had objectively determined physical diseases demonstrates that there is a high physical illness rate in patients with mental disorders in the study site.

In the present report, we focused on diabetes mellitus, cardiovascular diseases and obesity. An Indian study reported 48% physical illness rate in psychotic outpatients.[34] Our rates of 5.4% diabetes mellitus type 2 and 15.4% cardiovascular diseases are in agreement with previous reports.[35] We are not sure to what extent the patients had taken psychotropic medications before being admitted into our study. Over 70% of the patients had consulted religious and native healers before referral.

In Nigeria, it is not uncommon for religious and traditional healers to use antipsychotic drugs. If in our study population such drugs were in any way associated with the development of cardiovascular diseases and diabetes mellitus type 2, we cannot say. However, as shown in the results above, the rate of obesity sharply rose (from half to thirteen per cent) after psychiatric treatment. It is generally known that psychotropic medications are associated with weight gain. It is possible that there is a complex interplay between primary mental disorders, psychotropic medications, cardiovascular diseases and diabetes mellitus type 2.

When compared to other mental disorders, patients with schizophrenia and bipolar disorder were more likely to have diabetes mellitus type 2, cardiovascular diseases and obesity. Previous reports have shown that cardiovascular diseases lead to increased mortality in patients with severe mental illness.[36]

About one third of our patients had dropped out of treatment within one year. Two deaths were recorded in patients who were referred to internal medicine. Mortality rates are near impossible to determine in our patients, partly because of the low patronage of orthodox psychiatric services and the high drop out from care. From clinical experience, over 90% of our patients usually drop out of care within 2-3years. The eventual outcomes of such patients is not known.

An important strength of our study is that all patients were objectively examined. Although self-reports of physical illnesses have often been used, there is no clear establishment of its unarguable reliability. This is even more important in Nigeria where most patients either do not know or are not told what their illness is. From clinical experience, most Nigerian patients would report that they have "malaria" irrespective of any other symptoms that they may actually have. It will therefore be necessary in all circumstances to objectively determine any physical illness. The use of records, which are often incomplete or at times

totally unavailable in Nigeria, is also questionable. To our knowledge, no previous Nigerian study has employed our methodology in objectively ascertaining the co- morbidity of mental and physical diseases.

The weaknesses in our study are acknowledged. First, our sample was drawn from a mental health service. The results may not be generalisable to the population of patients with mental disorders in Nigeria. It would appear that only few patients with mental disorders utilize our service.

Second, it was psychiatrists who made diagnosis of physical diseases. It is possible that psychiatrists in general are not efficient in recognizing medical diseases.[34] However, systematic and rigorous steps were taken in making diagnosis of physical diseases in the present study.

In a critical literature review of physical illness identification/screening in patients with mental disorders, Gregory, *et al* summarized the key findings.[34] According to the authors, there are four basic ingredients in identifying physical diseases in patients with mental disorders: history, physical examination, and review of systems and tests of orientation. Routine laboratory tests were not found to raise sensitivity, but they become more important in elderly patients, those with psychoactive substance abuse/dependence, patients without previous psychiatric history and those who present with medical complaints. In the present study, the authors strove to follow this pattern of physical diseases identification. One of the authors was specifically trained for physical examination for the purposes of the study.

We also had unlimited access to the advice of and collaboration with internists. On another hand, it may be argued that an enthusiasm to identify physical illness in patients with mental disorders, might lead to an over diagnosis. However, all diagnoses were based on clear clinical guidelines coded onto a prepared proforma/check list.

CONCLUSION

Physical diseases are common in patients with mental disorders. These diseases are often not recognized. Mortality may also be high. This report emphasizes the clinical necessity for physical illness screening in patients with mental disorders. Adequate preventive measures should be instituted against weight gain in patients who enter psychiatric service. This focused intervention may improve morbidity and mortality in mental disorders.

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DECLARATION OF INTEREST - None