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SPECIFIC PSYCHIATRIC MORBIDITY AMONG DIABETICS AT A NIGERIAN GENERAL HOSPITAL

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**SPECIFIC PSYCHIATRIC MORBIDITY AMONG DIABETICS AT A NIGERIAN GENERAL HOSPITAL**

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**ABSTRACT**

**Background:** In Nigeria, with a rising incidence of diabetes mellitus (DM), there are no controlled studies of specific psychiatric morbidity among sufferers.

**Objective:** To assess the prevalence of specific psychiatric disorders and general cognitive impairment in patients with diabetes mellitus.

**Method:** Using Wing's Present State Examination and the Mini-Mental State Examination, we assessed the prevalence of specific psychiatric disorders and cognitive impairment among 100DM patients attending an out-patient clinic, in comparison with a matched non-clinic sample; and examined the relationship between psychiatric morbidity and clinical variables.

**Results:** They were predominantly males (66%), mean age 43.0 years, mean duration of illness, 7.7 years and in low level occupations. Only 11 of the patients had sexual dysfunction (11%) and psychiatric symptoms (31%). Psychiatric diagnosis (ICD-10) were, generalised anxiety (6%) and mild depressive disorder (4%). Two had subjective memory disturbance. Insulin-dependent patients had significantly more widespread psychiatric symptoms than the non-insulin dependent. Psychiatric symptomatology was significantly associated with low occupational status, duration of illness and sexual dysfunction.

**Conclusion:** Health education, subsidising the cost of treatment, and physicians' sensitivity to the emotional condition of patients, will help to relieve psychic distress and make for more adequate management.

**INTRODUCTION**

Diabetes Mellitus (DM), the commonest endocrine system disorder, resulting from diminished insulin action, has for long been associated with psychological factors. At one time it was classified as a psychosomatic illness in the belief that psychosocial factors were significant in the manifestation of the disease(1). For example, DM has been reported after a period of stress due to social loss(2). In developed countries, psychiatric symptoms, such as irritability, anxiety, depression, suicidal ideas and cognitive deficits have been widely reported among DM patients especially those who are insulin dependent(3,4). A wide range of neuropsychiatric complications have been reported, including, peripheral neuropathy, erectile impotence, organic brain syndrome and dyskinesia(1,5-7).

In Nigeria, where a rising incidence of DM has been noted(8), the disease poses high socio-economic burden(9-10) and is significantly associated with worries(11) and psychological symptoms(12,13). However, the only available report of psychopathological assessment of diabetics in Nigeria involved the use of a screening instrument, the Hospital Anxiety and Depression scale (HAD)(14) among 37 insulin dependent (ID) and 46 non-insulin (NID) sufferers (13). There is need for data estimating the prevalence of specific mental disorders among diabetic patients.

The aims of our study were, to assess the prevalence of specific psychiatric disorders and general cognitive impairment among diabetes mellitus patients, in comparison with a matched non-clinic sample of government workers; and examine the relationship between psychiatric morbidity and various socio-demographic and clinical variables.

**MATERIALS AND METHODS**

**Subjects:** The experimental (DM) group consisted of consecutive attenders at the endocrinology clinic of the Ikeja General Hospital, Lagos, a 305-bed government hospital. Medical diagnosis was confirmed by the consultant endocrinologist after relevant biochemical tests. The control group were government workers at the nearby Secretariat of the Lagos State Government, randomly selected and matched with the DM group for sex, age and socio-economic status. None of the control group of subjects suffered from diabetes mellitus or any other chronic medical conditions. The DM subjects had been ill for at least two years, in order to ensure that they had had sufficient exposure to the dynamics of the illness(11).

**Instruments:** Detailed history was obtained and physical examination was carried out on each subject. Mental status functioning was assessed using Wing's Present State Examination (PSE)(15) and general cognitive function was examined using the Mini-Mental Examination (MMSE)(16). Psychiatric diagnosis was based on the tenth edition of WHO's International Classification of Diseases (ICD-10).

*Procedure:* All assessments were carried out by one of us (AOC), who achieved satisfactory inter-rater reliability with the supervising senior psychiatrist (JUO) before the formal commencement of the study. In line with the expectation of high level of education in Lagos (with decades of free education and economic capital of the nation), all the subjects had good knowledge of English and were interviewed in that language. All subjects consented to be interviewed.

*Data analysis:* Data were analysed by computer, using frequency counts, Chi-square tests (with Yates correction where necessary), two-tailed t-test and Pearson's correlation, at five percent level of statistical significance.

**RESULTS**

*Socio-demographic features (Table 1):* The 100 DM subjects recruited consisted of 50 with IDD and 50 with NIDD about two-thirds of whom were males, aged 17-60 years (mean 43.0, SD 9.9 years). They were predominantly married, majority were Christians and they were in low level occupations. Table 1 shows that they were well matched in these socio-demographic indices with the control group of civil servants. Also, IDD subjects were similar to the NIDD in these characteristics.

**Table 1**

<i>Socio-demographic characteristics</i>		
Variable	Diabetics N = 100 (%)	Non-Diabetics N = 100 (%)
<i>Sex</i>		
Male	66 (66)	67 (67)
<i>Age (yrs) range:</i>		
17-34	20 (20)	19 (19)
35-54	69 (69)	67 (67)
55-60	11 (11)	14 (14)
Mean (SD)	43.06(9.9)	43.5(9.8)
<i>Marital status:</i>		
Never married	16 (16)	8 (8)
Married	69 (69)	80 (80)
Separated/divorced	12 (12)	12 (12)
Widow	3 (3)	-
<i>Religion:</i>		
Christianity	54 (54)	51 (51)
Islam	45 (45)	49 (49)
Freethinker	1 (1)	-
<i>Occupational status:</i>		
Clerks/Skilled/Service workers	22 (22)	93 (93)
Technicians/Machine/Craft	76 (76)	7 (7)
Unemployed	2 (2)	-
<i>Educational status:</i>		
Primary/Secondary Education	84 (84)	87 (87)
Post Secondary Education	14 (14)	13 (13)
No Formal Education	2 (2)	-

*Clinical characteristics (Table 2):* Majority in the two diabetes groups had been ill for 2-10 years (mean, 7.7, SD, 2.4). The control group denied family history

of diabetes, while there was no significant difference in the prevalence of family history of the illness for the two diabetes groups. Hypertension (34%) was the commonest medical complication. Only seven (7%) of the control group had high blood pressure readings. There was no significant difference in the types of medical complications between the two DM groups. Sexual dysfunctions were more prevalent among IDD subjects, although only a few of them admitted having erectile impotence (4% of IDD) and ejaculatory impotence (2% of IDD).

**Table 2**

<i>Clinical characteristics of diabetic subjects</i>		
Variable	NIDD N=50 (%)	IDD N=50 (%)
<i>Duration of illness (yrs):</i>		
2-10	40 (80)	37 (74)
11-20	9 (9)	11 (11)
21-30	1 (1)	2 (2)
<i>Family history of diabetes</i>		
Positive	8 (32)	6 (24)
<i>Physical illnesses</i>		
External ulcers	1 (2)	1 (2)
Hypertension	7 (14)	10 (20)
Gangrene	1 (2)	1 (2)
Polyneuritis	1 (2)	3 (6)
Cataract	2 (4)	2 (4)
<i>Sexual dysfunction</i>		
Loss of libido	2 (4)	6 (12)
Erectile impotence	-	2 (4)
Ejaculatory impotence	-	1 (2)
<i>Cognitive deficits:</i>		
Present	1 (2)	1 (2)
<i>Specific mental disorders</i>		
Generalised anxiety	3 (6)	3 (6)
Mild depressive disorder	1 (2)	3 (6)

Cognitive deficits, consisting only of subjective memory problems, were present in only one subject each of the two illness groups. The control group of subjects had no symptoms of mental disorder.

The specific psychiatric diagnoses were generalised anxiety disorder (67%) and mild depressive disorder (4%), with a non-significant trend for a higher prevalence of the later disorder among IDD subjects.

*Profile of psychiatric symptomatology (Table 3) and their correlates:* Majority of DM subjects (69%) denied experiencing psychiatric symptoms. There was broad similarity of psychopathological experience between the two DM groups, although there was a tendency for a higher prevalence of some symptoms among IDD subjects. The commonest symptoms among IDD subjects were, worrying (48%), poor concentration (22%), depressed mood (34%), loss of weight (26%), loss of libido (20%) and irritability (20%).

**Table 3***Profile of PSE symptoms among diabetic subjects*

PSE Symptom N=50(%)	IDDM N=50 (%)	NIDDM
No symptoms	34 (68)	35 (70)
Worrying	24 (48)	10 (20)
Tiredness or exhaustion	8(16)	1 (2)
Restlessness or exhaustion	3 (6)	1 (2)
Nervous tension	1 (2)	1 (2)
Hypersensitivity to noise	2 (4)	0
Autonomic anxiety	4 (8)	3 (6)
Anxiety with auto. accompaniment	2 (4)	2 (4)
Situational anxiety	3 (6)	1 (2)
Inefficient thinking	1 (2)	1 (2)
Poor concentration	11 (22)	5(10)
Neglect due brooding	1 (2)	1 (2)
Loss of interest	6 (12)	2 (4)
Depressed mood	17 (34)	3 (6)
Hopelessness	1 (2)	0
Anxiety or depression	7 (14)	4 (8)
Morning depression	1 (2)	2 (4)
Loss of weight	13 (26)	3 (6)
Delayed sleep	3 (6)	4 (8)
Early waking	5 (10)	3 (6)
Loss of libido/impotence	10 (20)	6 (12)
Irritability	10 (20)	2 (4)

There were no gender differences in the pattern of psychiatric symptomatology. The IDD subjects were significantly more likely than the NIDD subjects, to complain of worrying, tiredness/exhaustion, depressed mood, loss of weight and poor concentration ( $p < 0.01$ ). Among the NIDD, low occupational status was significantly associated with experience of depressed mood, loss of weight and irritability ( 2 mostly over 12,  $df = 3$ ,  $p < 0.01$ ). Among the IDD, low educational status was significantly associated with experiences of tiredness/exhaustion, mixed anxiety and depressive symptoms and early morning awakening. Also among the IDD subjects, duration of illness was directly associated with feelings of tiredness/exhaustion, poor concentration and loss of weight ( $p < 0.02$ ). Subjects with sexual dysfunction were significantly more likely to have psychiatric symptoms than those who had no sexual dysfunction ( $p < 0.01$ ). There was no consistent significant predictor of psychiatric morbidity.

## DISCUSSION

The socio-demographic characteristics of our cohort were similar to those of previous diabetes studies in Nigeria(5,11,13) and elsewhere(1). For instance, 63% of our subjects were aged 30-49 years, and Tattersall(1) had noted that the peak prevalence of DM was to be found in the fourth and fifth decades of life. The male preponderance (66%) in our sample had been noted in a large series (832 patients) from nearby Ibadan, Nigeria(5). They had no proper explanation for this finding. We have no reasonable explanation for this

observation, and it is not a consistent finding in the literature.

The relatively low rate of positive family history in our DM subjects (14%) is in contrast with reports from other developing countries where higher prevalence of family history has been reported(17). In line with previous reports, the DM subjects had significantly higher prevalence of a variety of medical physical conditions than the control group(18).

Only two DM subjects had subjective memory problems, while specific psychiatric diagnosis was made in 10 (10%) patients and none in the control group. As in previous studies, psychiatric diagnoses consisted of anxiety and mild depression. Psychiatric symptomatology was associated with low occupational status, duration of illness and sexual dysfunctions. But this relatively low prevalence rate of mental disorders is in marked contrast to most studies from developed countries(1), and the impression from a recent Nigerian teaching hospital study in which a screening instrument (the HAD scale) was used to assess psychiatric symptomatology(13). A study from nearby Ibadan teaching hospital had found that 5% of IDD and 4% of NIDD had threshold score for anxiety; while 37.8% of IDD and 15.2% of NIDD had threshold score for depression. Perhaps this could be accounted for by the fact that patients attending a teaching hospital clinic are more likely to have more difficult to treat DM than those attending an ordinary general hospital like the one where our study was based. Also the teaching hospital patients had longer duration of illness and higher unemployment rate, factors which were found to be significantly associated with psychiatric symptoms among our cohort. However, in line with the findings of the teaching hospital study, cognitive impairment was rare, and IDD subjects had significantly higher prevalence of many psychiatric symptoms.

The previous Nigerian study had also found that only the illiterates among the IDD had upto threshold score for depression. This is in line with our finding that subjects with low occupational status were significantly more likely to experience psychiatric symptoms. First, this could be a reflection of the reported economic burden of DM in Nigeria(9,10,19). Second, it underscores the need for consistent efforts at health education for DM sufferers and a national policy of subsidising the cost of this very expensive illness in a severely distressed national economy.

The consistently reported high prevalence of sexual dysfunction and its significant association with psychiatric symptomatology among DM patients calls for increased sensitivity to this issue among clinicians, so that these patients can receive more satisfactory care.

The findings of this study are not generalisable because the patients were not representative of the general population of DM subjects, since the data are based on a small sample size from a single out-patient

clinic. However, the inclusion of a general population control group for comparison lends validity to the methodology; so that the similarity of our findings with those of previous studies has added robustness to the impression that DM, even in a steady state of adequate sugar control, is associated with significantly higher levels of psychiatric morbidity than in the general population. Clinicians who treat these patients should be sensitive to symptoms of psychic distress so as to make for a more satisfactory management.

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