

# The Association between Psychiatric Disorders and Quality of Life of Patient with Diabetes Mellitus

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**Objective:** Quality of life (QOL) assessment has been employed increasingly to evaluate outcome among patients with chronic medical conditions. Such assessment could be adversely affected by psychiatric disorders, co existing with such a medical condition.

**Method:** A cross sectional study of 251 out-patients with diabetes mellitus was done at a Nigerian University Teaching Hospital using the Composite Diagnostic Interview (CIDI) for psychiatric assessment and the World Health Organisation Quality of Life brief version (WHOQOL-BREF) to evaluate the QOL.

**Results:** Fifty (20%) of the 251 respondents met the ICD-10 criteria for definite psychiatric diagnosis. Depression accounted for 9.6% while twenty-six (10.4%) had anxiety disorder. Of the 35 respondents who performed poorly on the overall quality of life, 17(48.57%) had psychiatric diagnosis; 9 were depressed and 8 had anxiety disorder. 39 (15.5%) scored poor on the physical health domain. 21(53.8%) of the 39 respondents with poor score had psychiatric diagnosis: 13 had depression while 8 had anxiety disorder. On domain 1 (physical health), 51 (20.3%) scored poor. Twenty-eight (54.9%) of the poor scorers had psychiatric diagnosis, 20 were depressed while 8 had anxiety. 51 (20.3%) scored poor on psychological domain (domain 2) twenty-eight (54.9%) of the poor scorers had psychiatric diagnosis, 20 of which were depressed while 8 had anxiety. 34 (13.5%) scored poor on social relations (domain 3). 19 (55.9%) of those who scored poor had psychiatric disorder and the diagnosis was depression.

**Conclusions:** Physicians need to increase their surveillance of psychiatric co-morbidity in diabetes mellitus and collaborate with psychiatrists for a more effective liaison to improve the quality of life of patients with diabetes..

## Keywords:

*Anxiety, Depression, Diabetes mellitus, Quality of Life.*

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**H**ealth related quality of life (HRQOL) refers to the ways in which health, illness, and medical treatment influence an individual's perception of functioning and well being (1-2). Increasingly, quality of life (QOL) assessment has been employed to evaluate outcome among patients with chronic medical conditions (3). Such chronic illnesses typically are associated with decreased quality of life when comparisons are made to healthy individuals (4). The medical morbidity may directly influence patients' evaluations of their quality of life. Such patients are also at high risk for developing psychiatric illnesses such as anxiety and affective disorders (5). These psychiatric conditions can influence HRQOL (5-6). Thus, the impact of chronic illness on quality of life may be due, in part, to its effect on the development of psychiatric problems. If coexisting psychiatric symptoms and/or illnesses contribute to the impaired quality of life found among patients with chronic medical conditions, then it may be possible to reduce

impact on the quality of life of such individuals by paying greater attention to identification and treatment of these coexisting psychiatric problems.

Search of the literature revealed a dearth of studies on psychiatric disorders and QOL in patients with diabetes mellitus in sub-Saharan Africa. There may be cross-cultural differences in the psychosocial impact and emotional response of patients in developing cultures to a chronic illness such as diabetes mellitus.

The aim of this study was to determine the relationship between psychiatric disorders and HRQOL in patients with diabetes mellitus in Nigeria.

## Materials and Method

### Subjects

The subjects consisted of a consecutive series of 261 outpatients with diabetes who were recruited from consultant endocrinology clinics of University of Ilorin Teaching Hospital (UITH), Ilorin, a tertiary health institution in north-central Nigeria. All patients were

black Africans and were recruited over a period of 7 months between December, 2002 and July, 2003.

Inclusion criteria included definite diagnoses of diabetes mellitus based on standard criteria, the patients must also have had established diabetes for at least a year so that the dynamics of the illness would not be new to them and be in a steady state (without a need for hospitalization) for about 3 months prior to assessment.

Exclusion criteria were a state of hypoglycemia or ketoacidosis on the day of assessment.

### Measures

Questionnaire on socio-demographic and clinical history designed by the authors was administered to the patients. Reference was also made to the case notes of the patients as required. The psychiatric diagnoses were made using the depression and anxiety sections of the Composite International Diagnostic Interview, CIDI (7). CIDI is a comprehensive, fully standardized diagnostic interview for the assessment of mental disorders according to the definitions and criteria of ICD-10 (International classification of diseases, 10th edition) (8) and DSM-IV (Diagnostic and Statistical Manual of mental disorders, 4th edition) (9). It has been used in epidemiological studies of mental disorders and for research and clinical purposes. CIDI was validated in Nigeria as part of a World Health Organization project on psychological problems in General Health Care (10-11).

The QOL was assessed using the World Health Organisation Quality of Life brief version (WHOQOL-BREF) (3). This self-administered generic questionnaire assesses the subjective QOL of patients over the preceding 2 weeks. It has 4 domains and 24 items, with each item scored between 1 and 5. The questionnaire includes the seven-item physical health domain (score range, 7–35); the six-item psychological health domain (score range, 6–30); the three-item social relationship domain (score range, 3–15); and the eight-item environment domain (score range, 8–40). Higher scores indicate better QOL. In addition, WHOQOL-BREF contains two items on the overall Quality of Life and General Health. The four domain scores are scaled in a positive direction (i.e., higher scores denote higher quality of life). The score of items within each domain are used to calculate the domain score. Score of mean + 1 S.D. on each domain is graded "fair"; score < (mean - 1 S.D.) is "poor" while score > (mean + 1 S.D.) is graded "good" (12-13).

The WHOQOL-BREF has good psychometric properties<sup>3,13</sup> and has been validated and used in previous studies in Nigeria (12-13).

UITH ethics and research committee approved the study protocol before the study commenced. In addition, informed consent of the respondents was also sought before the administration of the questionnaires.

Data were analysed using the Statistical Package for Social Sciences (SPSS 11) for window. Cross tabulation, frequency statistics and chi square test were

used for evaluating the relationship between variables. Level of statistical significance was set at 5%.

### Results

Two hundred and sixty-seven consecutive attendees of the diabetes clinic met the inclusion criteria during the course of the study. Of these, 251 representing 94% consented to participate.

Fifty (20%) of the respondents met the ICD-10 criteria for definite psychiatric diagnosis. Twenty-four respondents had major depression accounting for 9.6% while twenty-six (10.4%) of the respondents had anxiety disorder.

#### Overall quality of life

One hundred and sixty four (65.3%) patients recorded fair, 52(20.7%) had good score while 35(13.9%) scored poor in the overall quality of life rating.

Of the 35 respondents who performed poorly on the overall quality of life, 17(48.57%) had psychiatric diagnosis. Nine were depressed and 8 had anxiety disorder.

#### Health satisfaction

One hundred and fifty three (61.0%) scored fair, 26(10.4%) scored good while 72(28.7%) scored poor on health satisfaction. Thirty four (47.2%) of the 72 who scored poor had psychiatric diagnosis: 22 had depression while 12 had anxiety.

#### Domain 1 (physical health)

One hundred and seventy one (68.1%) scored fair, 41(16.3%) scored good while 39 (15.5%) scored poor on the physical health domain. 21(53.8%) of the 39 respondents with poor scores, had psychiatric diagnosis: 13 had depression while 8 had anxiety.

#### Domain 2 (psychological domain)

One hundred and fifty six (62.2%) scored fair, 44 (17.5%) scored good while 51 (20.3%) scored poor. Twenty-eight (54.9%) of the poor scorers had psychiatric diagnosis, 20 of which were depressed while 8 had anxiety.

#### Domain 3 (social relationship)

One hundred and eighty nine (75.3%) respondents scored fair, 28 (11.2%) scored good while 34 (13.5%) scored poor. 19 (55.9%) of those who scored poor had psychiatric disorder and the diagnosis was depression.

#### Domain 4 (Environment domain)

All the 251 respondents performed fairly on this domain.

### Discussion

To our knowledge, this is the first study in Nigeria to examine the relationship between psychiatric disorders and quality of life in patients with diabetes mellitus.

Table 1. Diagnoses and socio-demographic variables.

Variables	No psychiatric diagnosis (n=201)	Depression (n=24)	Anxiety (n=26)
<b>Gender</b>			
Male	114	19	16
Female	87	5	10
<b>Mean age</b>	49.35±10.0	51.5±9.3	45.8±11.5
<b>Marital status</b>			
Single	22	2	15
Married	167	20	11
Widowed	12	2	0
<b>Mean years of Edu.</b>	9.9±6.1	7.1±6.5	9.2±5.1
<b>Occupation</b>			
Senior officials/Professionals	39	1	13
Technicians/Clerks/Service workers/Skilled workers	91	8	3
Craft related workers/Machine operators	23	0	0
Elementary occupation	40	12	0
Armed forces	8	3	0
<b>Mean income (Naira)</b>	31,800±20,152	23,727±20,168	40,833 ±22,198
<b>Care/ support</b>			
Relatives	136	20	20
Others	8	0	3
None	57	4	3
<b>Type of diabetes</b>			
Type I	40	3	8
Type II	161	21	18
<b>Illness duration (years)</b>			
0-9			
10-19	151	15	26
20-29	44	7	0
	6	2	0
<b>Family history of diabetes</b>			
Yes	53	7	6
No	14	17	20

The main finding is the preponderance of psychiatric disorders among those reporting poor quality of life. The finding that almost half of the 35 respondents who performed poorly on overall quality of life had psychiatric diagnosis means that psychiatric illness/symptoms had a negative impact on the overall quality of life, depression being the diagnosis of 9 of the 17 diagnosed with psychiatric morbidity. Likewise, about half of 72 respondents who performed poorly on Health satisfaction had psychiatric diagnosis, depression accounting for 21 of this 34.

On the physical domain, more than half of the 39 respondents who performed poorly on this domain had psychiatric diagnosis with depression accounting for 13.

Twenty-eight of 51 respondents who scored poorly on psychological domain had psychiatric diagnosis. Depression accounted for 20 of this number.

These findings are consistent with other reports which indicated that depression may influence the health

related quality of life of patients with chronic physical conditions and that patients having depressive symptoms and disorders together with chronic medical conditions rate themselves lower on social and role function domain than patients with advanced or chronic medical conditions alone (5, 14).

On the social relationship domain, all the 19 respondents who performed poorly had diagnosis of depression. This study indicated that psychiatric status is consistently associated with a poorer quality of life in patients who have chronic medical illness like diabetes. Almost all aspects of health related quality of life were significantly associated with psychiatric diagnosis particularly depression.

Pita et al (15) had also observed that depressed diabetics had significantly higher mean values in a variety of QOLIE – 89 (Quality Of Life In Epilepsy Questionnaires) that was especially adapted for diabetes mellitus.

Table 2. Quality of life categorization of the respondents

QOL	Psychiatric diagnoses			Total
	No Dx	Depress.	Anxiety	
<b>Overall quality of life(QOL)</b>				
Fair	131	15	18	164
Good	52	0	0	52
Poor	18	9	8	35
	n=201 X <sup>2</sup> =31.442	n=24 df=4	n=26 p value=0.000	
<b>Health satisfaction</b>				
Fair	137	2	14	153
Good	26	0	0	26
Poor	38	22	12	72
	n=201 X <sup>2</sup> =61.952	n=24 df=4	n=26 p value =0.000	
<b>QOL domain 1</b>				
Fair	142	11	18	171
Good	41	0	0	41
Poor	18	13	8	39
	n=201 X <sup>2</sup> =44.678	n=24 df=4	n=26 p value=0.000	
<b>QOL domain 2</b>				
Fair	134	4	18	156
Good	44	0	0	44
Poor	23	20	8	51
	n=201 X <sup>2</sup> =75.897	n=24 df=4	n=26 p value = 0.000	
<b>QOL domain 3</b>				
Fair	158	5	26	189
Good	28	0	0	28
Poor	15	19	0	34
	n=201 X <sup>2</sup> =104.121	n=24 df=4,	n=26 p value =0.000	
<b>QOL domain 4</b>				
Fair	201	24	26	251

The most prevalent being those of Energy – Fatigue, Attention/Concentration, Emotional well being, Health discouragement, Overall Quality of life, Hypoglycemia worry, Health perception, Work/Driving/Social function, and Overall Health. Depression appeared to be the main factor related to poor quality of life in chronic schizophrenic patients, even more than extra pyramidal symptoms (16).

In a survey of the quality of life of patients with major mental disorder using WHOQOL-Bref (12, 17) a decline in the subjective quality of life of subjects with affective disorder was observed between the period of onset of illness and time of the study. Similarly, Skevington and Wright (18) examined the changes in QOL of 106 patients with moderate depression receiving antidepressants using WHOQOL-100 and found that depression decreased significantly over 2 months and 74% reported feeling better. WHOQOL-100 scores also increased demonstrating that QOL improved significantly in the 8 weeks following the use of anti depressant treatment.

In a study of out patients with heart failure (19), depression was similarly found to adversely affect the quality of life of the patients. It can, therefore, be explained that irrespective of the nature of the chronic illness, mental or physical, psychiatric disorders such

as depression adversely affect the quality of life of the patients.

There is explanation to the lower quality of life in patients with diabetes mellitus with co-morbid psychiatric disorders. Depression and anxiety existing with diabetes could be perceived as double tragedy by the patients. They could also result in poor diabetes drug compliance and poor diabetes control with attendant physical complications. Similarly, depressive disorders or symptoms could make a patient report a lower quality of life due to poor self esteem.

The major limitation of this study is the cross sectional design which can not indicate the causality of the effect. Similarly, it is a one center study which can not be generalized to the entire population of patients with diabetes mellitus.

In conclusion, we have shown that psychiatric disorders affect the quality of life of patients with diabetes mellitus adversely. We, therefore, call on physicians managing these patients to increase their surveillance of psychiatric co-morbidity in diabetes mellitus. A close collaboration and adequate liaison is essential to ensure better quality of life of patients with this chronic medical illness. Future studies are also needed to study the impact of improved psychiatric disorders on quality of life.

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