HEALTH-RELATED QUALITY OF LIFE AMONG ADULTS LIVING WITH DIABETES MELLITUS IN LAGOS STATE UNIVERSITY TEACHING HOSPITAL, IKEJA.NIGERIA

Running Title: Health-Related Quality of Life in Diabetes Mellitus

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Background:

Diabetes mellitus is a common endocrine-metabolic disorder characterized by hyperglycaemia resulting in the risk of microvascular (retinopathy, nephropathy, and neuropathy) and macrovascular (ischaemic heart disease, stroke, and peripheral vascular disease) complications, with associated reduced life expectancy and diminished quality of life.[1]

It is a chronic disease that impacts patients' lives negatively. The disease also negatively influences the quality of life (QoL). When it coexists with other chronic illnesses, such as hypertension, cerebrovascular accident, and retinopathy the impact on life may be worse.

Exploring the quality of life among diabetics may reveal several issues and raises a number of questions needed to be answered.

Quality of life (QoL) is defined by the World Health Organization (WHO) as "the individual's perception of their position in life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and their interests." [2]

Several psychometric tools have been developed in different languages which assess many facets of diabetes' influence on a person's life. In this study, the World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire was used to determine the health-related quality of life in DM subjects attending Lagos State University Teaching Hospital, (LASUTH) Ikeja, Nigeria. The questionnaire assessment is based on physical, psychological, social, and environmental domains.

Materials and Methods

Study location

The Diabetic clinic of Lagos State University Teaching Hospital (LASUTH) was used. The hospital was inaugurated in 1955 and converted in 1970 into a secondary health center and in July 2001 it transformed into a teaching hospital following the creation of the Lagos State University, College of Medicine on 9th February 1999. The clinic runs twice a week, Tuesdays and Thursdays.

Study population

The DM study participants were recruited from LASUTH's diabetic clinic. The control participants were recruited from among the LASUTH's members of staff, including, Medical Doctors, Nurses, Medical Laboratory Scientists, Physiotherapists, and Administrative Staff. Using a research assistant, to fill out the WHOQOL-BREF questionnaire (Appendix 1). A total of over one thousand patients have been registered in the DM clinic since its inception.

Study Design

This was a descriptive, cross-sectional, and comparative study involving subjects living with DM and apparently healthy controls who have no known chronic illness such as diabetes mellitus, hypertension, arthritis, cancers, HIV/AIDS, asthma, or duodenal/gastric ulcer.

Sampling technique

Using a purposive sampling technique, participants were recruited consecutively as they consented to participate in the study. Non-consenting participants were excluded

Study instrument

WHOQOL-BREF, an interviewer-administered questionnaire was administered to all participants after signing the consent form. It was used to assess the quality of life of both the DM subjects and the control, the non-diabetic group. The WHOQOL-BREF [2] was developed from the WHOQOL-100 (which consists of 100 questions) detailed in the evaluation of individual facets relating to the quality of life, but too lengthy to administer when studies with large sample sizes are conducted. The WHOQOL-BREF, a reliable and well-validated WHO questionnaire contains a total of 26 questions on a Likert scale of 1-5 numbered from questions 1 to 26 (Appendix 1), selected responses were scored 5 based on the best feelings and 1 worst feeling. Negatively worded items had reversed scores. The higher the score the better the quality of life [3]. There are four domains namely, domain 1, the physical component assesses information on activities of daily living, dependence on medicinal substances and medical aids, energy, and fatigue, mobility, pain, and discomfort, while the domain 2 is about psychological component assessing information on bodily image and appearance, negative and positive feelings, self-esteem, and spirituality. Domain 3 is the social component which assesses information like personal relationships support and sexual activity and lastly domain 4, the environmental component is about financial resources, freedom, physical safety and security, home environment, etc. Socio-demographic characteristics of study participants were obtained along with the standard questions available in the WHOQOL-BREF.

WHOQOL-BREF Scoring

The 4 domain scores were derived from the WHOQOLBREF scoring system (Appendix 1).
The table for the calculation of scores was completed after each interview.

Table 1: Equation for computing domain scores

Equation for computing domain scores		Raw Score	Transformed scores*	
			4-20	0-100
Domain 1	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ □ + □ + □ + □ + □ + □ + □	a.=	b:	c:
Domain 2	$Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)$ □ + □ + □ + □ + □ + □	a.=	b:	c:
Domain 3	$Q20 + Q21 + Q22$ □ + □ + □	a.=	b:	c:
Domain 4	$Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25$ □ + □ + □ + □ + □ + □ + □ + □	a.=	b:	c:

Domain scores were computed from the score of items in table 1. The raw scores were converted to a score of 100 as recommended by Bergner *et al* [4]

Inclusion criteria for cases

Consenting adult DM subjects attending the clinic

Inclusion criteria for controls

Volunteer controls staff including Medical Doctors, Nurses, Medical Laboratory Scientists, and Administrative members of staff.

Exclusion criteria for cases

     Non-consenting Adult DM subjects

Exclusion criteria for controls

     Non-consenting control participants
     Control participants with any kind of chronic illness listed above

Sample size calculation

The WHOQOL-BREF [2] has been validated in 20 field centers from 18 countries; WHO endorsed that countries not included in the initial 18 countries e.g., Nigeria, should be piloted on a minimum of 300 adults [2]. This figure is derived from the required number of participants needed for analysis of pilot data consisting of 250 living with the disease and 50 apparently well persons.

Participant's informed consent
The participants' rights and benefits of the study were clearly explained to them. Verbal and written informed consent was obtained from each participant by means of voluntarily signed consent forms. No participant was coerced in any way for participation, which was at no cost to them.

Ethics committee approval
Before the commencement of the study, ethics committee approval was obtained from the Health Research and Ethics committee of LASUTH. The approval number is LREC/06/10/1806.

Statistical analysis
Data were analyzed using SPSS version 26.0 (statistical package for social sciences, Inc., Chicago, Ill). The continuous variables were given as means± standard deviation (SD).
P-Value was considered to be statistically significant when at P≤ 0.05

Results
A total of three hundred and six (306) participants were recruited consisting of two hundred and fifty-six (256) DM participants (cases) and fifty (50) controls who were non-diabetic Mellitus, nor have any other chronic disease. The mean ages of the cases and controls were 60.58±13.06 and 49.46±14.72 years respectively. P-value =0.01. Altogether, 63.6% and 36.4% of females and males respectively participated in the study. The sex distribution of DM and controls participants were (65.6% and 34.4%) and (60% and 40%) females and males respectively.

DM participants had lower but statistically insignificant scores compared with controls regarding physical component which assesses information on activities of daily living, dependence on medicinal substances and medical aids, energy, and fatigue, mobility, pain and discomfort, and a lower but statistically significant association of psychological component assessing information on bodily image and appearance, negative and positive feelings, self-esteem, and spirituality and a lower score of the social component which assesses information like a personal relationship, social support, and sexual activity. However, the control groups had almost the same score compared with the DM group regarding the environmental component which is about financial resources, freedom, physical safety and security, and home environment. etc Table 2

Table 2: WHO-QoL 100 in DM participants and Controls

WHO-QoL 100 Domain	DM Mean ±SD	Controls Mean ±SD	P value
Physical Health	58.79±11.67	59.56±9.66	0.62
Psychological Health	58.45±12.83	66.70±12.57	0.01
Social Relationship	59.92±18.47	65.08±18.79	0.15
Environment	61.88±15.06	61.18±17.27	0.79

Psychological health, social relationship, and environment were higher in male DM participants compared with females. However, physical health was higher in females than in males' DM participants. Table 3

Table 3 WHO-QoL 100 gender-specific results of the DM participants.

WHO-QoL 100 Domain	Males Mean ±SD	Females Mean ±SD	P value
Physical Health	58.44±11.84	59.98±11.06	0.75
Psychological Health	59.09±12.61	56.34±13.43	0.36
Social Relationship	61.17±18.08	55.60±19.28	0.11
Environment	62.31±14.72	60.44±16.17	0.89

Psychological health and social relationship were higher in male controls than diabetes mellitus participants, and physical health evaluation was at par in both males DM participants, and controls. While the environment scores were higher in male DM participants than in controls. Table 4

Table: 4. WHO-QoL 100 in all-Male Participants

WHO-QoL 100 Domain	DM Mean ±SD	Controls Mean ±SD	P value
Physical Health	58.44±11.84	58.70±8.29	0.85
Psychological Health	59.09±12.61	66.60±11.81	0.001
Social Relationship	61.17±18.08	62.90±18.94	0.55
Environment	62.31±14.72	60.95±16.56	0.58

All the four domains, physical, psychological, social, and environment were higher in females' control than DM participants. Psychological health was statistically significant.
Table 5.
Table 5: WHO-QoL Domain in all-female participants

WHO-QoL 100 Domain	DM Mean ±SD	Controls Mean ±SD	P value
Physical Health	59.98±11.06	60.13±10.58	0.92
Psychological Health	56.34±13.43	66.77±13.26	0.001
Social Relationship	55.60±19.28	66.53±18.87	0.004
Environment	60.44±16.19	61.33±18.01	0.74

Discussions

Diabetes mellitus could constitute a huge weight on the health budget of many nations. In countries where the health budget has continually fallen short of the percentage recommended for health, the strain on the available proportion will negatively impact the quality of healthcare delivered in the country. Many aspects of healthcare –e.g. psychosocial, physical, and environmental, are easily neglected. The attention given to the quality of life of many individuals with chronic disease is sometimes overlooked in many settings.

Most of the participants recruited in this study among the DM subjects were females. Almost all similar previous Nigerian studies reported a higher percentage of females compared with males attending DM clinics [5-7] The higher number of female participants attending DM clinics is consequent on a reported better health-seeking behaviour of females than males [8] Males often considers health-seeking behaviour as unmanly until a disease is becoming a terminal illness.

Our study reports a lower QoL score among the DM group than the controls regarding the physical/ psychological health and social relationship which is in keeping with the findings from a similar study in Port-Harcourt, River State, Nigeria, [5] and by Rubin and Peyrot. [9] A lower physical health score amongst DM may be attributable to this study's higher mean age compared with the control. Aging causes degeneration of muscles, ligaments, bones, and joints, and diabetes may aggravate the problem. [10] Several authors have reported a positive correlation between poor QoL and age. [11-13] However, O'Reilly *et al* reported increased QoL with advanced age. [14] A lower QoL score among the DM group may be a consequence of DM complications seen amongst participants e.g. amputations, cerebrovascular disease, diabetic retinopathy, and nephropathy. Vishakha *et al* and Rwegerera *et al* reported lower physical QoL scores among DM subjects with complications. [15, 16] A low physical health score among the DM group may be attributable to pain and immobility which are the commonest complaints among them. [17]

Psychological health is impacted negatively by variation in lifestyle regarding diet restriction and daily drug use associated with DM diagnosis which may be followed by a change of negative emotional responses, including anger, guilt, frustration, denial, and loneliness. [18] The DM group also scores lower than the control group given the components of social relationships which include personal relationships, sexual activity, and social support. More of the DM cases were divorced and widowed due to the older age of participants compared with the controls. The majority of the DM group scored lower compared with the control in questions such as "how satisfied are you with your personal relationships"? "How satisfied are you with your sex life"? "How satisfied are you with the support you get from your friends"? In keeping with this study, several studies [19-21] have reported poor sexual activities among the DM group. Vascular/neurological complications of DM coupled with age-induced sexual dysfunction in DM may be associated with poor social relationship scores obtained in this study.

The equal score obtained in both groups regarding the environment in this study is similar to the report of Jain *et al*, [22] but contrary to another Nigerian study [23] which reported that 79% of DM patients scored lower than control in the environment domain.

In keeping with several studies [24-27], in this study, the male DM group had higher scores than the female DM subjects regarding psychological health, social relationship, and environment. However, Omani men had lower QoL scores in all the four domains compared with Omani women. [28] Anderson *et al* reported that depression is commoner in women with DM than in men, [29] depression impacts negatively on physical/psychological health and overall QoL. [30-31] This could also account for why female controls in the present study had higher QoL scores in all the four domains compared with the female DM group. However, male control had higher scores than the male DM group in two of the four domains i.e. psychological and social relationships.

Age, DM complications, demographic, and psychological factors are potential confounders that impact QoL. [9] These factors were not taken into consideration in the statistical analysis of this study. Secondly, another limitation is the reliability of the information provided by study participants filling the study questionnaire.

In conclusion, the DM group had lower quality of life compared with the control group with no chronic illness. QoL is better in male DM group than female DM and better in female controls than female DM group

Disclosure: The authors declare no conflict of interest.

Authors Contributions: DOA conceptualized this study, OOB: Prepared the draft; KOA; implemented the study design; DOA; Data analysis, AAA, data analysis; UIE; read and approved the final study; BAR; read and approved the final study; AOI: read and approved the final study, INI; read and approved the final study DR: read and approved the final study.

Consent: All authors read and gave consent for publication. Requirements for authorship were met. Each author believes that the manuscript represents honest work.

References
1. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care. 2004 May;27(5):1047–53.
2. WHOQOL; Measuring Quality of Life; Programme on Mental Health; Division of Mental Health and Prevention of Substance Abuse ;World Health Organization CH-1211 Geneva 27 Switzerland; pages 1-13
3. World Health Organization. WHOQOL-BREF: introduction, administration, scoring and generic version of the assessment: field trial version, December 1996.
4. Bergner M, Bobbitt RA,Carter WB. The Sickness Impact Profile: Development and final revision of a health status measure: Medical Care;1981;19,787-805.
5. Okpuruka PO, Anarado AN, Nwonu E, Chinweuba A, Ogbonnaya NP, Opara HC, *et al*. Health-related quality of life (HRQOL) of patients with type 2 diabetes mellitus and people without diabetes at a tertiary hospital in Port-Harcourt, Rivers State, Nigeria. Int J Med Health Dev; 2022;27:151-9.
6. Nwatu CB, Onyekonwu CL, Unaogu NN, Ijeoma UN, Onyeka TC, Onwuekwe IO, *et al* Health-Related Quality of Life in Nigerians With Complicated Diabetes Mellitus – A Study from Enugu, South East Nigeria. Nigerian Journal of Medicine, 2019, Vol. 28 No. 2, page 138-147.
7. Morgan UM, Etiobong E. Quality of life of patients with diabetes mellitus attending a tertiary hospital in Uyo, South–South Nigeria. Niger J Med: 2022;31:163-7
8. Thompson, A.E., Anisimowicz, Y., Miedema, B.. The influence of gender and other patient characteristics on health care-seeking behaviour: a QUALICOPC study. *BMC Fam Pract;* 2016;**17,** 38
9. Rubin RR, Peyrot M. Quality of life and diabetes. Diabetes Metab Res Rev. 1999;15(3):205-18.
10. American Diabetic Association. American Diabetes Association Standards of Medical Care in Diabetes 2017
11. Lee WJ, Song K-H, Noh JH, Choi YJ, Jo M-W. Health-related quality of life using the EuroQol 5D questionnaire in Korean patients with type 2 diabetes. J Korean Med Sci. 2012;27(3):255–60.
12. Javanbakht M, Abolhasani F, Mashayekhi A, Baradaran HR. Health related quality of life in patients with type 2 diabetes mellitus in Iran: a national survey. PLoS One. 2012;7(8):e44526
13. Quah JH, Luo N, Ng WY, How CH, Tay EG. Health-related quality of life is associated with diabetic complications, but not with short-term diabetic control in primary care. Ann Acad Med-Singapore. 2011; 40(6):276.
14. O'Reilly DJ, Xie F, Pullenayegum E, Gerstein HC, Greb J, Blackhouse GK, *et al*. Estimation of the impact of diabetes-related complications on health utilities for patients with type 2 diabetes in Ontario, Canada. Qual Life Res. 2011;20(6):939–43
15. Vishakha J, Saumya S, Omprakash G. Healthrelated Quality of Life (HR-QoL) in patients with type 2 Diabetes. N Am J Med Sci. 2014; 6(2):96-101.
16. Rwegerera GM, Moshomo T, Gaenamong M, Oyewo TA, Gollakota S, Rivera YP, *et al*. Health-Related Quality of Life and Associated Factors among Patients with Diabetes Mellitus in Botswana. Alex J Med:2017.
17. Sakamaki H, Ikeda S, Ikegami N, Uchigata Y, Iwamoto Y, Origasa H, *et al*. Measurement of HRQL using EQ-5D in patients with type 2 diabetes mellitus in Japan. Value Health. 2006;9(1):47–53.
18. Rubin, R.R.: Diabetes and Quality of Life. Diabetes Spectrum, 2000;13; 2000-2021.
19. Soni JS, Oparah AC, Osarenmwinda M. Determinants and predictors of quality of life of hypertension and type 2 diabetes outpatients in a Nigerian hospital. J Pharm Allied Sci 2014;11:2.
20. 24th Annual Conference of the International Society for Quality of Life Research. Qual Life Res 2017;26(Suppl 1):1-142.
21. Patel B, Oza B, Patel K, Malhotra S, Patel V. Health related quality of life in type-2 diabetic patients in Western India using World Health Organization Quality of Life – BREF and appraisal of diabetes scale. Int J Diabetes Develop Count 2014;34:100-7.
22. Jain V, Shivkumar S, Gupta O. Health-related quality of life (HRQOL) in patients with type 2 diabetes mellitus. N Am J Med Sci 2014;6:96-101
23. Issa BA, Baiyewu O. Quality of life of patients with diabetes mellitus in a Nigerian teaching hospital Hong Kong. J Psychiatry 2006;16: 27-33.
24. Larsson U, Karlsson J, Sullivan M. Impact of overweight and obesity on health-related quality of life – a Swedish population study. Int J Obes Relat Metab Disord 2002; 26: 417–24.
25. Soltoft F, Hammer M, Kragh N. The association of body mass index and health-related quality of life in the general population: data from the 2003 Health Survey of England. Qual Life Res 2009; 18: 1293–9.
26. Kolotkin RL, Crosby RD. Psychometric evaluation of the impact of weight on quality of life-lite questionnaire (IWQOL-lite) in a community sample. Qual Life Res 2002; 11: 157–71
27. Svenningson I, Markland B, Attvak S, Gedda B. Type 2 diabetes perceptions of quality of life and attitudes towards diabetes from a gender perceptive: Scan J,Caring Sci:2011;25;688-695
28. D'Souza MS, Venkatesaperumal R, Ruppert S.D, Karkada S.N,Jacob D:Health Related Quality of life among Omani Men and Women with Type 2 Diabetes: Journal of Diabetes Research;2016;Article ID,8293579;pages 1-10.

29. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. Diabetes Care 2001; 24: 1069–78.
30. Paschalides C, Wearden AJ, Dunkerley R, Bundy C, Davies R, Dickens CM. The associations of anxiety, depression and personal illness representations with glycaemic control and health-related quality of life in patients with type 2 diabetes mellitus. J Psychosom Res 2004; 57: 557–64
31. Penckofer S, Ferrans CE, Velsor Friedrich B, Savoy S. The psychological impact of living with diabetes: women's day-to-day experiences. Diabetes Educ 2007; 33: 680–90.

APPENDIX 1
WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with response options. **Please choose the answer that appear most appropriate.** If you are unsure about which response to give to a question, the first response you pick is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask you that you think about your life in the last four weeks.

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pains prevent you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you think life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask how completely you experience or were able to do certain things in the last four weeks?

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

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_____

[The following table should be completed after the interview is finished]

		Equation for computing domain scores	Raw Score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
28.	**Domain 2**	$Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)$ ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a.=	b:	c:
29.	**Domain 3**	$Q20 + Q21 + Q22$ ☐ + ☐ + ☐	a.=	b:	c:
30.	**Domain 4**	$Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25$ ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a.=	b:	c: