Quality Of Life Of People With Diabetes In Benin City As Measured With WHOQOL- BREF.

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Citation

Abstract

Purpose: To assess the impact of diabetes on the health-related quality of life of Nigerians. Methods: 112 diabetic patients treated in the University of Benin teaching Hospital (UBTH) and Owen-Jackson Obaseki foundation clinic along with 81 healthy controls without diabetes were recruited. Both groups were given the World Health Organization quality of life questionnaire-short version (WHOQoL-BREF). HRQoLs were acquired to assess quality of life domains that included physical and psychological health, social relationships, and environmental domains. Means, standard deviations, and statical tests for differences were performed.Results: The mean age of patients with diabetes and the control group was 59.0 (range 31-80) and 53.0 (range31-80) respectively. Among the diabetic group 65(58%) were males while 47(42%) were females. Similarly, in the control group there were more males 44(54.3%) than females 37(45.7%). The HRQoL of patients with diabetes was lowest in the social domain. When compared with the control group the HRQoL of patients was lower in all domains except the environment domain (P=0.6478).Conclusion: This study shows diabetes impacts the lives of affected Nigerians in multiple areas and Nigerian physicians must address its social consequences.

INTRODUCTION

A report produced from the United States revealed that the major causes of death nowadays are chronic diseases [1,2,3]. It is clear that diabetes mellitus is one of the chronic non-communicable diseases that is plaguing both developed and developing countries at an alarming rate.

It is projected that the prevalence of diabetes globally will reach 380million by the year 2025 and that developing countries will be a major contributor to this increase [4,5].

Diabetes mellitus was once regarded as a disease of the affluent but is now vastly visible as a growing health problem in developing economies as almost 80% of diabetes deaths occur in low and middle income countries [5], of which Nigeria is one.

The National standardized prevalence rate of diabetes mellitus in Nigeria is 2.2%, while the crude prevalence rate is 7.4% in those aged 45 years and above who live in urban areas [6].

Diabetes mellitus is a demanding disease that affects a person's health- related quality of life, a person's ability to function and to desire satisfaction from doing so [7,8,9]. People with diabetes are constantly reminded of the disease on a daily basis, they have to eat carefully, exercise, test their blood glucose and based on the result decide when to schedule their next meal or medication. Furthermore, they often have to stop and check for symptoms of hypo or hyperglycaemia as well as deal with the fears of the possibility of complication of the disease.

Quality of life (QoL) is of central concern in evaluative research and improved quality of life is probably the most desired outcome of all healthcare policies [10]. Quality of life has been defined as a "descriptive term that refers to people's emotional, social and physical well being and their ability to function in the ordinary tasks of living" [11]. It could also mean the "degree to which a person enjoys the important possibilities of her/his life" [12], further still, quality of life has been defined as "individuals' 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 concerns" [13]. These different definitions of quality of life stem from the multi –disciplinary use of the term. Another reason is the fact that life itself is complex and its importance to every individual is highly subjective. According to Farquahar "there are four main types of definition; global, component, focused, and combinational. The global is the most commonly used in

defining quality of life. It allows for encompassing many different facets of the quality of life, however, it over generalizes and does not allow enough specificity of the major components to use it practically. The component definition attempts to break down the quality of life into specific elements in terms of dimensions and characteristics dependant on specific purposes, such as research topics and measurement for long-term project or policy. The limitation of the component approach is the reliability and validity of each component in the measure of quality of life. Focused definitions use only one or a small number of components to define the quality of life. This component approach is often used to define a very specific quality of life, such as that of a cancer patient, or one in hospice care. The drawback to this is that it is a very narrow definition and in some cases authors use it too broadly and attempt to extend it into a broader interpretation of the quality of life. The final version, the combination or hybrid, is created by combining global and component types. This includes the attendant advantages and disadvantages of both" [10].

However, there is a consensus among researchers that an individual's happiness and satisfaction with life are the two major building blocks in defining quality of life [14]. Health related quality of life (HRQoL) on the other hand include domains (aspects) of life that improve when a treatment option is successful. A clinically significant change in HRQOL is indicated by a decline in a domain that leads a physician or health care provider to alter a medication or medical treatment. HRQOL domains minimally include functional status (e.g., whether a patient is able to manage a household, use the telephone, or dress independently), mental health or emotional wellbeing (e.g., depressive symptoms, positive affect), social engagement (e.g. involvement with others, engagement in activities), and symptom states (e.g., pain, shortness of breath, fatigue). These domains represent typical outcomes in medical and social science research [15].

Numerous studies have been done to evaluate the effect of diabetes mellitus on the sufferer's quality of life in the developed world [18]. In contrast, studies relating to the health-related quality of life of patients with diabetes in developing countries are limited.

This study is therefore aimed at assessing the health related quality of life of patients with diabetes mellitus and to evaluate the impact of the disease on their physical health, social relationship, psychological health and environment, in comparison with control subjects without diabetes mellitus.

METHODS
SETTING

The study was carried out in the Consultant Out-Patient Department (COPD) in the University of Benin Teaching Hospital (UBTH) and the Owen-Jackson Obaseki Foundation Clinic both in Benin City, Edo State, Nigeria.

The University of Benin Teaching Hospital is a tertiary health care facility established on May 12th 1973 that provides health services for Edo, Delta, Ondo states and other neighboring states. The Consultant Out-Patient Department records an average turnout of 54.1 patients with diabetes on each clinic day.

Owen-Jackson Obaseki Foundation Clinic is a non-profit-making private clinic established in Benin City to assist in providing free medications for patients with diabetes, hypertension and asthma who cannot afford their medications. Other services include blood pressure and blood glucose level monitoring, as well as patient education on the diseases and their management.

The foundation is managed by 2 nurses, 1 doctor and a secretary. The clinic records an average of 20 patients daily.

SAMPLE

Consecutive consenting patients with diabetes who were diagnosed by a consultant endocrinologist were recruited as they accessed the Consultant Outpatient Clinic Pharmacy, after attending the diabetes mellitus clinic. Informed consent was duly obtained from eligible patients and then the questionnaire was administered. The questions and options were read out to those who could not read, and then explained in vernacular. The respondents were then asked to repeat their understanding of each question in vernacular to ascertain whether they correctly understood the intent of the question. Those who were educated completed the questionnaire unaided. Patients, who did not have diabetes, could not understand English Language, on admission, and those to be admitted were excluded. An average of 15 minutes was spent with each research participant. The same procedure was carried out in Owen-Jackson Obaseki foundation clinic. The data were collected from April to May, 2007. Administrative approval for the study was obtained from both health facilities.

The control group was recruited from within Ugbowo area in Benin City. This area was chosen because of its cosmopolitan nature having a large flux of people from different parts of the city who come to carry out different

daily activities in the tertiary educational and health institutions in the area. Ugbowo though an urban area is surrounded by several rural communities and therefore the sample of healthy subjects drawn from here are of different socio-economic classes very much representative of the diabetic subjects.

The questionnaire was administered using the same procedure as for the group with diabetes. Exclusion criteria for the control participants included diabetes, hypertension, ulcer, asthma, arthritis and other chronic conditions or illnesses that will predispose the participants to a poor QoL.

QUESTIONNAIRE

The instrument used is the World Health Organization quality of life questionnaire-short version (WHOQoL-BREF) of the WHOQoL-100 SCALE. This questionnaire which contains 26 items was developed with 15 international field centres to obtain an assessment tool that is applicable cross-culturally [19, 20].

The WHOQoL-BREF contains four specific domains which include: (a) physical health (seven items assessing areas such as presence of pain and discomfort; dependence on medical treatments; energy and fatigue; mobility; sleep and rest; activities of daily living; perceived working capacity); (b) psychological well being (eight items assessing areas such as affect, cognitive functions; body image and appearance; self esteem; negative affect; and spirituality), (c) social relationships (three items assessing areas such as personal relationships, social support; sexual activity), and (d) environment (eight items assessing areas such as physical safety and security; physical environment e.g. pollution, noise, traffic, climate; financial resources; Opportunities for acquiring new information and skills; participation in and opportunities for recreation/leisure activities; home environment; health and social care: accessibility and quality; transportation)

This instrument emphasizes the subjective responses of subjects rather than objective condition such as "how safe do you feel in your daily life?" and "how satisfied are you with your sex life?" A 5 point Likert-type scale rated all items for subjects. The subject selects the number that best represents their opinion, based on their life over the previous four weeks. The 5-point Likert scale ranges from 1 through 5. Higher scores indicate a better quality of life.

The raw scores for each domain of WHOQOL-BREF were calculated by adding values of single items. Raw scores were transformed on the scale ranging from 0 to 100, where 100 is the highest and 0 the lowest health related quality of life. The negatively-worded items had reversed scores.

Some limited socio-demographics (e.g. age, sex, marital status, educational level, occupation and tribe) and disease related information (e.g. duration of diabetes, type of diabetes, complications, co morbidities and pregnancy status) were included in the questionnaire.

STATISTICAL ANALYSIS

Data collected were entered into Microsoft excel and loaded into the Statistical Package for Social Sciences (SPSS) software (version 16 Chicago IL USA) for descriptive statistical analyses. Chi-square or two sided independent sample t-tests were used to compare variables across groups as appropriate using GraphPad Instat (version 3 San Diego USA.) P-values were considered significant if less than 0.05 for both groups. Cronbach's alpha, a measure of internal consistency was the internal reliability coefficient measured. It measures the extent to which the items in the instrument measure the same thing (construct). Alpha values of 0.7 -0.8 are regarded as satisfactory for comparing groups [21].

RESULTS
CHARACTERISTICS OF THE SAMPLE

Demographic information for the two groups is shown in (Table 1). There were more males in the diabetic and control groups. Diabetic patients were more often separated 6 (5.4%) and divorced 2(1.8%) compared to the control group in which there was no case of separation or divorce in marriage.

Patients with diabetes had a mean age of 59.0 years (range: 31-80 years) compared to the control group that had a slightly lower mean age of 53.52 years (range: 31-80 years). Chi-square test for trend showed a significant association between the age of both the diabetic patients and the control group. (X^2=12.74, df=4, P=0.0004)

There was no statistically significant difference in educational level between the diabetic patients and the control group. (X^2=0.644, df=1, P=0.4205). The male diabetic patients had a significantly longer duration of the disease 8.62 ⬜ 6.77 years compared to female diabetics; 5.44 ⬜ 5.22 years (p=0.0059).

Cronbach's alpha for the 26 questions for both patients with diabetes and the control group was found to be 0.797 and 0.893 respectively.

Figure 1

TABLE 1. Demographics of Diabetic patients and Control

Variable	Diabetic Patient N=112	Control N=81	Pvalue
SEX	Frequency (%)	Frequency (%)	
Female	47 (42.0)	37 (45.7)	
Male	65 (58.0)	44 (54.3)	0.660
MARITAL STATUS			
Divorced	2 (1.8)	0.0 (0.0)	0.2189
Married	103 (92.2)	79 (97.5)	
Separated	6 (5.4)	0.0 (0.0)	
Unmarried	1 (0.9)	2 (2.5)	
EDUCATIONAL LEVEL			
None / Primary	61(54.5)	38(36.90	
Secondary / Post secondary	51(55.5)	42 (63.1)	0.4205

Primary education = first 6years of education, Secondary =12 years of formal education; Postsecondary=16 years and above of formal education

EVALUATION OF THE HEALTH RELATED QUALITY OF LIFE (HRQOL)

Health-related quality of life of diabetic patients was significantly lower than that for controls in all the domains except for environment domain where there was no significant difference (P=0.6478) (Table 2).

Figure 2

Table 2. Domain scores of WHOQoL-BREF for diabetic patients and control

DOMAINS	DIABETIC PATIENT N=112	CONTROL N=81	
	Mean (S.D)	Mean (S.D)	P value
Physical Health	23.31 (4.1)	25.84 (2.61)	0.0001
Psychological Health	21.56 (3.52)	23.56 (2.38)	0.0001
Social Relationship	11.29 (2.18)	13.56 (1.75)	0.0001
Environment	30.55 (4.44)	30.88 (5.57)	0.6478

Also in the sub analysis for diabetic patients using gender as a variable, there was no significant difference in HRQOL between diabetic males and females in all the domains. Patients treated in Owen-Jackson Obaseki clinic showed no statistically significant difference in HRQOL in all the domains when compared to patients receiving treatment from UBTH, except also in the environment domain where the p-value was 0.0044 (Table 3).

Patients' complications and co morbidity did not result in any statistically significant difference in HRQoL in all the domains when compared to patients without complications and co morbidity.

Figure 3

Table 3. Domain scores for diabetic patients from Owen-Jackson clinic and UBTH

DOMAIN	OWEN-JACKSON CLINIC N=63		UBTH N=49		
	Mean (S.D)		Mean (S.D)		P value
Physical Health	23.51 (3.92)		23.06 (4.34)		0.5665
Psychological Health	21.86 (3.35)		21.18 (3.73)		0.3128
Social Relationship	11.25 (2.29)		11.33 (2.05)		0.8481
Environment	26.56 (4.76)		31.83 (3.16)		0.0044

DISCUSSION

The health-related quality of life in a cross-section of diabetic patients receiving treatment in UBTH and Owen-Jackson Obaseki clinic was studied in comparison to gender and age similar non-diabetic controls of similar age and gender distribution from the same geographical location and social-cultural environment.

We found that the overall perception of health-related quality of life in the health of patients with diabetes mellitus was lower in comparison with the non-diabetic control group. Overall, diabetic patients had a statistically significant lower mean HRQoL score in three of the four domains (Physical health, Psychological and Social relationship). This lower mean score could be attributed to the burden the disease places on them as a result of its demanding nature in management.

The social relationship domain had the lowest mean score in HRQoL of our patients. This domain assesses personal relationships, social support and sexual activity; of these three, the subjects were least satisfied with the sexual functioning component. Changes in sexual function is a common problem with aging, however, diabetes mellitus predisposes one to early onset and increased severity of these problems. Sexual dysfunction such as erectile dysfunction, impairs quality of life, and is associated with depression, increased anxiety and poor self-esteem in affected patients [22].Sexual dysfunction in diabetes affects

both male and female diabetics and this invariably affects the patient's personal relationships and family life. The low mean score in HRQoL of our patients suggests to a very large extent, a high degree of dissatisfaction to the items in this domain. This finding however differs from that of a previous study by Awadalla et al which reported no difference in the score of patients with diabetes in relation to a general population on the social relationship domain [5]. It is worthy of note that Awadalla's sample of patients with diabetes had a good level of social support in the sense that they had strong family care giver support system. It has been shown that the family is a major source of support and the stronger the family support the better the psychological adjustment of the patient to the disease [23].

The environment domain had the highest mean score (meaning better quality of life) than other domains in both diabetic participants and the control group. Both groups were affected equally. Environment domain assesses physical safety and security, financial status, the physical environment in relation to pollution, noise, traffic, climate and conditions of living place. The import of this result is that the environment affected the HRQoL of the patients with diabetes and control groups equally. One reason for this could be because the participants with diabetes in the study were in stable condition and did not require any special adjustment of the environment for normal living hence they were not more significantly adversely affected by the environment than the control group. Related studies have reported similar findings [24, 25], the authors concluded that the environmental conditions affected HRQOL of diabetic patients and controls in a similar way. However, in this same domain patients receiving treatment in UBTH had a statistically significantly higher mean score when compared with those in Owen–Jackson Obaseki clinic. This difference may have resulted from the disparity in the social status of the patients. Patients attending Owen-Jackson were more likely to be of poorer financial status and thus were also less likely to be able to afford accommodation in areas of healthy environment hence their worse perceived HRQoL score in this domain.

Several studies have demonstrated that diabetes in the presence of complications has strong negative impact on the HRQoL of patients [26, 27]. This is because diabetes complications especially macrovascular complications such as myocardial infarction, angina , stroke and heart failure can affect almost all aspects of life including mobility, usual activities and perception of health [28]. However, in our

study, presence of complications and other illnesses was not linked to poor HRQoL, a similar finding has been reported by Kolawole et al [29]. The reason for this finding in our study may be due to the fact that none of our diabetic subjects had any obvious end-stage complications which have been shown to have the greatest perceived burden on quality of life [30]. Another possible explanation is the fact that complications are less likely to have a high impact on the quality of life of older diabetics to which our sample fits than younger diabetics who invariably have less comorbidity and have not adjusted to the idea of accepting lesser health [31]. Nonetheless there is a need to validate this finding in patients with documented complications rather than patients' reported complications. It is quite possible that what our diabetic subjects perceived and reported to be complications may actually not be clinically significant.

Limitations in this study include the relatively small sample size and the failure to consult patient's medical records to confirm complications and comorbidities rather than subjects self-report which is fraught with ambiguities, exaggeration and recall bias [32, 33], may have affected the findings of this study.

The strength of this study lies in its setting in two centres that provide care for different socio- economic classes of diabetic patients. This study also adds to the limited studies which provide this type of baseline data and information on HRQoL for diabetic patients.

CONCLUSION

In this study the reported HRQoL of patients with diabetes was found to be lower than the control group in all domains except the environment domain. The social relationship domain had the worst impact on the patients and in this domain the patients were least satisfied with the component that assessed their sexual life. In order to improve the HRQoL of these patients we recommend that physicians and other care providers should thoroughly assess their patients with regard to their social relationships particularly their sexual life with a view to resolving any clinical problems they may have in these areas. Careful monitoring and tight glucose control is also recommended as this can prevent or delay complications such as sexual impotence which is a major concern of the patients. We suggest further studies to evaluate the impact of sexual dysfunction on the HRQoL of patients who have sexual dysfunction but good family and other social relationships.

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