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Diabetes and Health Related Quality of Life of Elderly Type 2 Diabetic Patients In A Tertiary Hospital In Nigeria

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ABSTRACT

Previous researches have shown that diabetes and its major complications result in patients' poor quality of life. This study aimed to evaluate health related quality of life in diabetic patients and to explore associated socio-demographic parameters that needed intervention. A cross sectional study carried out at the endocrinology clinic of Olabisi Onabanjo University Teaching Hospital had 150 elderly type2 diabetic patients aged 50years and above. Necessary information was collected from patients' files. RAND 36 health-Item questionnaire (version 1.0) was used for self-evaluation of health related quality of life. Scores were on a scale of 0-100. While 0 indicated poor, 100 indicated excellent health status. Statistical package for social sciences 16.0 was employed for statistical analysis with p value at ≤0.05. Mean age of patients was 65.8±10.0. No statistical differences between males and females except in occupation where majority (59.3%) of the females were artisans/traders. Significant higher scores in role limitations due to physical health and role limitations due to emotional problems ($p< 0.05$) were found in males when compared to females. Significant physical functioning scores were found among the singles, primary level education and those with FBS < 126mg/dl. The overall quality of health of this study group was very poor. This study reveals all the socio-demographic variables assessed needed intervention which might bring about optimal patient outcome. Educating them about their disease, counseling them on adherence to their medications and to life style modifications will be a good step in the right direction.

Keywords: Diabetes, Elderly patients, HRQOL, Associated socio-demographics.

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INTRODUCTION

Diabetes has become a global disease affecting both young and old with its huge attendant morbidity and mortality cost. According to a previous work[1] prevalence of diabetes mellitus as well as other non-communicable diseases is increasing by the day in various communities in Africa. Nigeria is one of such countries highly affected by yearly prevalence increase of diabetes disease. In sub-Saharan Africa including Nigeria, diabetes disease is predominately among the productive age group of 30 to 45 years. Diabetes in older adults has led to high mortality, reduced functional status as well as increased risk of hospitalization[2]. According to International Diabetes Federation[3], cardiovascular disease is the leading cause of morbidity and mortality in type 2 diabetic patients and coronary heart disease is the main cause of death among these patients. Earlier researchers have shown that diabetes and its major complications result in patients' poor quality of life[4,5]. Quality of life (QOL) measurement helps evaluate effects of diseases on patient's life and the ability of the patient to handle the disease. According to an earlier research[6], long standing diseases have been found to impact on many of health-related quality of life (HRQOL) domains. The aim of this study was to evaluate health related quality of life (HRQOL) in diabetes patients and to explore the associated socio-demographic parameters that needed intervention.

MATERIALS AND METHOD

Study design

This was a prospective cross sectional study carried out at the outpatient department of the endocrinology clinic of Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu, Ogun State. RAND 36 health-Item questionnaire, version 1.0[7], an instrument for self-evaluation of HRQOL was used to collect information from the patients. The questionnaire is made up of 36 items measuring eight domains of quality of life which include Physical functioning (PF), Role limitations due to physical health (RP), Role limitations due to emotional problems (RE), Energy/fatigue (EF), Emotional well-being (EW), Social functioning (SF), Pain (P) and General Health (GH). It also has an item addressing differences in present state of health in relation to the previous year. The RAND questionnaire was scored on a scale of 0-100 in such a way that 0 indicates poor health status while 100 indicates excellent health status. Current medical data such as blood pressure, fasting blood sugar, weight and height of the patients were collected from the patients' case files.

Study sample

Subjects in our study comprised 150 type 2 elderly patients aged 50years and above who volunteered to participate in the study and were assessing health care at the outpatient department of the endocrinology clinic of Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State. The objective of the study was explained to them and those who volunteered to participate were made to sign a consent form. Two research assistants were available for anyone needing help. Data such as demographic characteristics, fasting blood sugar (FBS), body mass index (BMI) and blood pressure (BP) were also included. Copies of the questionnaire were only administered to the patients after obtaining approval from the ethics committee of the hospital.

Inclusion criteria

Participants diagnosed as diabetic, should be 50years and above, must be attending the clinic during the study period, must be coherent, alert and willing to participate in the study through filling of informed consent.

Exclusion criteria

The exclusion criteria included patients who were confused or too ill to communicate, those below 50 years of age and newly diagnosed patients.

Data analysis

Statistical package for social sciences (SPSS) Version 16.0 was employed for statistical analysis. Results are presented as Mean ± SD and numbers with percentages. Chi square was used for proportions and Student T test was for comparison of means. Level of statistical significance was considered at $p < 0.05$.

RESULTS AND DISCUSSION

Baseline characteristics of diabetic patients

Females represent majority of the study population (60.7%). Mean age of the group was 65.8±10.0. There was no statistical differences between the males and females in all the groups except in the area of occupation where majority (59.3%) of the females were artisans/traders ($p< 0.05$). Majority of the patients (88.7%) were married, the highest percentage (36.7%) had primary level of education, 60.7% did not have normal FBS, 54% were either overweight or obese. Only 30.7% and 36.7% of the patients had goal systolic and diastolic blood pressure respectively. As high as 83.3% had hypertension as co-morbidity. Table 1.

Table 1: Baseline characteristics of diabetic patients

Parameters	Total, n=150(%)	Males, n=59(%)	Females, n=91(%)	P-value
Age (Years)	65.8±10.0			
50 – 59	52 (34.7)	20 (33.9)	32 (35.2)	0.528
60 – 69	47 (31.3)	16 (27.1)	31 (34.0)	
>69	51 (34.0)	23 (39.0)	28 (30.8)	
Marital status				
Single	6 (4.0)	2 (3.4)	4 (4.4)	0.094
Married	133 (88.7)	56 (94.9)	77 (84.6)	
Widow/Widower	10 (6.7)	1 (1.7)	9 (9.9)	
Divorced	1 (0.6)	- (-)	1 (1.1)	
Level of education				
No education	23 (15.3)	6 (10.2)	17 (18.7)	
Primary	55 (36.7)	18 (30.5)	37 (40.6)	0.111
Secondary	48 (32.0)	25 (42.4)	23 (25.3)	
Tertiary	24 (16.0)	10 (16.9)	14 (15.4)	
Occupation				
Top civil servant, etc	26 (17.3)	15 (25.4)	11 (12.1)	0.012
Artisan, trader	75 (50.0)	21 (35.6)	54 (59.3)	
Retired, Farmers, housewife	49 (34.7)	23 (39.0)	26 (28.6)	
FBS				
<126mg/dl	59 (39.3)	22 (37.3)	37 (40.7)	0.734
>126mg/dl	91 (60.7)	37 (62.7)	54 (59.3)	
BMI (kg/m^2)				
18.5-24.9 (normal weight)	68 (45.3)	31 (52.5)	37 (40.7)	0.181
>24.9(overweight& obese)	82 (54.7)	28 (47.5)	54 (59.3)	
SBP mmHg				
≤ 130	46 (30.7)	20 (33.9)	26 (28.6)	0.587
> 130	104 (69.3)	39 (66.1)	65 (71.4)	
DBP mmHg				
≤ 80	55 (36.7)	23 (39.0)	32 (35.2)	0.729
>80	95 (63.3)	36 (61.0)	59 (64.8)	
Co-morbidity				
Hypertension	125 (83.3)	49 (83.1)	76 (83.5)	0.784

Mean scores of HRQOL domains in different patient groups.

All the eight domains of quality of life were analyzed. The groups where the effects were assessed included age, gender, marital status, educational level and FBS. Significant higher scores in role limitations due to physical health (p=0.008) and role limitations due to emotional problems (p=0.003) were found in males when compared to females in this study. Significant physical functioning scores were found among the singles (p=0.026), primary level education (p< 0.001) and those who had FBS < 126mg/dl (p=0.002). Those with primary level education had higher scores in all the domains except in social functioning (p >0.05). Also those with FBS

level < 126mg/dl obtained higher significant scores in physical functioning, role limitations due to emotional problems, energy, emotional well-being and general health ($p < 0.05$). Age 60-69years had higher scores in limitations due to emotional problems ($p=0.002$) and general health ($p=0.001$).

Table 2: Mean scores of HRQOL domains in different patient groups.

Variables	Physical functioning	Role limitations due to PH	Role limitations due to EP	Energy/ Fatigue	Emotional well-being	Social functioning	Pain	General health
Gender								
Male	56.1±31.0	38.1±44.4	37.6±45.1	32.9±14.9	40.0±17.2	57.8±21.8	57.5±24.4	56.3±17.8
Female	54.7±26.0	25.3±37.9	23.4±38.0	30.5±11.1	37.7±12.5	58.9±20.2	61.2±23.5	55.6±18.0
P-value	0.672	**0.008**	**0.003**	0.115	0.186	0.651	0.182	0.735
Age (years)								
50-59	55.5±28.7	28.4±41.4	25.6±40.5	31.9±13.5	39.3±15.0	58.2±19.3	59.8±24.5	53.1±18.2
60-69	56.5±27.9	37.8±44.2	41.8±46.9	33.7±13.9	39.9±15.4	61.4±22.4	63.4±23.3	60.3±18.7
>69	54.2±28.2	26.0±41.2	23.5±40.7	29.7±11.7	36.7±13.4	58.6±21.7	57.8±23.0	55.3±18.0
P-value	0.760	0.058	**0.002**	0.256	0.733	0.186	0.193	**0.001**
Marital status								
Single	61.7±26.8	29.2±45.9	22.2±40.4	33.3±13.7	40.0±15.8	56.3±17.2	59.6±14.6	52.5±11.3
Married	54.5±29.0	29.9±42.1	30.6±43.2	31.8±13.5	38.5±14.7	59.5±21.8	60.0±24.1	55.9±18.8
P-value	**0.026**	0.891	0.083	0.340	0.395	0.159	0.862	0.059
Level of education								
No education	40.4±31.8	22.8±41.9	21.7±38.4	27.4±14.1	34.9±15.7	59.8±19.9	55.5±19.5	54.1±16.3
Primary	58.7±27.9	37.7±41.4	35.5±42.3	33.8±13.1	41.8±14.0	63.2±23.9	65.5±24.2	58.4±18.7
Secondary	56.7±25.1	25.0±38.6	25.0±40.4	31.9±11.9	37.8±13.6	54.7±16.2	55.6±23.4	51.0±16.8
Tertiary	58.5±27.0	31.3±43.1	29.2±44.3	29.0±11.6	36.7±15.8	54.2±20.7	58.8±26.3	61.5±17.5
P-value	**< 0.001**	**0.002**	**0.003**	**< 0.001**	**< 0.001**	0.182	**0.001**	**0.035**
<126mg/dl	61.7±27.0	33.0±43.2	36.5±45.4	34.8±13.8	41.6±14.7	61.8±19.5	59.4±23.4	57.0±16.8
>126mg/dl	51.9±28.2	29.1±41.9	26.5±41.7	30.0±12.4	37.0±14.3	58.0±21.8	60.7±23.8	55.6±19.3
P-value	**0.002**	0.428	**0.048**	**0.002**	**0.006**	0.113	0.634	0.503

Data are in mean and standard deviation. PH=physical health, EP= emotional problems

Over all, the result showed poor HRQOL of diabetes patients studied. Poor socioeconomic status arising from the age, educational level and occupation of our study population may be behind this over all poor HRQOL results obtained. This result is similar to the one found in a previous study[8]. Significant higher scores in role limitations due to physical health (p=0.008) and role limitations due to emotional problems (p=0.003) found in males when compared to females in is different from the study[8] where higher male scores in physical functioning , vitality (energy), bodily pain , mental health (emotional wellbeing) and general health of their patients were found. A previous investigation[9] found significant increase in the same domains as those of another[8] with the exception of mental health domain. Another investigation[10] however found higher male scores in all the eight domains in comparison with the females. In some previous studies[11,12], women were found to have had significant lower HRQOL scores when compared to those of men, a difference that was ascribed to the high rate of obesity in women than in men. Our results showed men with higher level of education as compared to women and a positive association between level of education and QOL has been established[13]. This may likely be an additional explanation for higher HRQOL scores seen in men. An earlier work[14] found role limitations due to emotional problems to be better in females in contrast to males in our study. The groups where we obtained better physical functioning scores which included the singles, primary level education and those who had normal FBS differed from a similar research[8] who found better physical functioning scores in males, in younger patients < 40years old and those with diabetic duration of between 5-10years. We found males and those of 60-69years old had higher role limitations due to emotional problems scores as compared to what was earlier obtained[8]. Negative association of educational level with HRQOL domains in our study is similar to that of another research[14] except in social domain indicating that lower educational levels were less affected by diabetes. One would have expected that the more the education, the more the understanding and willingness to effect health changes but this was not the case here. Some previous studies[15,16] demonstrated that higher income and educational level had higher scores on their eight HRQOL domains. Better role limitations due to EP found to be associated with older age in this study is similar to that from an earlier work[17]. Middle aged patients of our study population had higher role limitations due to EP and general health scores as compared another work[16] who found younger patients with higher scores in physical and social functioning domains. Our singles fared better than our married patients a finding dissimilar to a previous one[14] who found better scores among the married, a result he ascribed to the support from spouse

and family members. General health status in our study was associated with age rather than gender when compared with the earlier findings[8]. Normal blood sugar level was significantly associated with physical functioning, role limitations due to EP, energy and emotional wellbeing. It has been found that poorest level of HRQOL in patients is a result of many comorbid conditions. Some chronic disease that are found to be significantly associated with poor HRQOL include cardiovascular, diabetes, cancer etc[18,19]. Our study agrees with this assertion because majority of our patients had hypertension as their comorbidity.

CONCLUSION

The overall quality of health of this study group was very poor. This study revealed that all the socio-demographic variables assessed needed intervention that would bring about optimal patient outcome. All hands should be on deck to find a way to enhance or improve the quality of life of diabetic patients in this locality as well as generally. Educating the patients about their disease and counseling them on adherence to their medications as well as to life style modifications will be a good step in the right direction. In taking a decision to employ education and counseling the contribution of patients as much as possible must be sought in order to be effective and productive. A previous investigator[20] stated that the objectives of educating type 2 diabetic patients should be to optimize metabolic control, prevention of complications and improvement of quality of life as well as adoption of life style modifications. Another researcher[21] affirmed that patients who are well informed about their diseases including their treatment are likely to be more effective in the management of such diseases.

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