

*Full Length Research Paper*

# RISK OF DEPRESSION AND SUBJECTIVE QUALITY OF LIFE AMONG ATTENDEES OF A WEST AFRICAN GLAUCOMA CLINIC

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Received November 28, 2011; Accepted December 23, 2011

**Background:** Glaucoma is a common cause of blindness. Particularly in West Africa where most affected patients present late in the clinic, glaucoma is often associated with psychological complications with possible effect on quality of life.

**Methods:** The study was carried out in the glaucoma clinic of Lagos University Teaching Hospital on consenting attendees aged  $\geq 18$  years. Equal number of age and sex-matched controls with the diagnosis of cataract were also recruited into the study from the general ophthalmology clinic. The subjects and controls were assessed with Zung Self-Rating Depression Scale (SDS) and World Health Organization Quality of Life-bref (WHOQoL-bref).

**Results:** A total of one hundred subjects with glaucoma and equal number of controls were studied. The median age of the subjects was 59.0 years with near equal sex distribution, that is 51 (51%) males and 49 (49%) females. Nearly half, 49 (49%) had severe glaucoma. Forty seven (47%) had visual impairment; with 21 (21%) having blindness in one eye and 3 (3%) with blindness in both eyes. On assessment with SDS, 22 (22%) subjects and 11 (11%) controls scored  $\geq 40$ , indicating positive screen for depression. The difference was statistically significant ( $X^2=4.391$ ,  $df=1$ ,  $p=0.036$ ). From assessment with WHOQoL-bref, the overall quality of life was poor in 27 (27%) of subjects compared with 8 (8%) controls. Fifty six (56%) of subjects and eighty (80%) of controls had fair overall quality of life; and the difference was statistically significant ( $X^2=15.412$ ,  $df=2$ ,  $p=0.0001$ ).

**Conclusion:** The study showed risk of depression with overall poor quality of life in relatively greater number of subjects compared to controls. It is also noted that nearly half of the subjects presented late with severe glaucoma in the study centre. It is recommended for routine screening for early detection of glaucoma among at risk subjects; and health education for affected patients to present early for necessary management.

**Key Words:** Glaucoma; Depression; Quality of Life; West Africa.

## INTRODUCTION

Glaucoma is an important ophthalmic problem, and one of the leading causes of blindness worldwide, particularly in the West African sub-region<sup>1</sup>. It is a progressive optic

neuropathy with characteristic structural changes in the optic nerve head and functional changes in the visual field<sup>2</sup>. The risk of blindness in glaucoma makes it to have

potential for emotional problem with depression and anxiety constituting the greater percentage of co-morbid psychiatric disorders in glaucoma<sup>3,4</sup>.

In the past few decades, efforts have been directed at the systematic assessment of the extent to which chronic diseases such as glaucoma and their treatment options affect patient's functional capacity, psycho-social health and overall sense of well-being<sup>5</sup>; that is the quality of life of the individual<sup>6</sup>. Quality of life has been defined by the World Health Organization (WHO) as an individual's perception of his or her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards and concerns. It is a broad ranging concept, incorporating in a complex way the person's physical health, psychological state, level of independence, social relationship and their relationship to salient features of their environment<sup>7</sup>.

A number of studies have shown impaired quality of life in visually disabling disease of glaucoma<sup>8,9</sup>, and a number of factors are contributory to this<sup>10,11</sup>. Despite the prevalence of glaucoma in Nigeria with its associated treatment challenges in the country<sup>12,13</sup>; the paucity of data on quality of life in glaucoma subjects in the country prompted this study.

## METHODS

### Study Location and Subjects

The study was carried out at the Glaucoma clinic of the department of Ophthalmology, Lagos University Teaching Hospital (LUTH), Idi-Araba, Lagos. Lagos is the commercial capital of Nigeria in the south-western part of the country. The Glaucoma clinic runs on Tuesday of every week and it is manned by a Consultant Ophthalmologist (Glaucomatologist), Nurses, Optometrists and Resident doctors.

Attendees of the glaucoma clinic constituted the study population. The inclusion criteria to be enrolled in the study were : subjects aged 18 years and above with clinical diagnosis of glaucoma. Glaucoma is defined by pale and cupped disc on fundoscopy with or without a rise in intraocular pressure; and glaucoma severity is defined by classifying the patients into mild, moderate and severe ,that is C/D ratio of 0.1-0.5, 0.6-0.75 and >0.8 respectively. There must be no other co-occurring ocular pathology nor chronic medical illness. Equal number of age and sex-matched controls (patients with cataract) were also recruited from the ophthalmology clinic into the study. Approval for the study was obtained from Research and Ethics committee of the hospital. Furthermore, the nature of the research was explained to potential participants (subjects and controls) and informed consent obtained from each of them to be included in the study.

### Instruments and Procedure

- Socio-demographic/ Clinical Questionnaire: This was designed by the authors to elicit such information as age, sex, level of education, marital status, occupation etc. the clinical information elicited included personal rating of visual function, visual impairment,

severity of glaucoma, compliance with treatment, average cost of treatment etc.

- Zung Self-Rating Depression Scale (SDS): This is a 20-item self report questionnaire widely used to screen for depression<sup>14</sup>. Each item is rated on a Likert scale ranging from 1 to 4, that is from severity of 'none' to 'all of the time'; giving possible total score range of 20 to 80. A score of 40 and above is indicative of possible depression (positive screen for depression). The instrument has been used extensively in Nigeria<sup>15,16</sup>.

- World Health Organization Quality of Life-bref (WHOQOL-bref): It is a 26-item self-administered instrument which measures health-related quality of life. It is a short version of the 100-scale WHOQOL to assess QOL in four domains: physical health (domain 1), psychological health (domain 2), social relationship (domain 3) and environment (domain 4)<sup>7,17</sup>. Each item of WHOQOL-bref has 5 options scored on a 5 point Likert-type scale. The instrument has been used extensively in Nigeria<sup>18,19</sup>.

All the instruments are self-administered with minimum or no supervision on subjects to complete the instruments.

## RESULTS

### Socio-demographic Characteristics of Subjects

One hundred subjects with glaucoma were studied with equal number of age and sex-matched controls who had cataract. The age range of subjects was 26-84 years with median of 59.0 years. They were made up of 51 (51%) males and 49 (49%) females. Fifty four (54%) had tertiary education while 29 (29%) and 12 (12%) had secondary and primary education respectively. Forty six (46%) of the subjects were employed with regular income while 36 (36%) and 18 (18%) were retirees or unemployed respectively.

### Clinical Profiles

Almost half, 49 (49%) of subjects had severe form of glaucoma, while 32 (32%) and 19 (19%) had mild and moderate glaucoma respectively. Equal number, 74 (74%) of subjects and controls had self reported fair visual functioning. However, 23 (23%) of controls (with cataract) and 18 (18%) of glaucoma subjects had self reported poor visual functioning respectively, but of no significant difference. Following visual assessment, 47 (47%) of subjects had visual impairment with blindness in one eye 21 (21%) and 3 (3%) had blindness in both eyes. For the controls, 61 (61%) were visually impaired with 29 (29%) having low vision in both eyes and 5 completely blind in both eyes. The difference in visual impairment for subjects and controls was significant,  $p=0.02$ .

### Screening for Depression using SDS (Table 1)

The subjects and controls were screened for depression

**Table 1.** Screening for Depression Using SDS.

SDS Scores	Subjects		Controls	
	n	%	n	%
<40	78	78.0	89	89.0
≥40	22	22.0	11	11.0

$\chi^2=4.391$ ,  $df=1$ ,  $p=0.036$ .

**Table 2.** Subjective Quality of Life for Subjects and Controls.

Variable	Subjects		Controls		$\chi^2$	df	P
	n	%	n	%			
<b>Overall QoL</b>					15.412	2	0.004
Poor	27	27.0	8	8.0			
Fair	56	56.0	80	80.0			
Good	17	17.0	12	12.0			
<b>Health Satisfaction</b>					1.372	2	0.504
Poor	19	19.0	22	22.0			
Fair	73	73.0	66	66.0			
Good	8	8.0	12	12.0			
<b>QoL Domain 1</b>					2.171	2	0.338
Poor	18	18.0	11	11.0			
Fair	68	68.0	76	76.0			
Good	14		13	13.0			
<b>QoL Domain 2</b>					2.361	2	0.307
Poor	16	16.0	13	13.0			
Fair	59	59.0	78	78.0			
Good	15	15.0	9	9.0			
<b>QoL Domain 3</b>					1.151	2	0.562
Poor	15	15.0	11	11.0			
Fair	78	78.0	79	79.0			
Good	7	7.0	10	10.0			
<b>QoL Domain 4</b>					0.242	2	0.886
Poor	14	14.0	13	13.0			
Fair	71	71.0	74	74.0			
Good	15	15.0	13	13.0			

using Zung Self Depression Scale (SDS). Twenty two (22%) subjects compared with 11 (11%) controls scored  $\geq 40$  on SDS assessment, indicating positive screen for depression. The subjects' SDS scores ranged from 25-60 with a mean of  $34.91 \pm 6.82$  and the controls' score range was 20-48 with mean of  $29.74 \pm 6.33$ . the difference was statistically significant with  $\chi^2=4.391$ ,  $df=1$  and  $p=0.036$ .

#### Quality of Life of Subjects and Controls (Table 2).

The overall quality of life was poor in 27 (27.0%) of subjects compared with 8 (8.0%) of controls. Fifty six (56.0%) of subjects and 80 (80.0%) of controls had fair overall quality of life. The difference was statistically significant with  $\chi^2=15.412$ ,  $df=2$  and  $p=0.0001$ .

In the different domains of QoL: health satisfaction, physical health (domain 1), psychological health (domain 2), social relationship (domain 3) and environment (domain 4); slightly higher number of subjects compared to controls scored poorly in each domain (except health satisfaction domain). Again lesser number of subjects compared to controls scored fairly on the different domains. However, there was no statistically significant difference in the scores in each domain for subjects and controls (Table 2).

#### Quality of Life of Depressed and Non-depressed Subjects (Table 3).

The QoL was compared between subjects that screened

**Table 3.** Quality of Life Among Depressed and Non-depressed Glaucoma Subjects

Variable	Depressed (n=20)		Non-depressed (n=80)		Total (N=100)		P
	n	%	n	%	N	%	
<b>Overall QoL</b>							0.001
Poor	12	12.0	15	18.7			
Fair	8	8.0	48	60.0			
Good	0	0.0	17	21.3			
<b>Health Satisfaction</b>							0.003
Poor	9	45.0	10	12.5	19	19.0	
Fair	11	55.0	62	77.5	73	73.0	
Good	0	0.0	8	10.0	8	8.0	
<b>QoL Domain 1</b>							0.001
Poor	11	55.0	7	8.8	18	18.0	
Fair	7	25.0	61	76.2	68	68.0	
Good	2	10.0	12	15.0	14	14.0	
<b>QoL Domain 2</b>							0.001
Poor	11	55.0	5	6.3	16	16.0	
Fair	9	45.0	60	75.0	59	59.0	
Good	0	0.0	15	18.7	15	15.0	
<b>QoL Domain 3</b>							0.187
Poor	5	25.0	10	12.5	15	15.0	
Fair	15	75.0	63	78.8	78	78.0	
Good	0	0.0	7	8.7	7	7	
<b>QoL Domain 4</b>							0.001
Poor	9	45.0	5	6.3	14	14.0	
Fair	11	55.0	60	75.0	71	71.0	
Good	0	0.0	15	18.7	15	15.0	

positive for depression using SDS and those not depressed. In the overall QoL and in different domains, the depressed subjects scored very poorly compared with non-depressed subjects; and the differences were statistically significant except for domain 3, social relationship where  $p=0.187$ .

## DISCUSSION

Late presentation for orthodox care was demonstrated in this study as close to half of the subjects (49.0%) presented lately with severe form of glaucoma. This is in support of similar findings from previous studies of glaucoma patients in Nigeria<sup>12,20</sup>. Compared to controls, greater number of our subjects (with glaucoma) had positive screen for depression on SDS, that is 22 (22.0%) glaucoma patients to 11 (11.0%) of controls, with significant  $p=0.036$ . many studies in the

past have similarly demonstrated increased rate of depression among subjects with chronic medical diseases<sup>16</sup>, including glaucoma<sup>4</sup>. The increased risk of depression might be partly due to the chronicity of the illness, risk of blindness and various treatment challenges most especially treatment findings by the glaucoma patients and/or their relatives.

In our study, the overall quality of life was found to be worse in our subjects (glaucoma) compared to controls (with cataract), and the difference was statistically significant with  $p= 0.0001$ . Various studies in the past have similarly demonstrated poor quality of life in glaucoma patients<sup>9,21,22</sup>. Many factors are attributed to the relatively poor quality of life among glaucoma subjects. Some of these include the diagnosis of glaucoma itself, visual impairment, the inconvenience of glaucoma treatment, the side effects of treatment and the cost of treatment<sup>8,13</sup>. Visual impairment and cost of treatment are particularly important factors of poor quality of life in

subjects with glaucoma in Nigeria. One, there is no social insurance in the country, hence most adult citizens must work to provide for their needs or be dependent on relatives; but the high level of poverty in the country makes support from relatives to be meager and inadequate. Thus, visual impairment or at worse visual loss from glaucoma can ultimately impart very negatively on QoL<sup>13</sup>. Secondly, in Nigeria, the health care is still mostly end-user payment system; hence it is understandable why cost of treatment could impart negatively on QoL. The relatively high cost of orthodox care in Nigeria, partly contributes to late presentation of glaucoma patients for medical care and sometimes poor or non-compliance to prescribed treatment with ultimate poor QoL.

In our study, depression was also found to negatively impact on QoL of glaucoma subjects both on the overall QoL and on different domains of QoL. This is consistent with findings of poor QoL in subjects with chronic physical illnesses and co-morbid depression<sup>23,24</sup>. Similarly, glaucoma as a chronic condition when it co-morbidly occurs with depression is associated with poor quality of life<sup>25,26</sup>; as depression is known to be associated with poorer treatment outcome.

In conclusion, our study has demonstrated relatively poor quality of life in subjects with glaucoma in Nigeria. Furthermore, depression is a psychiatric complication that further worsens QoL in such subjects. Health education of subjects with glaucoma in the country (Nigeria) for early presentation to orthodox care and appropriate development of health insurance to alleviate cost of care are advocated for improved care of subjects with glaucoma.

## REFERENCES

- Béchetouille A, Arnould B, Bron A et al (2008). Measurement of health-related quality of life of patients with glaucoma: Validation of the Glau-QoL 36-item questionnaire. *Acta Ophthalmologica Scandinavica*; 86(1): 71-80.
- Bekibele CO, Gureje O (2008). Impact of self report visual impairment on quality of life in the Ibadan study of ageing. *Brit. J. Ophthalmol.* 92: 612-615.
- Bodunde OT, Daniel OJ, Onabolu OO et al (2006). Knowledge, attitudes and health beliefs of glaucoma patients in a Nigerian hospital. *Nigerian Medical Practitioner*; 50 (3&4): 62-64.
- Cypel MC, Kasahara N, Atique D et al (2004). Quality of life in patients with glaucoma who live in a developing country. *International Ophthalmology*; 25(5-6): 267-272.
- Egbert PR (2002). Glaucoma in West Africa: a neglected problem. *Brit. J. Ophthalmol.* 8: 131-132.
- Fraser S, Manvikar S. Glaucoma (2005). The pathophysiology and diagnosis. *Hospital Pharmacist*; 12: 251-254.
- Goldberg I, Clement CI, Chiang TH, Walt JG, Lee LJ, Graham S, Healy PR (2009). Assessing quality of life in patients with glaucoma using the Glaucoma Quality of Life-15 (GQL-15) questionnaire. *J. Glaucoma*; 18(1): 6-12.
- lester M, Zingirian M (2002). Quality of life in patients with early, moderate and advanced glaucoma. *Eye*; 16:44-49.
- Issa BA, Yussuf AD, Baiyewu O (2007). The association between psychiatric disorders and quality of life of patients with diabetes mellitus. *Iranian J. Psychiatr.* 2: 30-34.
- Jayawant SS, Bhosle MJ, Anderson RT, Balkrishnan R (2007). Depressive symptomatology, medication persistence and associated healthcare costs in older adults with glaucoma. *Journal of Glaucoma*, 16(6): 513-520.
- Jocobson AM, deGroot M, Samson JA (1997). The effects of psychiatric disorders and symptoms on quality of life in patients with type I and type II diabetes mellitus. *Qual Life Res*; 6: 11-20.
- Mabuchi F, Yoshimura K, Kashiwagi K et al (2008). High prevalence of anxiety and depression in patients with primary open-angle glaucoma. *J. glaucoma*; 17(7): 552-557.
- Makanjuola AB, Adeponle AB, Obembe OA (2007). A comparison of quality of life in schizophrenia and affective disorder patients in a Nigerian tertiary hospital. *Transcultural Psychiatry*; 44; 1: 65-78.
- Mbakwem AC, Aina OF (2008). Comparative study of depression in hospitalized and stable heart failure patients in an urban Nigerian teaching hospital. *General Hospital Psychiatry*; 30(5): 435-440.
- Mirjam AGS, Aaronson NK (1992). The role of healthcare providers and significant others in evaluating the quality of life of patients with chronic diseases. A review. *J. Clin. Epidemiol*; 45: 7:743-760.
- Ohaeri JU, Awadalla AW, Gado OM (2009). Subjective quality of life in a nationwide sample of Kuwaiti subjects using the short version of the WHO quality of life instrument. *Social Psychiatry and Psychiatric Epidemiology*; 44 (8): 693-701.
- Okulate GT, Jones OBE (2002). Two depression rating instruments in Nigerian patients. *Nig. Postgrad. Med. J.* 9: 74-78.
- Olusina AK, Ohaeri JU (2003). Subjective quality of life of recently discharged Nigerian psychiatric patients. *Social Psychiatry and Psychiatric Epidemiology*; 38: 707-714.
- Omoti AE, Osahon AI, Waziri-Erameh MJM (2006). Pattern of presentation of primary open-angle glaucoma in Benin-City, Nigeria. *Tropical Doctor*; 36(2): 97-100.
- Parrish RK, Gedde ST, Scott IU et al (1997). Visual function and quality of life among patients with glaucoma. *Arch Ophthalmol*; 115: 1447-1455.
- Sherwood MB, Garcia-Siekavizza A, Meltzer MI et al (1998). Glaucoma's impact on quality of life and its relation to clinical indicators. A pilot study. *Ophthalmology*; 105: 561-566.
- WHOQOL Group (1994). The development of the World Health Organization Quality of Life Assessment Instrument (the WHOQOL). In J. Orley and W. Kuykan (Eds). *Quality of life assessment: International perspectives*. Heidelberg: Springer-Verlag.
- WHOQOL Group (1998). The World Health Organization Quality of Life (WHOQOL) assessment: development and general psychometric properties. *Social science and Medicine*; 46: 1569-1583.
- Zung WWR (1965). A self rating depression scale. *Archive of General Psychiatry*; 12: 63-70.

