

QUALITY OF LIFE OF GLAUCOMA PATIENTS IN THE UNIVERSITY OF BENIN TEACHING HOSPITAL, BENIN CITY

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ABSTRACT

Aim: To determine the quality of life of primary open angle glaucoma patients in the Eye Clinic of the University of Benin Teaching Hospital, Benin City, Edo state, Nigeria.

Methods: This was a prospective study which was carried out among glaucoma patients in the Eye Clinic of the University of Benin Teaching Hospital. All glaucoma patients presenting for the first time in the hospital eye clinic over a one year period were enrolled in the study. Data was obtained using an interviewer administered questionnaire encompassing quality of life questions derived from the GQL15 and VFQ 25 instruments. Data analysis was done using the Statistical Package for Social Sciences (SPSS) version 17.

Results: Two thousand and twenty three (2,023) new patients were seen in the eye clinic within the study period and One hundred and sixty eight of the patients in this study had Primary Open Angle Glaucoma (POAG). The quality of life scores in glaucoma patients was 53.58(±19.3) as opposed to 88.8 (±3.7) in controls using the National Eye Institute Visual Function Questionnaire (NEI VFQ) and 50.51(±21.77) in glaucoma patients and 96.8 (±2.8) in controls with the Glaucoma Quality of Life GQL questionnaire. This is statistically significant in both analysis, though the GQL is more specific for glaucoma. The subscales for mental health, peripheral vision, general vision and role limitation were lowest in this study probably because over 60% of the patients have severe/advanced glaucoma

Conclusion: Quality of life was significantly lower in glaucoma patients than in age and sex matched controls. Glaucoma is a cause of significant morbidity affecting all aspects of the life of its sufferers and this has to be addressed urgently.

Keywords: Primary Open Angle Glaucoma, quality of life, role limitation

INTRODUCTION

The aim of glaucoma treatment is to improve the quality of life of glaucoma patients. The World Health Organization has defined health as a state of physical, mental and social well-being, not

merely the absence of disease or infirmity.¹ Quality of life (QoL) was defined by the World Health Organization Quality of Life (WHOQoL) group, as 'an individual's overall satisfaction with life, and one's general sense of personal wellbeing'.² It is a broad concept that is affected in a complex way by the person's physical health, psychological state, level of independence, social relationships and their relationship with salient features of their environment.² The concept is multidimensional. Spilker suggested a QoL model with three levels,

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the first of which corresponds to the overall assessment of QoL as a subjective sense of well-being in the individual.³

The second level comprises three main domains concerning the functional, psychological and social functioning that are necessary to achieve the satisfaction and sense of wellbeing mentioned above. The third level corresponds to specific aspects of each of these domains (for example, measures of anxiety or depression specific to the psychological functioning domain). Health-related Quality of Life (HR QoL) reflects an attempt to restrict the complex concept of QoL to aspects specifically related to a person's health that may respond to health care.⁴ It has been reported that approximately 67 million patients suffer from glaucoma and roughly 10% of these are blind. It is therefore not surprising that glaucoma frequently has a large impact on a patient's quality of life.⁵

Glaucoma patients can have a poor quality of life for several reasons: the diagnosis itself could result in a fear of blindness associated with anxiety and depression, the insidious loss of vision which affects activities of daily living, the inconvenience of the lifelong treatment and follow up visits to the hospital, the side effects and the cost of the treatment.¹⁹ Blindness and visual impairment also has a significant effect on people's lives as was seen in a study by Bekibele and Gureje in Ibadan though their study was about quality of life in the elderly.⁶

QoL in patients with ocular disease can be measured by using generic instruments designed for examining overall health like the Medical Outcomes Study Short Form-36. Generic instruments are however nonspecific. Vision-directed instruments for QoL are available. Examples include the National Eye Institute Visual Function Questionnaire (NEI-VFQ-25) and the Visual Function-14 (VF-14) questionnaire. These are more specific to vision though they were initially designed for patients with cataracts. Glaucoma specific instruments like the Glaucoma Symptom Scale (GSS), Glaucoma Health

Perceptions index (GHPI) Glaucoma Quality of Life-15 (GQL-15) can also be used.

This study examines the psychosocial aspects which include associations of visual impairment/blindness and quality of life in glaucoma among new patients presenting in the University of Benin Teaching Hospital (UBTH), Benin City. It takes into account that the glaucoma patient is a whole person with perceptions about life and the disease.

Methods

This is a prospective study done in the Eye clinic of the University of Benin Teaching Hospital in which all the patients diagnosed with primary open angle glaucoma over a one year period were selected. Ethical approval for the study was obtained from the Ethical Review Board of the University of Benin Teaching Hospital. A written individual informed consent was also obtained from every patient and control enrolled in the study.

Subsequently consecutive patients with POAG who met the selection criteria were selected. They were one hundred and forty eight (148) in number. These were recruited for the Quality of Life study. Quality of life was done in only POAG patients because

1. It is the most common type of glaucoma in our environment.
2. It is a chronic disease requiring lifelong management unlike secondary glaucoma some of which can be cured by removing the cause.
3. Children with congenital glaucoma and some with juvenile glaucoma are too young to describe the impact the disease has on their lives

One hundred and forty eight (148) age and sex matched controls were recruited from relatives who accompanied other patients (without glaucoma) to the hospital.

Inclusion criteria for Quality of Life in Glaucoma study

1. All patients with POAG presenting to the eye clinic for the first time during the study period.
2. Patients who gave consent to participate in the study and completed all investigations.
3. No surgery within 3 months of study as recent surgery might impact the person's perception of quality of life.

Exclusion criteria for quality of life study

1. Patients with associated retinal diseases causing field defects for example retinitis pigmentosa
2. Patients with macula disease severe enough to impair central vision
3. Patients with visually significant cataracts.
4. Glaucoma suspects

Twenty (20) patients did not complete investigations and had to be excluded. Thus 148 patients with POAG and 148 controls were assessed for quality of life in glaucoma.

A detailed history was obtained including relevant demographic data, educational and socioeconomic status, presenting complaints and duration of symptoms and type of care obtained initially. Visual acuity was measured using the Snellen's chart and illiterate E chart and where vision was too poor by hand movement and light perception. This was carried out by the optometrist. It was done separately for each eye at a distance of 6 meters first unaided and then with pinhole. The patients that had refractive errors were then refracted and issued spectacles. Visual acuity was converted to Logmar acuity for easy analysis. Refraction was carried out manually with a Welch–Allyn retinoscope and subjective refractions were carried out and refined to get the best corrected vision. Spectacles were prescribed.

A pen torch was used to examine eyelids and assess pupillary responses. This was followed by anterior segment examination with Haag-Streit slit lamp biomicroscope which was done to identify ocular abnormalities and estimate anterior chamber depth by Van Herrick method. Tonometry was done with a Goldman applanation tonometer mounted on Haag-Streit slit lamp biomicroscope. Gonioscopy was done with a Goldman 2 mirror gonioilens. Disc assessment was by binocular ophthalmoscopy using a +78D lens and Haag-Streit slit lamp biomicroscope after dilatation with combination of tropicamide and phenylephrine. Central visual fields were assessed using a Dicon Automated perimeter. Contrast sensitivity was assessed using Pelli Robinson chart. It usually took at least two clinic visits to complete all investigations.

An interviewer administered questionnaire encompassing quality of life questions derived from the GQL15 and VFQ 25 instruments, biodata at the 3 month follow up visit after all investigations were complete. The quality of life questionnaire included questions concerning activities of daily living, general health, mobility, social activities and mental health. The scores within each subsection were calculated using scores assigned in the questionnaire and converted to percentages. All subsections were added up and divided by the number of sections to give the final score. The score ranged from 0 to 100 with higher scores indicating better quality of life. See Appendix I for questionnaire. The questionnaire was administered by the researcher and two nurses who were trained on how to administer the questionnaire and well versed in the local languages.

The questionnaire had been pretested on glaucoma patients in a private eye clinic in Benin City and was modified to correct deficiencies noted.

RESULTS

For the study on quality of life only primary open angle glaucoma patients who met the inclusion criteria were included. They were one hundred and

forty eight in number. One hundred and forty eight age and sex matched controls were also examined.

TABLE 1: COMPARISONS OF FINAL AND SUBSCALE NEI VFQ SCORES BETWEEN CASES AND CONTROL.

	CASE SCORE	QoL	CONTROL QoL SCORE	P VALUE
NEI VFQ 25	53.58 (±19.3)		88.8 (±3.7)	<0.001
GEN HEALTH	58.55(±18.7)		86.7 (±14.7)	<0.001
GEN VISION	43.6 (±22.8)		97.2 (±7)	<0.001
OCULAR PAIN	57 (±22)		80 (±5.2)	<0.001
NEAR ACTIVITIES	54.54(±22.4)		86.6 (±9.6)	<0.001
DISTANT VISION	48.7 (±25.4)		84.8 (±10.6)	<0.001
DEPENDENCY	52.9 (±30.4)		97.8 (±4.6)	<0.001
ROLE LIMIT	46.8(±28.6)		100 (±0)	<0.001
SOCIAL FXN	52.7 (±26.4)		89.6 (±10.1)	<0.001
DRIVING	64 (±28)		90 (±6)	<0.001
PERIPHERAL VISION	43.5 (±25.4)		90.7 (±3.8)	<0.001
COLOUR VISION	84 (±24)		100 (±0)	<0.001
MENTAL HEALTH	39.34(±22.6)		78.8(±3.2)	<0.001

The control group had statistically significant higher QoL scores than POAG patients in all the subscales of the NEI VFQ 25, general health, vision related parameters and mental health with p <0.001 in all items tested (Table 1).

TABLE 2: A COMPARISON OF FINAL AND SUBSCALE GQL VFQ SCORES BETWEEN CASES AND CONTROL

	CASE SCORE	QoL	CONTROL QoL SCORE	P VALUE
GQL SCORE	50.51(±21.77)		96.8 (±2.8)	<0.001
CENTRAL VISION	54.4(±25.3)		100(±0)	<0.001
PERIPHERAL VISION	47.8(±26.1)		100(±0)	<0.001
GLARE	48.3(±15.3)		88.1(±10)	<0.001
OUTDOOR MOBILITY	51.3(±34)		99.3(±3.8)	<0.001

The difference in QoL and Visual acuity between glaucoma patients and controls was significant with a p value <0.001 with both scoring systems but the difference was more marked with the GQL scoring (Table 2). Controls had better QoL scores. There was no significant difference in demographic variables between the glaucoma patients and controls.

TABLE 3: SEVERITY OF GLAUCOMA COMPARED WITH QoL SCORES

SEVERITY	FREQUENCY	GQL SCORE	VFQ SCORE
MILD	31(20.8%)	67(±22.2)	69.2(±17.7)
MODERATE	28(18.8%)	55.5(±14.9)	60.2(±14.0)
SEVERE	90(60.6%)	42.8(±15.2)	45.3(±16.2)
ANOVA P VALUE		<0.001.	<0.001.

TABLE 4: COMPARISON OF QOL SCORES AMONG PATIENTS ASCCORDING TO AGE GROUP AND EDUCATION

	FREQUENCY	VFQ SCORE (SD)	P VALUE
AGE GROUP			
40-49	32	63.9(18.9)	< 0.001.
50-59	24	55.5(18.4)	
60-69	38	49.5(15.7)	
70-79	40	45.7(16.1)	
>80	14	38.7(12.7)	
EDUCATION			
None and Pry	90	52.1(23.2)	0.031
Secondary and above	58	60.2(18.4)	

QoL scores became progressively worse across groups of mild moderate and severe glaucoma. ANOVA p value <0.001 (Table 3).

Older age groups and worse visual acuity had lower QoL scores (Table 4). This was statistically significant with p value < 0.001. People with secondary school and post-secondary education displayed better QoL scores than those with primary or no education (Table 4). This was significant with p value = 0.031.

Females had higher QoL values than males. This was not statistically significant p value 0.083. QoL of life of patients who gave a history of systemic diseases like hypertension or diabetes in addition to glaucoma were not significantly different from patients who had only glaucoma p value = 0.43.

There was a statistically significant negative correlation between glaucoma QoL scores and visual acuity, visual field loss and age group, $p < 0.001$ in all the clinical parameters (Table 5). Quality of life also declined with visual acuity, increasing severity of visual field loss and age. There was however a statistically significant positive correlation with contrast sensitivity, $p < 0.001$. Quality of life was higher in those with better education but this was not statistically significant, $p > 0.05$.

Table 5: CORRELATION OF GQL SCORES WITH CLINICAL PARAMETERS AND AGE

	CORRELATION CO- EFFICIENT	P value
VISUAL ACUITY	-0.658	< 0.001.
FIELD SEVERITY	-0.379	< 0.001.
AGE GROUP	-0.411	< 0.001.
CONTRAST SENSITIVITY	0.39	< 0.001.
EDUCATION	0.150	0.072

DISCUSSION

Quality of life scores were significantly worse in glaucoma patients compared to controls and were worse in patients with severe glaucoma compared to moderate compared to mild. This is in keeping with earlier studies.^{7,8} Patients with mild /early glaucoma had worse scores than control showing that quality of life is affected even in the early stages of disease even before blindness occurs. Apart from symptoms of glare which they exhibited, the patients were worried about their vision, specifically the possibility that they would eventually become blind. Quality of life also declined with age and was higher in those with better education. This was in keeping with results obtained in the Lagos, India and Mexico.^{9,10,11} The decline of quality of life is not surprising as glaucoma and ocular diseases leading to blindness is more prevalent in older age groups. Systemic diseases like hypertension and osteoarthritis are also more prevalent.

People who completed secondary school education or higher institutions of learning had significantly better QoL scores than those with just primary school and below. This finding agrees with the study done in Lagos.⁹ This could be due to a better understanding of the disease process and the ability to seek care in the right places thus reducing the effect of the disease on their lives.

The subscales which had the lowest value among all glaucoma patients in this study was mental

health showing that glaucoma has a huge impact on the psychological health of its sufferers.^{12,13} The Aravind QoL study also reported a significant decrease in the psychosocial domain of glaucoma patients even though most of them were not on medication at the time.¹⁰ Other subscales decreased in this study include peripheral vision, general vision and role limitation. This is probably because a high proportion of our patients (60.6%) presented with advanced visual field changes which tend to affect these subscales.^{14,15}

GQL scores correlated significantly with visual acuity, field loss severity and age. This is in keeping with several studies.^{9,16,17} Females had better QoL scores than males though this was not statistically significant. Effect of gender on QoL differs in different studies.^{9,14, 18}

Systemic co morbidities did not significantly decrease the QoL of glaucoma patients. This agrees with some studies.¹⁰ This was a bit surprising but the patients have probably considered all the illness as one package of ill health and do not necessarily differentiate the discomforts caused by one illness from the other.

In conclusion, Quality of life was significantly lower in glaucoma patients than in age and sex matched controls. The subscales for mental health, peripheral vision, general vision and role limitation were lowest in this study probably because over 60% of the patients have severe/advanced glaucoma.

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