

Self-Reported Quality of Life among Primary Open Angle Glaucoma Patients at the Guinness Eye Center Onitsha, Nigeria

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Citation: Ezenwa AC, Nwosu SNN (2020) Self-Reported Quality of Life among Primary Open Angle Glaucoma Patients at the Guinness Eye Center Onitsha, Nigeria. Health Sci J. 14 No. 4: 727.

Abstract

Objective: To evaluate the quality of life of newly diagnosed Primary Open Angle Glaucoma (POAG) patients at Guinness Eye Centre, Onitsha.

Materials and method: The quality of life amongst newly diagnosed POAG patient's aged ≥ 40 years was assessed with the National Eye Institute Visual Function Questionnaire 25 (NEI VFQ-25) questionnaire. Also obtained was information on the patients' sociodemographic characteristics.

Result: A total of 207 new POAG patients, aged 40 to 92 years (mean age of 61.0) responded. There were 95 males (45.9%) with 100 (48.3%) less than 60 years of age. These patients had a mean quality of life score of 66.6 ± 27.1 SD; and general vision had the least subscale score (40.6 ± 23.4 SD) while ocular pain subscale had the highest score (84.2 ± 20.6 SD). The mean quality of life score for males and females were 63.5 ± 29.3 SD and 69.2 ± 25.0 SD respectively; while the mean quality of life scores for age group < 60 years and ≥ 60 years were 73.0 ± 26.5 and 60.6 ± 30.0 SD respectively.

Conclusion: There was no difference in quality of life scores among gender ($p=0.1$). However quality of life scores were lower in patients ≥ 60 years ($p=0.001$), rural dwellers ($p=0.002$), dependents ($p=0.001$) and those with non-formal education ($p=0.001$). Patients in this study report a moderate quality of life score. Likely factors that may be responsible for reduction in quality of life should be explored in this group.

Keywords: Quality of life; Primary open angle glaucoma; National eye institute visual function questionnaire 25 (NEI VFQ-25)

Received with Revision June 05, 2020, Accepted: June 25, 2020, Published: June 30, 2020

Introduction

Glaucoma is a group of ocular disorders sharing a clinical phenotype, characterized primarily by a bilateral, progressive degeneration of the optic nerve [1]. Glaucoma can degrade quality of life for several reasons including reduction in vision (decreased visual fields and visual acuity); the psychological effects of diagnosis (especially fear of blindness), potential side effects of treatment and financial cost of hospital visits and therapy [2]. Person's blind from glaucoma usually have lower quality of life scores when compared to those blind from cataract [3].

The impact of glaucoma on the patient's well-being can be evaluated through an assessment on the quality of life [4]. The World Health Organization defined quality of life as "an individual's perception of his/her 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 [5].

Quality of life is evaluated through several instruments including self-report questionnaires and performance-based measure of visual disability [6]. In vision-specific self-report questionnaires, the individual with glaucoma describes how he or she uses vision to carry out daily activities. The National Eye Institute Visual Function Questionnaire (NEI VFQ-25) [7] is a widely used tool in evaluating quality of life. It is designed to capture the impact of visual problems on physical functioning, emotional wellbeing and social functioning [7].

This present study seeks to evaluate the quality of life of newly diagnosed POAG patients at Guinness Eye Center Onitsha using the 25-item National Eye Institute visual functioning (NEI VFQ-25) questionnaire.

Materials and Method

Consecutive newly diagnosed primary open angle glaucoma patients whose diagnoses were first made at the specialist clinic of Guinness Eye Center Onitsha from March to October 2012, and who met the inclusion criteria were recruited. The inclusion criteria were:

- (a) Adults \geq 40 years
- (b) Diagnosed of POAG within 6 months of this study
- (c) On medical therapy
- (d) With no incisional glaucoma or cataract surgery
- (e) Has less than stage 2 of Lens Opacity Classification III (LOCSIII) [8].

Approval for the study were obtained from Ethical and Research Committee of Nnamdi Azikiwe University Teaching Hospital, Nnewi and National Postgraduate Medical College of Nigeria.

Written informed consent was obtained from each patient after proper explanation of the nature and study objectives. Each selected patient completed: (1) Questionnaire seeking information on socio-demographic characteristics, ocular health. (2) NEI VFQ-25 questionnaire and the questionnaire was completed within 7 minutes.

The data generated were entered into the Statistical Package for Social Science (SPSS) version 16 software and analyzed. Patients' ages in this present study were grouped into two: <60 years and ≥ 60 years; because 60 years is the cut off age for retirement from active services in Nigeria [9]. Glaucoma was classified into 5 stages using Aulhorn and Karmeyer visual field staging [10] for the Optopol PTS 910 perimeter.

Evaluations of group differences for gender, age groups and glaucoma stages were done using t-test and analysis of variance (ANOVA) for continuous variables. Chi-square test was used for the analysis of categorical data. A p -value <0.05 was considered statistically significant.

Results

The mean age of patients in this present study was 61.0 ± 11.4 SD (range of 40-92 years). Patients <60 years were 100(48.3%) and those ≥ 60 years were 107(51.7%); males were 95(45.9%) and females 112 (54.1%). One hundred and forty three (69.1%) patients had at least primary school education with 32 (15.5%) attaining tertiary level of education. Male gender had higher educational attainment ($p=0.03$) There was no statistical difference in occupation among the male and female patients ($p=0.3$) There were slightly more urban residents compared to rural residents (55.1% vs. 44.9%) in the present study. There was no significant difference in place of abode between male and female patients ($p=0.64$). However, older patients' (≥ 60 years) were more likely to dwell in rural areas ($p<0.001$).

The presenting visual acuity in the better eyes of the patients using WHO ICD 10 classification is shown in **Table 1**.

The mean quality of life score for patients in this study was 66.6 ± 27.1 SD with range, 1.5-100. The mean quality of life score for

males were 63.5 ± 29.3 SD; range, 1.5-100. The mean score of females were 69.2 ± 25.0 SD; range, 6.3-98.2. The difference in mean for both gender was not significant statistically ($p=0.1$). The mean quality of life scores for age group <60 years was 73.0 ± 26.5 and ≥ 60 years was 60.6 ± 30.0 SD. The mean difference was statistically significant. ($p=0.001$). The mean quality of life score of urban residents was 71.7 ± 26.1 SD; range of 4.6 – 100. The rural residents had a mean quality of life score of 60.3 ± 27.1 SD; range of 1.52-96. The mean difference was statistically significant ($p<0.002$). The analysis of variance (ANOVA) indicate significant difference in the quality of life scores among occupational status ($p<0.001$), and among levels of education ($p < 0.001$). **Table 2** shows the mean scores for the different subscales of patients in this study.

The mean quality of life scores for the different stages of glaucoma are severity of the shown in **Table 3**. Statistical test shows that quality of life degrades with increasing glaucoma severity ($F=62.6$, $df=206$, $p<0.001$). The age group ≥ 60 years had 89 (64.5%) out the 138 patients in the late stages of the disease (stage 3-5). The younger age groups <60 years when compared with ≥ 60 years had better scores in all subscales which was significant; except for

Table 1 Presenting Visual acuity (Better eye).

Category	No	%
0: Mild or no visual impairment	96	46.4
1: Moderate visual impairment	54	26.1
2: Severe visual impairment	25	12.1
3: Blindness	18	8.7
4: Blindness	11	5.3
5: Blindness	3	1.4
Total	207	100

Table 2 Mean subscale scores of NEI VFQ-25.

Subscales of NEI VFQ -25	Mean Scores \pm SD
General health	50.9 \pm 24.2
General vision	40.6 \pm 23.4
Ocular pains	84.2 \pm 20.6
Near activities	65.2 \pm 20.5
Distance activities	66.1 \pm 33.7
Vision specific	
Social function	72.9 \pm 35.3
Mental health	65.5 \pm 32.7
Dependency	68.8 \pm 30.1
Driving*	51.8 \pm 42.8
Colour vision	80.7 \pm 32.7
Peripheral vision	65.6 \pm 33.9

*60 persons were either driving or had driven in the previous three months. They were 36 patients <60 years and 24 patient's ≥ 60 years.

Table 3 Mean quality in life scores of glaucoma stages.

Stages	No (%)	Mean score
1	42 (20.3)	89.2 \pm 6.7
2	27 (13.0)	81.0 \pm 16.3
3	37 (17.9)	77.2 \pm 21.4
4	45 (21.7)	66.2 \pm 19.5
5	56 (27.1)	35.9 \pm 21.5
Total	207 (100.0)	66.6 \pm 27.1

Table 4 Subscale scores of NEI VFQ-25 among age groups <60 years and ≥ 60 years.

Characteristics	< 60 years (N = 100)	≥ 60 years (N = 107)	t-test score	df	p value
General Health	55.8 ± 24.9	46.2 ± 22.7	2.9	205	<0.001
General vision	45.8 ± 25.8	35.8 ± 19.9	3.1	205	<0.001
Ocular pain	84.4 ± 21.1	83.9 ± 20.1	0.2	205	<0.001
Near Activities	75.8 ± 31.3	55.4 ± 32.7	4.6	205	<0.001
Distance Activities	75.9 ± 32.1	57.0 ± 32.8	4.1	205	<0.001
Social function	80.6 ± 33.5	65.7 ± 35.4	3.1	205	0.002
Mental Health	64.7 ± 32.21	60.5 ± 33.2	0.9	205	0.4**
Role difficulties	71.9 ± 38.1	58.6 ± 39.3	2.4	205	0.01
Dependency	75.9 ± 37.0	62.2 ± 38.1	2.6	205	0.01
Driving*	69.0 ± 37.8	25.9 ± 36.9	4.3	58	<0.001
Colour vision	85.4 ± 29.5	76.4 ± 35.0	1.9	205	0.05
Peripheral vision	71.2 ± 32.6	60.3 ± 34.3	2.3	205	0.02

** Not significant.

mental health in which the mean difference was not significant. **Table 4** shows the subscale scores for the 2 different age groups. The t-test showed no significant gender difference ($P>0.05$) in all the subscales of the 25 item visual function questionnaire.

Discussion

Quality of life is the sum of a range of objectively measurable life conditions experience by an individual [11]. A similar quality of life scores of 68.17 and 69.21 were reported by Guedes et al. [12] in Brazil and Wu et al. [13] in China respectively compare with 66.6 in this present study. However, the quality of life score in the present study was less than 85.2 obtained in by Onakoya et al. [14] and 88.8 by EMGTS in newly diagnosed glaucoma patients [15]. The difference in ages of patients recruited may explain the disparate in scores. In this present study, there were older patients with more advanced glaucomatous damage. Late presentation with advance disease was observed by Nwosu [16] in our hospital more than two decades ago. Enock et al. [17] and Omoti et al. [18] observed late presentation with advanced disease by new glaucoma patients. The disease knowledge is also low among patients in our clinic [19] and this may explain late presentation with advanced disease in the present study. Patients' perspective of glaucoma and presentation with advanced disease was the explanation suggested by Guedes et al. [12] for the moderate scores in their patients.

Quality of life is impaired in patients with glaucoma and this alteration is greater in advanced stages of the disease [20], and older patients are more likely to present with advanced disease [21]. There was a decrease in quality of life with worsening of visual field and increasing age amongst glaucoma patients in this present study. The decrease in quality of life with worsening visual fields were also documented by Onakoya et al. [14] Nelson et al. [22] and Lester et al. [23] Onakoya et al. [14], Labris et al. [24] and EMGTS [15] reported lower quality of life as age increases. The older age group in this present study had more dependents, lower educational status, more advanced disease and lower quality of life scores. Omoti et al. [18] observed newly diagnosed patients with advance disease had lower socioeconomic class and lower educational status. There was no statistical difference in quality of life scores between males and females in this present study.

This finding compares with Wu et al. [13] who found no statistical difference for patients' gender.

The least sub-scale scores were on general vision ($40.6 \pm 23.4SD$), general health ($50.9 \pm 24.1SD$) and driving ($51.8 \pm 42.8SD$) in the present study. Onakoya et al. [14] had low scores in the above three subscales, with driving being the least. General health, general vision and driving may be more bothersome for glaucoma patients in Nigeria. Wu et al. [13] also reported low scores on general health and general vision subscale scores. However they emphasized on general health and general vision as two dimensions that are significantly related to vision – related quality of life for patients with glaucoma in various regions and ethnicity [13].

From those who drive, 52% of them no longer drive at night. The difficulties with driving at night could explain the cessation of night driving in the present study. The problems of darkness and glare are a frequent complaint of glaucoma patients noted by Onakoya et al. [14] and Aspinall et al. [25] Nelson et al. [22] observed that some patients stopped driving at night due to problems of glare. In the present study, slightly more women (55%) and older persons (70%) had stopped driving. This finding agrees with the observation by Gilhotra et al. [26] that older persons and women were more likely to stop driving from impairment of visual parameters.

There was no significant difference in the mental health subscales of the 2 different age groups despite the older age group having more advanced glaucoma. Mental health and quality of life are important issues for patients with glaucoma [27].

Conclusion

In conclusion, glaucoma patients in the present study reported a moderate level in their quality of life. The mean quality of life scores of newly diagnosed glaucoma patients in this present study decreased with increasing disease severity, increasing age, lower socio-demographic status and lower educational attainment. To reduce the burden of glaucoma on quality of life, we recommended actions such as creation of more awareness, health education, opportunistic screening and economic empowerment that would reduce late presentation.

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