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# ASSESSMENT OF QUALITY OF LIFE IN PRIMARY OPEN ANGLE GLAUCOMA PATIENTS: A CASE-CONTROL STUDY.

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**Abstract**
Aim: to evaluate quality of life in primary open angle glaucoma patients using a standard questionnaire.
Material and methods: The present prospective case-control study was conducted in the department of Ophthalmology, Patna Medical College and Hospital, Patna, Bihar, India. The study included 200 subjects who were divided into (case group n=100) and (control group n=100). Quality of life was assessed using Glaucoma Quality Of Life-15 Questionnaire (GQOL-15).
Results: Mean age of patients in case group (n=100) and control group (n=100) was 57.97 years, and 57.84 years respectively. Overall QOL score was significantly between the two groups (p<0001). QOL score increases as the Glaucoma Severity score increases.
Conclusion: QOL of patients with glaucoma was found poor as compared to control group. It showed a clear trend of worsening QOL scores with increasing severity of disease.
**Keywords:** Glaucoma, Quality of life, QOL-15

## Introduction

Glaucoma is a highly prevalent disease with more than 60 million cases worldwide and is expected to increase to 80 million by 2020. In India, the estimated number is approximately 12 million, around one fifth of total global burden.[1]

The term glaucoma embraces composite congeneries of pathological conditions which have the common feature that their clinical manifestations are to a greater or lesser extent dominated by the value of intraocular pressure (IOP) and its consequeces. Cupping of the optic disc is pathological rather than physiological is of great importance in the diagnosis of open angle glaucoma. Glaucoma is a progressive optic neuropathy with characteristic structural damage that is frequently accompanied by a specific type of visual field defect.[2,3] The presence and course of glaucoma are generally assessed by means of optic disc evaluation and visual field tests.

Quality of life is a reflection of a person's overall well-being i.e. their ability to pursue a happy and fulfilled life. It includes dimensions of physical ability, mental health, general health perception, social functioning and independence. Glaucoma affects patient's quality of life in several ways starting from psychological impact at the time of diagnosis to visual disabilities related to progression of glaucoma to potential side effects of medical and surgical treatment and financial constraints due to cost of therapy.[4] Hence, the present study was conducted to evaluate quality of life in primary open angle glaucoma patients using a standard questionnaire.

## Materials and Methods

The present prospective case control study was conducted on 200 randomly selected patients visited the department of Ophthalmology, Patna Medical College and Hospital, Patna, Bihar, India.

Inclusion Criteria:

1. Diagnosed cases of Primary Open Angle Glaucoma
2. Those who give informed consent

Exclusion Criteria

1. Patients with diabetes mellitus.
2. Patients with cataract.
3. Patients with high myopia (>6diopters).
4. Patients with corneal opacities.
5. Patients with secondary causes of glaucoma.
6. Patients with ocular morbidity affecting vision.

## Ethical approval and Informed consent

The study protocol was reviewed by the Ethical Committee of the Hospital and granted ethical clearance. After explaining the purpose and details of the study, a written informed consent was obtained.

## Sample selection

The sample size was calculated using a prior type of power analysis by G* Power Software Version 3.0.1.0 (Franz Faul, Universitat Kiel, Germany). The minimum sample size was

calculated, following these input conditions: power of 0.80 and $P \leq 0.05$ and sample size arrived were 94 participants in each group. The final sample achieved was 100 per group.

**Methodology**

Quality of life was assessed using Glaucoma Quality Of Life-15 Questionnaire (GQOL-15).[5] It is a 4-domain tool that is short and easy to use. The instrument is based on the premise that perceived visual disability (dark adaptation, glare, outdoor mobility tasks, and activities using peripheral vision

After taking detailed history and recording demographic data, a comprehensive clinical examination of each patient was done. Severity of glaucoma was graded into mild, moderate, severe and advanced based upon the field changes.

**Statistical Analysis**

The data was coded and entered into Microsoft Excel spreadsheet. Analysis was done using SPSS version 20 (IBM SPSS Statistics Inc., Chicago, Illinois, USA) Windows software program. The variables were assessed for normality using the Kolmogorov Smirnov test. Descriptive statistics included computation of percentages, means and standard deviations. The independent t test (for quantitative data within two groups) was used for quantitative data comparison of all clinical indicators. Chi-square test used for qualitative data whenever two or more than two groups were used to compare. Level of significance was set at p≤0.05.

**Results**

**Table 1:** Mean age of the study population

| Group | Mean | Std. Dev | p-value |
|---|---|---|---|
| Case | 57.97 | 7.05 | 0.641 (NS) |
| Control | 57.84 | 6.18 | |

**Table 2:** gender distribution among groups

| Group | Gender | | Total |
|---|---|---|---|
| | Female | Male | |
| Case | 37 | 63 | 100 |
| Control | 35 | 65 | 100 |
| Total | 72 | 128 | 200 |
| p-value | 0.181 | | |

**Table 3:** Mean comparison of QOL-15

| Group | Mean | Std. Dev | p-value |
|---|---|---|---|
| Case | 21.1 | 4.13 | 0.001 (Sig) |
| Control | 17.2 | 2.50 | |

**Table 4:** comparison of subscale of QOL-15 score

| Domain | Case | | Control | | |
|---|---|---|---|---|---|
| | Mean | Std. Dev | Mean | Std. Dev | p-value |
| Center/ Near Vision | 11.11 | 2.61 | 1.13 | 0.29 | 0.001 (Sig) |
| Peripheral Vision | 9.23 | 1.18 | 0.96 | 0.18 | |
| Dark adaptation/Glare | 16.28 | 3.21 | 1.29 | 0.48 | |
| Outdoor mobility | 10.81 | 2.01 | 1.21 | 0.14 | |

**Table 5:** Comparison of the QOL Scores according to Glaucoma severity

| Severity | Mean | Std. Dev | p-value |
|---|---|---|---|
| Mild | 17.50 | 2.13 | 0.001 (Sig) |
| Moderate | 19.31 | 2.50 | |
| Severe | 21.10 | 2.29 | |

**Discussion**

Upset visual capacity and expanded treatment cost, glaucoma additionally influences the personal satisfaction of patients. Impact begins from the date of the finding of glaucoma, at the start there is the dread of visual impairment by the patient and later movement of illness, both lead to persistent diminishing in the center for everyday exercises and furthermore shakes the patient's self-assurance.[6]

Sherwood et al.[7] did a study to analyze the QOL of glaucoma patients using Medical Outcomes Study (MOS)-20 as a quality tool, reported that patients with glaucoma scored less as compared to normal patients. Similar were found in the present study. Jampel et al and Sawada et al, both did similar studies using NEI VFQ-25, reported patients with glaucoma had clearly compromised QoL.[8,9]

GQL-15 in this study when compared with those of Goldberg et al.[10] in Australia were found to be lower for both cases and controls. This suggests that the study population had better QOL scores than their Australian counterparts. These scores were also lower than Nelson et al.[11]

An interesting finding in this study was that glaucoma patients, irrespective of the severity of the disease, experienced the greatest difficulty in the subscale of Glare and Dark Adaptation. This has been reported by Nelson et al.[11] and Goldberg et al.[10] This is an important finding because glare and dark adaptation are not routinely assessed in GEC and highlights a need to incorporate this into the care of our patients.

Nelson et al.[11] were able to detect group differences between mild and severe glaucoma cases using the GQOL-15 but did not note statistically significant group differences between mild and moderate or moderate and severe glaucoma. Goldberg et al.[10] however, were able to detect group differences between all the 3 categories of

disease severity. This could be because of a number of reasons. The patient selection criteria were dissimilar and the method of categorization of patients into mild, moderate, or severe, was different.

The limitations in the design of this study:

Participants were recruited from a single center and thus the QOL scores may not be a true reflection of what obtains in the lives of glaucoma patients in the community.

The consecutive method of recruiting participants was convenient but may have introduced some selection bias into the study.

**Conclusion**

The present study concluded that Primary Open Angle Glaucoma Patients reduces QOL even in the early stages of the disease, as there was a significant reduction in the QOL of patients with mild glaucoma. It showed a clear trend of worsening QOL scores with increasing severity of disease.

**References**

1. Skalicky S, Goldberg I. Quality of Life in Glaucoma patients. US Ophthalmic Review 2013;6:6-9.
2. Keltner JL, Johnson CA, Quigg JM, Cello KE, Kass MA, Gordon MO. Confirmation of visual field abnormalitiesin the Ocular Hypertension Treatment Study. Arc Ophthalmology 2000;118: 1187-94.
3. Quigley HA. Number of people with glaucoma worldwide. Br J Ophthalmol 1996;80:389.
4. Severn P, Fraser S, Finch T, May C. Which quality of life score is best for glaucoma patients and why? BMC Ophthalmol. 2008;8:2.
5. Onakoya AO, Mbadugha CA, Aribaba OT, Ibidapo OO. Quality of life of primary open angle glaucoma patients in lagos, Nigeria: clinical and sociodemographic correlates. J Glaucoma. 2012;21(5):287-95.
6. Hahn SR, Friedman DS, Quigley HA. Effect of patient-centered communication training on discussion and detection of non-adherence in glaucoma. Ophthalmology 2010;117:1339–47.
7. Sherwood MB, Garcia-Siekavizza A, Meltzer MI, Hebert A, Burns AF, McGorray S. Which quality of life score is best for glaucoma patients and why? Ophthalmology 1998;105:561-6.
8. Jampel HD. Glaucoma patient's assessment of their visual function and quality of life. Trans Am Ophthalmol Soc 2001;99:301-17.
9. Sawada A, Fukuchi T, Abe H. Evaluation of the relationship between quality of vision and visual function in Japanese glaucoma patients. Clin Ophthalmol 2001; 5:259-67.
10. Goldberg I, Clement JC, Chiang TH, et al. Assessing Quality of life in patients with glaucoma using the Glaucoma Quality of life-15 (GQL-15) Questionnaire. J Glaucoma. 2009;18:6-12.
11. Nelson P, Aspinall P, Papasoulitis O, et al. Quality of life in glaucoma and its relationship with visual function. J Glaucoma. 2003;12:139-50.