

Adverse Impact Of Glaucoma On Psychological Function

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Abstract

Background:

To compare the quality of life in patients with & without glaucoma using National Eye Institute 25-Item Visual Function Questionnaire (NEIVFQ25). To assess the impact of psychological function in patient with glaucoma.

Materials and Methods:

This study is Self-administered questionnaire based cross-sectional study with a comparison group. 50 patients with glaucoma and 50 patients without glaucoma were included in the study. Their quality of life, mental health, social function & daily activities were assessed using NEIVFQ25.

Results:

The mean age of the participants in healthy group & those with glaucoma were 47.2 ± 11.8 & 48.2 ± 13.3 respectively. The p value was 0.72, both the groups were comparable in terms of age distribution. Questionnaire contains 3 parts, PART 1 of the questionnaire was about general health and vision. It was seen that glaucoma patients had a significantly poor general health and vision than the healthy controls (p value <0.01). The PART 2 was about difficulty with activities. It was seen that glaucoma patients had a significantly higher visual difficulty with activities than the healthy controls (p value <0.01). The PART 3 was about responses to vision problems. It was seen that glaucoma patients had a significantly similar response to visual problems as that of healthy participants (p value <0.01).

Conclusion:

Glaucoma patients dependency rate on others is on higher side. It raises a question whether along with routine ophthalmological evaluation we need a psychological evaluation as well.

Key words: Glaucoma, Quality of life, mental health

INTRODUCTION

Glaucoma is a chronic disease that can cause severe visual impairment and even blindness.¹ Glaucoma is the second leading cause of blindness in the world.² Visual impairment due to ophthalmological diseases has a negative impact on physical and mental health and is a global concern. The quality of life (QoL) in patients of glaucoma can be affected in several ways such as due to decreased visual field and ultimately visual acuity, potential side effects of treatment, financial issues such as cost of medications, hospital visits, and psychological effects on the QoL including fear of blindness, anxiety, and depression.³ Lacunae in existing knowledge regarding the mental health affected by an ophthalmological illness. Currently there are very few Indian studies to assess the psychological impact in glaucoma patient.

This study is to assess the quality of life and mental health by using the NEI VFQ-25 questionnaire and score the patients with glaucoma. Understanding the effects of psychological burden and restricted activities in patients with glaucoma will help to improve their mental health by appropriate treatment protocols. This study also compares the quality of life in patients with and without glaucoma using National Eye Institute 25-Item Visual Function Questionnaire (NEIVFQ25).

MATERIALS AND METHODS

This Self-administered questionnaire-based cross-sectional study with a comparison group was conducted in the Department of ophthalmology, Chennai, Tamil Nadu, India. Ethical approval was obtained from the Institutional Human Ethical Committee of Chettinad Hospital and Research Institute and all study procedures were carried out in accordance with the Declaration of Helsinki. Written informed consent was obtained from all the participants before start of the study. Those diagnosed with psychological problems were referred for appropriate treatment. The study was conducted for a period of 6 months from September 2021 to February 2022.

Patients diagnosed with glaucoma irrespective of type of glaucoma (Primary open angle glaucoma or Angle closure glaucoma) were compared with those who did not have the disease. The study was done on a sample of 100 patients of which 50 were patients with glaucoma and 50 did not have the disease. Consecutive sampling of all the glaucoma patients attending the OPD at the department during the study period were included. Healthy group was the patients attending OPD for other complaints whose vision $>6/36$. The 25-Item Visual Function Questionnaire (NEIVFQ25) developed by the national eye institute in 2001 was used to assess the Quality of Life.⁴ The tool was converted in local language and back translated to check. Demographic information like age, gender and marital status were collected. Visual acuity, fundus examination was done. The Quality-of-life details were collected using NEIVFQ25 questionnaire.

Patients with age more than 18 years and diagnosed with glaucoma with visual acuity $>6/36$ were included in the study. Patients with other eye diseases like corneal disorders, uveitis, with systemic diseases like heart & renal disorders, with physical disabilities affecting the day-to-day life and patients who did not give consent for the study were excluded from the study.

RESULTS

The mean age of the participants in healthy group and those with glaucoma were 47.2 ± 11.8 and 48.2 ± 13.3 respectively. The p value was 0.72. hence both the groups were comparable in terms of age distribution. In healthy adult population, 42% were female and 58% were male which is depicted in Fig:1. In Glaucoma patients 50% were male and 50% were female depicted in Fig:2. Gender distribution in both the groups are comparable. The marital status in both the groups were almost similar shown in Fig:3.

The NEIVFQ25 questionnaire consists of 3 parts. The PART 1 of the NEIVFQ25 questionnaire was about general health and vision. In this section, there were 4 questions about overall health, perception of vision and pain or discomfort. The answers were graded on a Likert scale where 1 reflected the best condition and 5 reflected the worst condition shown in Table 1. Thus, it was seen that glaucoma patients had a significantly poor general health and vision than the healthy controls. The PART 2 of the NEIVFQ25 questionnaire was about difficulty with activities. In this section, there were 10 questions. The answers were graded on a Likert scale where 1 reflected

the best condition and 5 reflected the worst condition. It is shown in Table 2. Thus, it was seen that glaucoma patients had a significantly higher visual difficulty with activities than the healthy controls. The PART 3 of the NEIVFQ25 questionnaire was about responses to vision problems. In this section, there were 9 questions about limitation in accomplishment, limitation in duration of work, pain or discomfort in or around eyes, staying home due to vision, frustrated due to vision, control over work, need a lot of help, doing things that will embarrass. The answers were graded on a Likert scale shown in Table 3. Thus, it was seen that glaucoma patients had a significantly similar response to visual problems as that of healthy participants. The annexure had 8 subscales depicted in Table 4.

DISCUSSION

Our study assessed the psychological function in patients with glaucoma comparing it with the patients without glaucoma by using National Eye Institute Visual Function Questionnaire. This is the first study conducted in Indian population.

In the current study, the mean score for ocular pain, social function, mental health was almost similar between both the groups but the study done by Huang W, et al.,¹ showed these scores significantly lower in glaucoma group when compared with normal group.

Age was comparable in both the groups in our study but the study done by Sangshin Park, et al.,⁷ showed that age was higher in patients with glaucoma in comparison with patients without glaucoma. Since age of the patients was comparable in both groups in our study age related psychological effects can be avoided.

In our study glaucoma patients had a significantly poor general health and vision than healthy controls and also had higher visual difficulty with activities than healthy controls which was similar to the study done by Dominic. J. Girfe II, et al.,⁸ and Huang W, et al.,¹

In our study, the scores for mental health, ocular pain, social function and role difficulties were assessed using NEIVFQ 25 questionnaire⁶. Some population-based studies^{9,10} and multicentre clinical trials¹¹ have evaluated the disability which was due to glaucoma and self-reported. Individuals with glaucoma have self-reported difficulty in living on their own due to difficulties in reading, walking, and driving.¹²

Glaucoma can affect patients by poor vision which leads to reduced social life and restricted daily activities. It can also cause a financial burden upon the patient due to prolonged usage of medications. Adding up all the above factors leads to a poor mental health which deteriorates with time.

Our study depicted that glaucoma patients are at higher risk for psychological damage when compared with normal population in India.

LIMITATIONS:

Questionnaire used for the study is standardized one created by National Eye Institute which can be modified according to the population.

STRENGTHS

This is the first Indian study to assess the psychological impact in patients with Glaucoma. This study helps the Ophthalmologist to better understand the mental health status of glaucoma patients and to consider psychological counselling as an addition in the glaucoma treatment protocols that are being followed.

CONCLUSION:

Glaucoma patients' dependency rate on others is on higher side. It raises a question whether along with routine ophthalmological evaluation do we need a psychological evaluation as well. Further research needs to be carried out in order to improve psychological function and for better rehabilitation in these patients.

Conflict of Interest: No conflict of interest was declared by the authors.

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Table 1 General health and vision

	Healthy	Glaucoma	p value*
Total score (Median IQR)	45 (45-45)	45 (43-45)	<0.01
Total score (Median IQR)	4 (4-4)	6 (4-8)	<0.01

P value- Mann Whitney test.

Table 2 Difficulty with activities

	Healthy	Glaucoma	p value*
Total score (Median IQR)	10 (10-10)	12 (11-16.2)	<0.01

Table 3 Response to vision problems

Table 4

The annexure had 8 subscales as below

	Subscale	Healthy	Glaucoma	p value*
1	GENERAL HEALTH	10 (10-10)	9 (8-9)	<0.01
2	GENERAL VISION	10 (10-10)	8 (8-9)	<0.01
3	NEAR VISION	3 (3-3)	3 (3-4)	<0.01
4	DISTANCE VISION	3 (3-3)	3 (3-3)	0.02
5	SOCIAL FUNCTION	1 (1-1)	1 (1-1)	0.3
6	DRIVING (same as in 25 point scale)			
7	ROLE LIMITATIONS	10 (10-10)	10 (8-10)	< 0.01
8	WELL-BEING/DISTRESS and DEPENDENCY	10 (10-10)	10 (10-10)	0.02

Subscale 1,2, 7 and 8 had least score as poor outcome and higher score as best outcome.

Subscale 3, 4 and 5 least score as good outcome and higher score as poor outcome.

Conflicts of Interest: Nil

Financial help: Nil

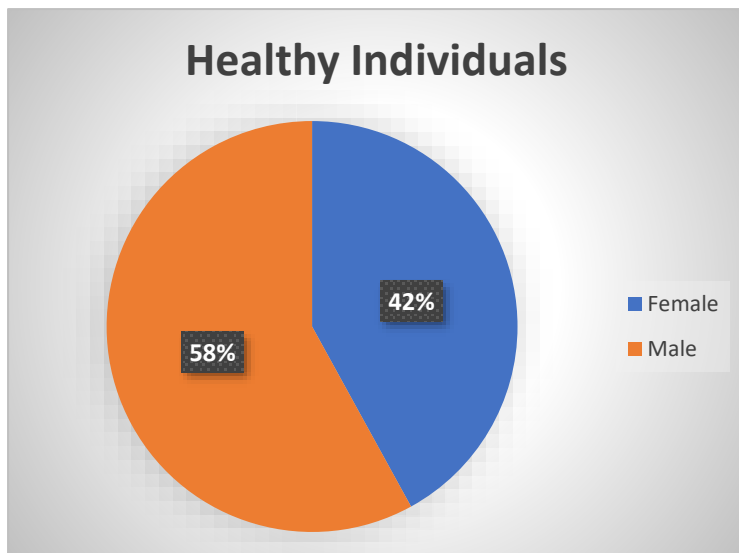


Fig: 1 Gender distribution among healthy individuals. n=50

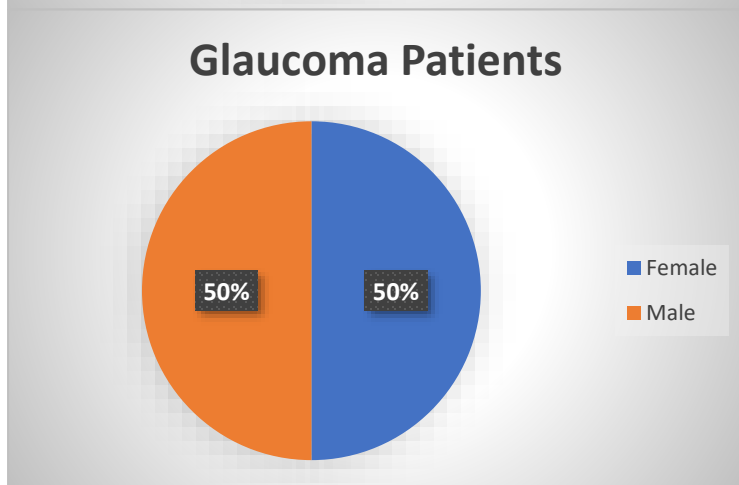


Fig: 2 Gender distribution among those with glaucoma. n=50

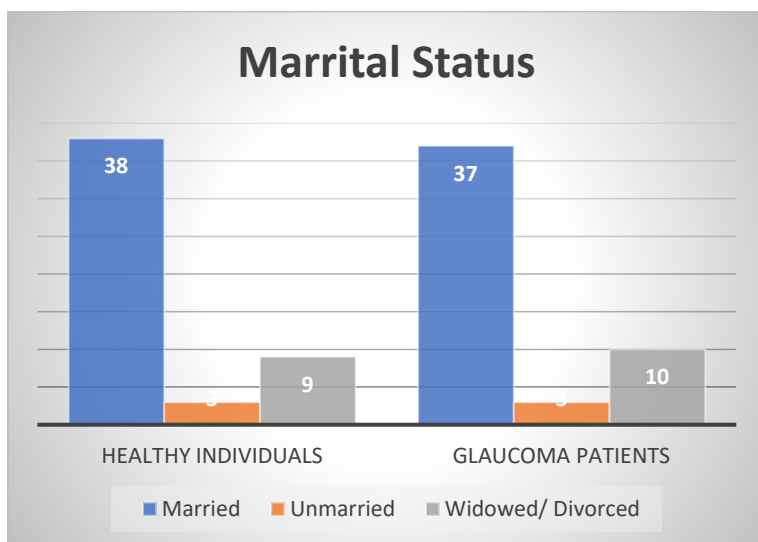


Fig: 3 Distribution of participants according to marital status. N=100