

## Original Research Article

## To find the awareness about glaucoma and the level of knowledge and the various reasons for the lack of its knowledge in patients coming to Ophthalmology Out Patient Department in Tertiary Care Centre in South Bihar

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### Abstract

**Introduction:** Glaucoma blindness imposes significant economic burden not only for individuals affected but also it increases healthcare cost, impairs quality of life, increases rehabilitation cost for the blind which all affects the economic growth of a nation. It also results a huge burden for the healthcare system and government's spending toward health care. **Aim and Objective:** To find the awareness about glaucoma and the level of knowledge and the various reasons for the lack of its knowledge in patients coming to Ophthalmology Out Patient Department in Tertiary Care Centre in South Bihar **Material and Methods:** A population-based study, was conducted in the outpatient department of a tertiary medical centre between Oct 2019 and July 2020. All the patients above 20 years of age attending the OPD were chosen randomly and asked "if they have heard about glaucoma" in their local language (Hindi). If yes, a subsequent question was asked to them. The patients who were undergoing treatment for glaucoma were excluded from the study. **Results :** Out of 800 study subjects only Thirty five (4.4%) participants were aware of the term glaucoma. 17( 48.57%) out of 35 knows that risk of glaucoma increases with age, 8(22.86%) says glaucoma not increases with age, rest10( 28.57%) don't know the answer. On asking if anyone can have glaucoma, 18 says yes, 9 says No, and rest 8 don't know. Out of 35, 16(45.71%) knows that glaucoma is preventable, 5( 14.29%) know it wrong, 14 (40%) don't know. On asking whether treatment of glaucoma possible 13(37.14%) says yes, 11(31.43%) says no, 11 (31.43%) say don't know. 20 out of 35 study subjects says Vision affected in early age in glaucoma **Conclusion:** Awareness and knowledge of glaucoma is low among our study subjects. Most common source of information was TV/Radio/Newspaper. An efficient Information, Education and Communication (IEC) strategy needed to improve knowledge and awareness.

**Keywords:** IEC, Tertiary Care Centre, Glaucoma.

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### Introduction

Blindness is a concern world over. This is more so in a developing country like India. Glaucoma is the second leading cause of visual loss in the world. The prevalence of glaucoma worldwide is 67 million and 6.6 million people are blind due to glaucoma. Blindness due to glaucoma is irreversible but preventable. In India, glaucoma is the third most common cause of blindness with a prevalence of 5.8% among the blind, next to cataract and uncorrected refractive errors. Nearly half of the blind people are unaware of their condition.[1]

Glaucoma blindness imposes significant economic burden not only for individuals affected but also it increases healthcare cost, impairs quality of life, increases rehabilitation cost for the blind which all affects the economic growth of a nation. It also results a huge burden for the healthcare system and government's spending toward health care.[2]

Glaucoma has been categorized into two primary types including open angle glaucoma and closed angle glaucoma. High intraocular pressure has been identified as the key factor causing the optic nerve damage. Yet, the condition can still be diagnosed in the eyes that

may present with normal or even lower than normal ocular pressure. Unfortunately, there has been no progress in identifying a definite treatment for glaucoma till now. The symptoms of the disease can be controlled and blindness can be prevented through early diagnosis and treatment. The vision disturbance initially affects either the peripheral vision or the side vision; however, patients usually fail to identify the symptoms until significant damage is attained in the form of blindness.[3]

There are several known risk factors for glaucoma which includes increasing age, family history of glaucoma, near sightedness, high blood pressure, diabetes mellitus and elevated intraocular pressure.[4]

Different levels of glaucoma awareness have been reported in different populations. Published studies from developing countries indicate low levels of awareness, while those from developed countries indicate higher levels of awareness.[5]

The awareness and knowledge about glaucoma greatly influence the treatment-seeking behavior of individuals. The late presentation of glaucoma and its symptoms is due to the lack of awareness about the disease, which significantly increases the risk of blindness. It is recognized that if the individuals have enough knowledge about the asymptomatic course and predictors of glaucoma, it is possible that the patients will seek for screening and clinical assistance

With the above background the present study has been undertaken to evaluate the awareness and knowledge about Glaucoma among

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patients coming to Ophthalmology OPD in Tertiary Care Hospital in South Bihar.

**Material and Methods**

A population-based study, was conducted in the outpatient department of a tertiary medical centre between Oct 2019 and July 2020. The study was approved by the Institutional Medical Ethics Committee. A written informed consent was obtained from all the participants after explaining the nature of the study. The questionnaire was initially designed in English and then translated into the local language (Hindi) with inputs for framing the questions from the patients attending the outpatient department (OPD) and then again back translated to English.

All the patients above 20 years of age attending the OPD were chosen randomly and asked “if they have heard about glaucoma” in their local language (Hindi). If yes, a subsequent question was asked to them. The patients who were undergoing treatment for glaucoma were excluded from the study. The questionnaire was handed over to the participants in their preferred language (English or Hindi). If the patient was illiterate, the questionnaire was read to him/her in their local language by the OPD nurse to avoid interviewer bias. The questionnaire had two sections – The first section pertaining to information about the patient’s demographic characteristics (age, gender, education level, and socioeconomic status). Section two was

designed to know the patient’s awareness and knowledge about glaucoma, through thirteen multiple choice questions. The awareness section had one question dealing with the source of information about glaucoma.

The response “having heard of glaucoma” for the study was defined as awareness and having some understanding of the eye disease was defined as knowledge. Knowledge was assessed based on the participant’s collective responses to questions on the risk factors of glaucoma, whether it was different to cataract, treatment aspects, and regarding the visual prognosis. Results were analyzed using SPSS 20.0 software (IBM SPSS, US) with regression modules installed. Descriptive analyses were reported as percentages. The correlation was used to find the association between knowledge levels and literacy level and socioeconomic status of the participants.

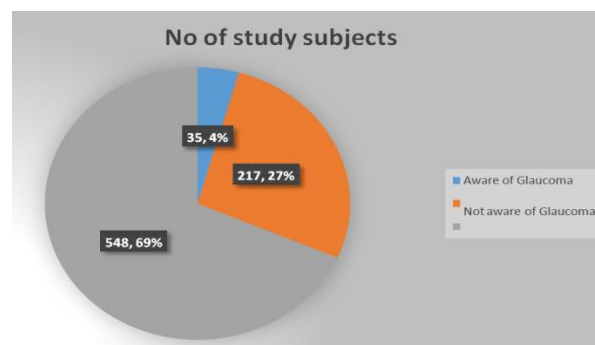
**Result**

Eight hundred participants were enrolled in the study. 356 (44.5%) females and 444 (55.5%) males participated in the study. The mean age of study subjects was 44.41±12.16 yrs with range 22-72 yrs. Only 3% study subjects had family history of glaucoma. 23 % study subjects was intermediate pass, 16% study subjects were matric pass, 19.12% were illiterate, 9.63% were professional. 38.5% study subjects belongs to socioeconomic class IV, 23.25% in class III, 22.25% in class II, 8.75% in class I and only 7.25% were in class V.

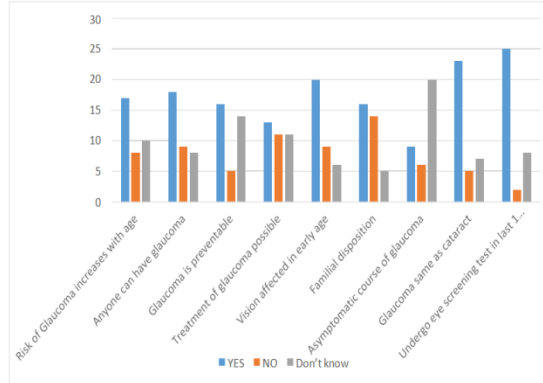
**Table 1: Sociodemographic characteristics of study subjects**

Sociodemographic character		
<b>Age</b>	44.41±12.16 yrs	22-72 yrs(Range)
<b>Sex</b>	No	%
Male	444	55.5
Female	356	44.5
<b>Family History</b>	No	%
Present	24	3
Absent	776	97
<b>Educational status</b>	No	%
Illiterate	153	19.12
Primary	90	11.25
Middle	54	6.75
Matric	128	16
Intermediate	184	23
Graduation	114	14.25
Professional	77	9.63
<b>Socioeconomic classification</b>	No	%
I	70	8.75
II	178	22.25
III	186	23.25
IV	308	38.5
V	58	7.25

Out of 800 study subjects only Thirty five (4.4%) participants were aware of the term glaucoma out of which 13 (37.15%) were female and 22 (62.85%) were male.



**Fig 1: Awareness of study subjects regarding Glaucoma**



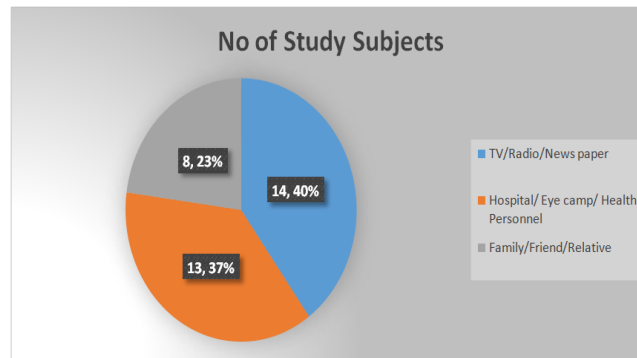
**Fig 2: Knowledge of Study subjects regarding Glaucoma**

Fig 2 shows the knowledge of study subjects who were aware of glaucoma at the time of study on the basis of specific questions asked about glaucoma. 17( 48.57%) out of 35 knows that risk of glaucoma increases with age, 8(22.86%) says glaucoma not increases with age, rest 10( 28.57%) don't know the answer. On asking if anyone can have glaucoma, 18 says yes, 9 says No, and rest 8 don't know. Out of 35, 16(45.71%) knows that glaucoma is preventable, 5( 14.29%) know it wrong, 14 (40%) don't know. On asking whether treatment of glaucoma possible 13(37.14%) says yes, 11(31.43%) says no, 11 (31.43%) say don't know. 20 out of 35 study subjects says Vision affected in early age in glaucoma, 9 says no and 6 study subjects don't know. We also ask about familial disposition of glaucoma, 16 out of 35 says yes about Familial disposition, 14 says no, and 5

subjects don't know about glaucoma familial disposition. 9 out of 35 says glaucoma can have asymptomatic course, 6 say no, 10 say don't know.

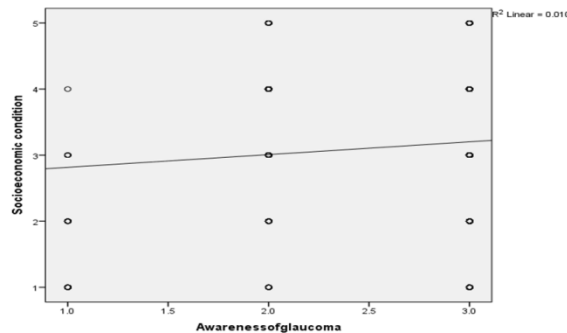
23 out of 35 think that Glaucoma is same as cataract, 5 think otherwise, and 7 don't know about it. On asking about origin of glaucoma 6 out of 35 says mature cataract, 13 says progressive increase in glass number, 10 say pressure damage to nerve of vision, 6 don't know. On asking about consequences of Untreated glaucoma 4 out of 35 says slow irreversible loss of vision, 21 say eye cannot be operated, 10 don't know.

On asking whether they had undergone eye screening or eye checkup in last 1 year, 25 out of 35 underwent eye screening in last 1 yr, 2 do not undergo screening, 8 don't know about eye screening.



**Fig 3: Source of Information regarding Glaucoma**

On asking about source of their information about glaucoma, 14(40%) know about it from TV/RADIO/NEWS PAPER, 13(37.14%) know from hospital, eye-camp, health personnel, and rest 8( 22.86%) know about glaucoma from family/friend /relative.



**Fig 4 : Association of awareness about glaucoma with socioeconomic condition**

If we find correlation of awareness of glaucoma with socioeconomic status of study subjects, we found very mild correlation with R square 0.01, When we do multivariate analysis to find association of awareness of glaucoma with age, sex, educational level, and socioeconomic status we found mild association with R square 0.031. When we do linear regression we found significant effect with p value <0.05.

#### Discussion

Glaucoma is considered as one among the leading causes for irreversible blindness. The progression can be prevented by early detection of the diseases. Lack of awareness about the diseases is the major barrier to its detection. The present study conducted in OPD of Ophthalmology of tertiary medical centre, south Bihar reported that only 4.4% is aware of the disease. Other studies done in developed country such as Alemu DS<sup>(2)</sup> shows the proportion of awareness was 35.1%, Study by Dagtekin G[6] shows awareness about glaucoma was found to be 64.1% in people without glaucoma. Study by Kumah DB et al.[7] conducted a descriptive cross sectional study on undergraduate students shows More than three-quarters (83.33%) of the participants had heard of glaucoma.

However, similar studies conducted among the rural populations of India reported a very low rate of awareness. Study by Nirmala[8] shows 18.23% study subjects were aware about glaucoma. Study by Prabhu M et al.[1] shows 4.8% subjects were aware of glaucoma which is almost similar to our study. Krishnaiah S[9] shows 0.33% awareness about glaucoma in rural population. It is noteworthy that these Indian studies were population-based epidemiologic surveys on either rural or urban population, and different age group criteria were used in two of these studies; hence, a direct comparison may not be applicable. The awareness level was very low compared to reports from developed nations but higher compared to developing nations. Higher awareness may be due to this is expected from such an urban-based population study where people have access to health related information at least due to geographic proximity to information. The due attention given to glaucoma in the recent few years may explain this. This could also be the effect of the expansion in eye care service through the increasing number of eye care professionals (optometrists and ophthalmologists) in India.

In our study correlation of awareness of glaucoma with socioeconomic status of study subjects, we found very mild correlation. When we do multivariate analysis to find association of awareness of glaucoma with age, sex, educational level, and socioeconomic status we found mild association. Other similar conducted study on this topic such as study by Nirmala et al.[8] shows As level of education increases awareness and knowledge increases. In this study graduates and post graduates had good knowledge (69.7%) There is not much difference in relation with awareness among males and females. According to this study, primary and above educational level was positively associated with better knowledge about glaucoma. This might be due to the higher

number of literates, which may seek health related information that probably leads to awareness.

Study by Dağtekin G et al.[6] do not find a significant difference between the two study groups (63% for both groups) regarding the knowledge of familial predisposition (p>0.05). Akaraiwe NK et al.[10] found that Awareness was significantly associated with attainment of some formal education, awareness of a positive family history, and having had an eye check prior to the outreach.

#### Conclusion

Awareness and knowledge of glaucoma is low among our study subjects. Most common source of information was TV/Radio/Newspaper. An efficient Information, Education and Communication (IEC) strategy needs to be designed to increase the awareness and knowledge levels of glaucoma and thus reduces blindness due to glaucoma

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