

Determinants of glaucoma awareness and knowledge in patients attending ophthalmology OPD in tertiary care hospital

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Abstract:

Background: although glaucoma is one of the most important cause of blindness in the world its awareness is low in the general population. **Aim:** to study the awareness and knowledge of glaucoma in patients attending ophthalmology OPD in tertiary care hospital (goa medical college). **Materials and methods:** patients above 40 years of age attending ophthalmology OPD were given a questionnaire and their awareness and knowledge assessed. **Result:** 1000 patients were given the questionnaire out of which only 188 patients were aware of glaucoma, and fewer patients had more detailed knowledge of glaucoma. **Conclusion:** since glaucoma is largely an asymptomatic disease in its early stages only awareness of glaucoma and its various risk factors can help prevent blindness due to glaucoma.

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I. Introduction

Glaucoma is the second leading cause of blindness in India and the world¹. Twelve percent of global blindness is due to glaucoma². Glaucoma progresses slowly with few, if any, noticeable symptoms in the early stage. The magnitude disability associated with the disease warrants us to have an awareness programme in place as the disease can be controlled if diagnosed in its early stages. 12 million people are affected accounting for 12.8% of the countries blindness³. Population based studies report a prevalence between 2 to 13 %⁴. As blindness from glaucoma is irreversible, early detection is the key to preserving vision. There are numerous avenues to improve the prevention of blindness from glaucoma, but improved early detection offers the most potential. Social perceptions of health have changed globally; there is an impetus to move toward good health by using resources efficiently for preventive measures. The success of control programs requires the participation of the general population in large numbers, which is not possible without some degree of awareness about the disease and its blinding consequences. Therefore, attempts to reduce the burden of disease will be unfruitful if addressed without improving the awareness levels of the general population. Similar studies have been done in the country but have been done in tier 1 cities and rural areas. Goa has a unique socioeconomic demography compared to rest of the country. These studies may not be applicable to the population of goa and no such study was conducted in the state.

II. Aims and Objective

To determine the awareness of glaucoma in patients attending ophthalmology OPD in tertiary care hospital

2.1 To determine the various demographic factors affecting the knowledge of glaucoma

III. Materials and methods

3.1 Every third patient above 40 years attending ophthalmology outpatient department of Goa medical college on Wednesday and Saturday which happened to be the outpatient days allotted to the investigator. People of medical profession such as Ophthalmology students, technicians, doctors and paramedics, nurses and paramedics were excluded from study. Demographic details of subjects, including age, sex, literacy, were recorded. Cases were classified as illiterate, primary, middle, high school, graduate, postgraduate (PG), or professional/doctor of philosophy degree (PhD) depending upon their education level. A questionnaire was asked to assess the awareness and knowledge of the subjects with respect to glaucoma.

Questionnaire

1. Have you heard of a condition known as glaucoma? Do you know whether it affects vision?
2. What are the risk factors you know of glaucoma?
 - elevated intra ocular pressure
 - family history
 - age
 - steroid use
 - previous eye surgeries/trauma
 - diabetes
 - hypertension
3. do you know whether glaucoma is treatable? If yes what do you think the treatment is?
 - Medical
 - Surgical

3.2 Duration of study: April 2017 to July 2017

3.3 Awareness about glaucoma

3.4 Definition

Subjects "having heard of glaucoma" even before being recruited for the study were defined as aware and patients who were having some understanding of the eye disease were defined as knowledgeable. Knowledge was graded as good, fair, and poor based on responses to questions on glaucoma. Subjects were considered to have *good* knowledge, if they were able to identify the risk factors for glaucoma such as increased intraocular pressure, family history, steroid use, and able to meaningfully describe the condition along with identifying treatment options. *Fair* knowledge was considered if at least two of the risk factors were identified and a description of at least one treatment option was correctly provided. Subjects were considered to have *poor* knowledge, if they were not able to identify more than a single/no risk factor or treatment option for glaucoma. Greater importance was given for the risk factors and the description for grading knowledge with regards to glaucoma. The key words that we looked for in the description were "increased eye pressure" and "loss of side vision". The influence of age, gender, religion, ethnicity, and economic status on the subject's knowledge and awareness of glaucoma was accessed using multiple logistic regression analysis. A *P* value less than 0.05 was considered statistically significant in this regard.

IV. Results

According to the studies available for Indian population, the awareness for glaucoma ranges from 0.32% to 18.24%.⁵ in our study the awareness is seen to be much higher, that is 18.8%. This difference may be due to the population studied. Whereas most studies in the past were conducted on rural populations, this study included urban and semi-urban populations. In addition, this was a hospital-based study and the participants were those who were accessing an eye care facility; therefore, glaucoma awareness is expected to be greater in this group.

A relationship between glaucoma awareness and a particular sex has been noted by a few studies in the past. However, we did not find any relationship between sex (Fig 2) and glaucoma awareness. This could be due to the less gender discrimination in the population studied. However, we did find a relationship in the age (Fig 1) and awareness of glaucoma. The younger age group was more aware of glaucoma than the elderly population, this can be explained on the basis of increased education opportunities and literacy among the younger generation as compared to the older generation

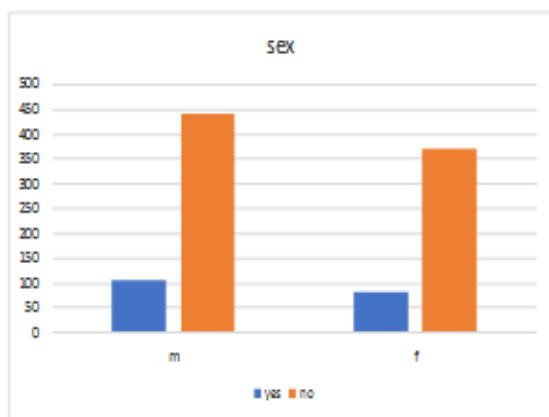


Figure 2 awareness distribution according to sex

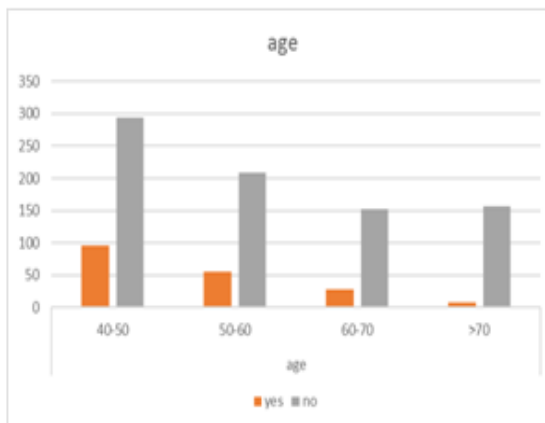


Figure 1 awareness distribution according to age

Among the subjects studied 546 (54.6%) were males and 454 (45.4%) were females. The mean age was 54.71 and standard deviation was 8.96 the minimum age was 40 and maximum age was 86. The rural: urban ratio was 38.7:61.3. Out of the population studied 63 % were Hindus, 23% were Christians, 11% were Muslims and 3% were other minorities. the mother tongue was Konkani of 44%, Marathi of 27%, Hindi 14%, Kanada 7 %, Urdu 7% others 1%.

Among the subjects studied 111 were illiterate, 70 people had primary education, 180 had middle school education, 380 had high school education, 217 were graduates and 42 had postgraduate/PHD degrees. There was a strong association found between education and awareness of glaucoma.

Out of the 1000 patients studied 188(18.8%) had heard of glaucoma which is significantly more as compared to similar studies performed elsewhere. Among them majority 112(59.57%), had just heard of glaucoma, while 48 patients (25.5%) had fair knowledge of glaucoma, while only 28(14.8%) had good knowledge of glaucoma. Out of the 188 patients who were aware of glaucoma 112(59.5%) were aware that there is a treatment for glaucoma. The source of information was as follows

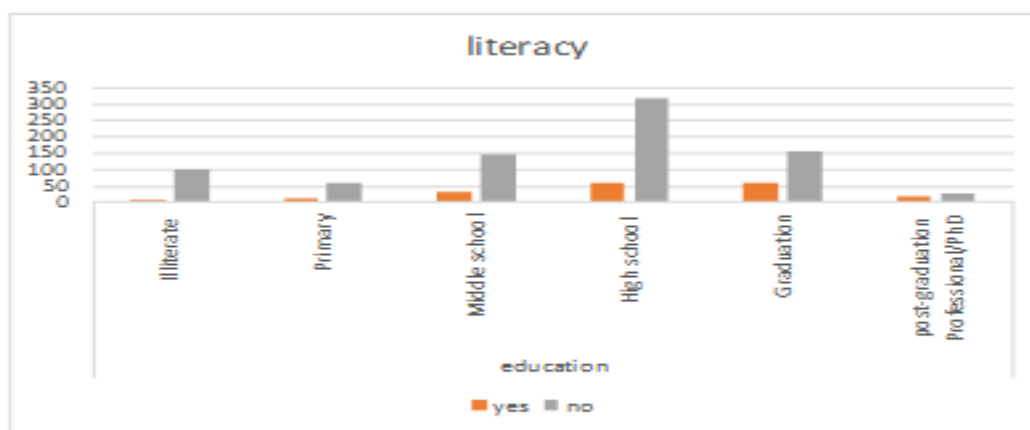


Figure 3 Awareness distribution according to education

Table 1 table showing source of information of subjects

source of information	Number of subjects
health care provider (doctor, optometrist)	94
relatives with glaucoma	34
posters and other media	60

It was seen that majority of patients got information of glaucoma from the health care providers (50%) followed by posters and other media (31.9%) and lastly from relatives and friends suffering from glaucoma. Among the patients who had good knowledge of glaucoma, 21.2% knew that increased intra-ocular pressure was an important risk factor, 11.1% and 7.9% knew that increasing age and family history were important risk factors. The knowledge of other risk factors was poor in the studied population

Table 1 frequency distribution of awareness and knowledge of glaucoma in the subjects studied

	no of subjects	percentage
awareness		
heard of glaucoma	188	18.8
not heard of glaucoma	812	81.2
knowledge		
risk factors for glaucoma		
elevated intra ocular pressure	40	21.2
family history	15	7.9
Age	21	11.1
steroid use	9	4.7
previous eye sugeries/trauma	6	3.1
diabetes	7	3.7
hypertension	4	2.1

V. Discussion

Health promotion and communicating risk is a key public health strategy. Public awareness of vision care especially glaucoma is very low. Effective health education about eye care may influence the behaviour of individuals, to consider regular ocular care, frequent check-ups and approaching an ophthalmologist if they get the associated symptoms.

In our study although we found 18.8 percent awareness among the general population, which is on the higher side as compared to the rest of the country, it still means 81.2% of population is unaware of glaucoma. Moreover, among those who are aware, very few have adequate knowledge of risk factors and treatment associated with glaucoma.

Communicating visual prognosis by primary health clinicians and primary eye care practitioners would help increase the knowledge and compliance among glaucoma patients for better results with regards to effective management. The education programs need to target the known cases, due to their disease status or other risk characteristics such as people with family history of glaucoma, aged people and angle closure. The aims of education should emphasize on changing individual's perception of risk of vision loss, but also on providing information about the benefits of early detection and treatment. Also, education programs should be oriented towards the involvement of friends and family members in supporting the seeking of eye care and in alleviating the fear or anxiety regarding treatment. It is important to note that the benefits of removing barriers to access can be fully realized only when the adequate utilization of preventive services is manifested. Studies across the globe have clearly documented the potential cost savings with regular preventive eye care as compared to cost of losing vision. Community level programs and other initiative taken as part of the World Glaucoma Day in increasing awareness on glaucoma through various media and setting up patient awareness groups would also help the clinician.

It is also necessary to ensure early detection through 'opportunistic case detection' by performing a detailed eye examination at every available instance, and starting treatment or appropriate referral as soon as possible so as to meet the demand for services that would rise following effective health promotion and raised awareness in this regard.

Table 2 previous studies of awareness of glaucoma

Author	year	Country	Study population	Awareness of Glaucoma percent
Nirmala et al ⁶	2016	India	rural residents (aged 20 and above)	18.24
Parveen Rewri and Mukesh Kakkar ⁷	2014	India	rural residents (aged 20 and above)	8.3
Mridula Prabhu et al ⁵	2012	India	Tertiary eye hospital patients-Adults 40 years and above	5.
Sathyamangalam et al. ⁸	2004	India	Urban population—Adults above 40 years	13.30
Dandona et al. ⁹	2001	India	Urban population—Above 15 yrs	2.30
Krishnaiah et al. ¹⁰	2005	India	Rural population: Above 15 yrs	0.27
Destave Shiferaw Alemu et al ¹¹	2016	Ethiopia	community-35 and above years	35.10
C. E. Ogbonnaya et al ¹²	2016	Nigeria	community-10 years and above	21.10
Thapa et al. ¹³	2011	Nepal	Community-aged 40 years and above	2.
Tenkir et al. ¹⁴	2011	Ethiopia	Community aged 40 years and above	2.
Saw et al. ¹⁵	2003	Singapore	Tertiary eye hospital patients-Adults 35 yrs and above	23
Lau et al. ¹⁶	2002	Hong Kong	Community-Adults above 40 years	78.40
Gasch et al. ¹⁷	2000	United States	General eye service patients—All Ages	72
Livingston et al. ¹⁸	1995	Australia	Community—Adults above 40 yrs	79

VI. Limitation of our study

The study was done on subjects attending the outpatient department of a tertiary care hospital, so it may not reflect the actual awareness of glaucoma in the community. The actual awareness among general population may be much lower than that found in this study.

VII. Conclusion

Although the awareness of glaucoma found in this study is 18.8 percent which is much higher as compared to previous studies, it still implies that more than 81.2 percent of the population is unaware of glaucoma. Since glaucoma causes irreversible loss of peripheral vision, patients become symptomatic in advanced stages and come to the health care provider. The only way to prevent this is by increasing the awareness of glaucoma in the general population

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