

Knowledge, Awareness and Demographic Profile Of Glaucoma In Glaucoma Patients And General Population: A Tertiary Care Hospital Based Study.

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Abstract:

Background: The study aimed to evaluate the level of knowledge and awareness of glaucoma and their possible determinants in a group diagnosed with glaucoma and in a population-based group without glaucoma.

Materials and Methods: This prospective, observational, hospital-based study included 102 patients presenting to the ophthalmology outpatient department of a tertiary care hospital in Kashmir in the month of October 2022. Written informed consent was obtained from all participants after explaining the nature of the study. A well-designed questionnaire was used to collect the data of the recruited patients. The questionnaire included socio-demographic characteristics like age, gender, residence and were asked to respond to other questions of the questionnaire. was designed to collect information from those aware of glaucoma about the subject's knowledge of glaucoma.

Results: The mean age of participants was 64.5 ± 9.25 years (range, 40-81). The study participants were 64.7% (n = 66/102) males and 35.3% (n = 36/102) females. Glaucoma was diagnosed in 50.9% of participants (n = 52/102). Overall, 19.6% (n = 20/ 102) of participants had a positive family history of glaucoma. In the study 44 patients (43.2%) were "aware" and 58 (56.8%) were "unaware" about glaucoma. The participants were divided into 2 groups: those aware of glaucoma were termed as group 1 and those unaware as group 2. Overall, 43.1% (n = 44/102) of the participants were aware of glaucoma.

Conclusion: We conclude that awareness of glaucoma is more in the males than females, urban than rural areas, glaucomatous patients more than non-glaucomatous patients, patients with refractive errors than without refractive errors.

Key Word: Glaucoma, prevention, awareness of glaucoma.

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I. Introduction

Glaucoma leads in the causation of irreversible blindness worldwide^[1]. More than 65 million people worldwide^[2-4] and approximately 11 million Indians are affected due to this sight threatening disease^[5]. Prevention of blindness due to glaucoma is an important component of a national program for control of blindness in India^[6]. Early diagnosis of glaucoma is important for its effective management and prevention of blindness. The difficulty in the early detection of glaucoma is due to the asymptomatic course of the disease during initial stages and lack of any known screening tool. Studies have shown that 50 - 90% of the glaucoma cases are not diagnosed in the early stages of the disease^[7,8] and a large number of cases are diagnosed at a later stage of the disease^[9,10]. Due to lack of awareness about glaucoma, patients usually present late^[11,12] due to which the risk of blindness is increased manifold^[13]. Detection of glaucoma at an early stage is facilitated through camp screening and by encouraging the general population to seek regular ophthalmic care. Awareness about the nature and risk factors causing glaucoma affects the behaviour for seeking intervention among the population^[14,15] especially in a disease having an asymptomatic clinical course like glaucoma. The success of the programs for knowledge about the glaucoma 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, burden of the disease can be minimised by encouraging the general population to participate in the awareness programs^[4]. Assessment of awareness is the initial step in the planning of disease management. In India, studies on awareness of glaucoma were conducted in southern^[16,17,18] and central India^[19]. The present study is designed to evaluate the awareness and knowledge about glaucoma among the patients coming to the outpatient department of ophthalmology in a tertiary care hospital.

II. Materials And Methods

This prospective, observational, hospital-based study included 102 patients presenting to the ophthalmology outpatient department of a tertiary care hospital in Kashmir in the month of October 2022. Written informed consent was obtained from all participants after explaining the nature of the study.

Study Design: Prospective, observational study.

Study Location: This was a tertiary care teaching hospital based study conducted in the Department of Ophthalmology, Government Medical College, Srinagar, J&K.

Study Duration: This study was conducted in the Outpatient Department of Ophthalmology in the month of October 2022.

Sample Size: The study included 102 patients presenting in the Outpatient Department of Ophthalmology in the month of October 2022.

Sample Size Calculation: The sample size was estimated based on a single proportion design. It included 52 glaucomatous patients and 50 non-glaucomatous patients.

Subjects & selection method: The study population was randomly selected in the Outpatient Department of Ophthalmology, and it included 52 patients who were diagnosed with glaucoma and were on treatment and 50 non-glaucomatous patients visiting the hospital due to other complaints.

Inclusion Criteria:

1. Patients diagnosed as cases of primary open angle glaucoma.
2. Patients aged >18 years.
3. Either sex.
4. Patients with complaints other than those related to glaucoma.
5. Patients giving wilful consent to participate in the study.

Exclusion Criteria:

1. Patients of angle closure glaucoma.
2. Patients not giving consent to be included in the study.

Procedure methodology:

The study was approved by the local ethics committee/institutional review board of the institute. The study included the general population and the patients already diagnosed with glaucoma. After written informed consent was obtained, a well-designed questionnaire was used to collect the data of the recruited patients. The questionnaire included socio-demographic characteristics like age, gender, residence and were asked to respond to other questions of the questionnaire. Respondents giving a positive response to any of the following questions—“having heard of glaucoma and knowing that it can cause blindness; anyone can have glaucoma; treatment of glaucoma is possible and blindness from glaucoma can be prevented” (Questions 2–5, Table 1)—were defined as “aware.” A brief structured questionnaire (Table 1) was designed to collect further information from those aware of glaucoma about the subject’s knowledge of glaucoma. The questionnaire was adopted from a similar study done on awareness of glaucoma among residents of north India by Rewri et al and validated by a group of ophthalmologists and experts in community medicine^[21].

Statistical analysis:

The data was recorded on a predesigned proforma and managed on a spreadsheet (Excel; Microsoft Corp, Redmond, WA). Qualitative data were compared using χ^2 square and Fischer exact tests and quantitative data by ANOVA 1-way test. Nonparametric tests were applied wherever the sample size was less. A P-value less than 0.05 was considered statistically significant.

III. Results

The study included 102 participants. The mean age of participants was 64.5 ± 9.25 years (range, 40-81). The study participants were 64.7% ($n = 66/102$) males and 35.3% ($n = 36/102$) females. Glaucoma was diagnosed in 50.9% of participants ($n = 52/102$). Overall, 19.6% ($n = 20/102$) of participants had a positive family history of glaucoma. In the study 44 patients (43.2%) were “aware” and 58 (56.8%) were “unaware” about glaucoma. The participants were divided into 2 groups: those aware of glaucoma were termed as group 1 and those unaware as group 2. Overall, 43.1% ($n = 44/102$) of the participants were aware of glaucoma. The results of various demographic and clinical features (as shown in Table 2) that were compared between the 2 groups are described below.

TABLE 1: Questionnaire to evaluate awareness and knowledge of glaucoma					
No	Question	Response			
1	Have you ever heard of glaucoma?	Yes	No	-	-
2	Glaucoma is a disease of the eye that can lead to loss of vision	Yes	No	Don't know	-
3	Blindness from glaucoma can be prevented	Yes	No	Don't know	-
4	Anyone can have glaucoma	Yes	No	Don't know	-
5	Treatment of glaucoma is possible	Yes	No	Don't know	-
6	Risk of glaucoma increases with age	Yes	No	Don't know	-
7	Vision is affected in early course	Yes	No	Don't know	-
8	Glaucoma has familial predisposition	Yes	No	Don't know	-
9	Glaucoma has asymptomatic course	Yes	No	Don't know	-
10	Glaucoma is same as cataract	Yes	No	Don't know	-
11	Glaucoma results from	a) Mature cataract	b) Increase in glass numbers	c) Pressure damage to nerve of vision	d) Don't know
12	What will happen in untreated glaucoma?	a) Irreversible loss of vision	b) Eyes cannot be operated	c) Don't know	-

This questionnaire was adopted from the previously published study by Rewri et al on awareness, knowledge and practice of glaucoma in north Indian rural residents.

TABLE 2: Demographic characteristic of the study group.				
S.no	Factor	Subcategory	Value	P-value
1	Age, y	40-49	6	0.95
		50-59	20	
		60-69	38	
		>70	38	
2	Sex	Males	66	<0.00001
		Females	36	
3	Refractive Error	Present	42	<0.00001
		Absent	60	
4	Glaucoma diagnosis	Yes	52	<0.05
		No	50	
5	Intraocular pressure (mean)	Right eye	20.68	0.8
		Left eye	20.50	
6	Awareness	Aware	44	<0.05
		Not aware	58	
7	Residence	Rural	72	<0.05
		Urban	30	

Table 3: Awareness among different subgroups.

S.no.	Factor	Subgroups	Awareness	Value
1.	Age	40-49	Aware	4
			Not aware	2
		50-59	Aware	11
			Not aware	9
		60-69	Aware	19
			Not aware	19
		>70	Aware	10
			Not Aware	28
2.	Sex	Males	Aware	37
			Not aware	29
		Females	Aware	7
			Not aware	29
3.	Residence	Rural	Aware	17
			Not aware	55
		Urban	Aware	27
			Not aware	3
4.	Glaucoma	Yes	Aware	28
			Not aware	24
		No	Aware	16
			Not aware	34
5.	Refractive error	Present	Aware	30
			Not aware	12
		Absent	Aware	25
			Not aware	35

IV. Discussion:

Glaucoma is a major cause of irreversible blindness having an insidious course and no symptoms until the disease reached in the advanced stages. The delayed diagnosis of glaucoma can be attributed to lack of awareness and inadequate screening methods of glaucoma^[20-26].

India is reported to have an awareness of 0.32% - 13.5% about the glaucoma^[20,21,27,28,29]. In our study there is a higher level of awareness (43.1%) which is attributed to the difference in the population studied. In our study we saw that the awareness was higher in the urban areas (90%) than the rural areas (23.6%); the difference in awareness levels is attributed to the factors like poor literacy rate, poverty, lack of adequate health care facilities, and failure on the part of health education. Thus, the national health programmes need to focus on these issues to reduce the burden of blindness due to glaucoma.

Few studies found relation of age or sex on the awareness of glaucoma. In our study, no relationship was found between age and awareness of glaucoma; however, we saw that there is an increased tendency of males having awareness about glaucoma. This could be due to differences in social, economic, cultural and healthcare practices of the population studied.

In our study, we found that people with refractive error had awareness of 71.4% and those without refractive error an awareness of 41.6%. This was statistically significant. Gasch et al^[30] showed that myopes and emmetropes had higher level of awareness as compared to myopes; showing that refractive error has a role in awareness about glaucoma. We can justify it by stating that the group of people with refractive errors are more likely to access ophthalmological services and thus awareness is higher in them. The group of patients without refractive error can be reached by putting posters, pamphlets on glaucoma and complications of glaucoma at eye care facilities to help increase the awareness of glaucoma.

Studies showed that the source of information about glaucoma was the close acquaintances^[20,31]. Our study showed a similar trend with relatives/family members/friends of glaucoma patient being the primary source of information for the study subjects (37%). Television and newspapers were source of information in 34% of participants and social media in 29% of the participants. We believe that effective use of such media may be significant sources of awareness about such diseases.

V. Conclusion:

We conclude that awareness of glaucoma is more in the males than females, urban than rural areas, glaucomatous patients more than non-glaucomatous patients, patients with refractive errors than without refractive errors.

Therefore, awareness programs should be organised so that they are accessible to everyone regardless of residence or socioeconomic difference. The use of mass media such as TV/radio, social media services in glaucoma awareness programs should be encouraged. Vashist et al^[32] gave concept of opportunistic screening for early diagnosis of glaucoma. Opportunistic screening allows glaucoma screening in patients presenting to health care providers with other illnesses unrelated to glaucoma. Lastly, eye care education programs should focus on increasing both specific knowledge on glaucoma along with general awareness of the disease. The major limitation of this study is that it is a single center study involving participants coming to an eye care facility and thus may not represent the entire population. Although a correlation between glaucoma diagnosis and glaucoma awareness was made in this study, additional informational regarding association of severity of glaucoma and glaucoma awareness would have resulted in further results. Also, the sample size is relatively small. If large number of subjects would be involved, this study would have been more conclusive.

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