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Glaucoma awareness in undiagnosed literate individuals attending routine eye clinic at a tertiary care center

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Introduction

Glaucoma is the leading cause of irreversible blindness worldwide. It is preventable, if diagnosed and treated at an early stage. Unfortunately due to lack of awareness and improper screening tools, disease remains undiagnosed and untreated for long period even in educated class of society resulting in permanent blindness. To assess awareness of glaucoma disease, a cross sectional study was conducted at a tertiary care hospital. We included only those individuals who can read and write our questionnaire irrespective of socioeconomic status. This is unlike other studies on awareness of glaucoma which were community based and included either urban[(1)] or rural population[(2,3)] irrespective of literacy rate.

Material and Methods

After approval from Institutional Ethics Committee, a cross sectional study was conducted on 200 literate individuals in a tertiary care hospital. Informed consent was taken. A systematic sampling method was used for selection of subjects attending routine eye OPD. A printed questionnaire was provided to the patients who can read, write and answer our questionnaire after making sure that they are not diagnosed case of Glaucoma. Their age gender and literacy levels were recorded.

Questionnaire was provided in Hindi or English language whichever patient is well versed with. This study was conducted over a period of 2 months i.e. from April 2015 to June 2015. No verbal communication or knowledge was imparted to patients regarding the disease before the questionnaire was provided to them.

We have excluded the patients with-

- Age<20yrs,
- Diagnosed Glaucoma patients
- Mentally unstable, and
- Illiterate individuals

In our questionnaire, we have targeted basic questions on Glaucoma disease awareness.

We have categorized the answers of questions as positive response, negative response and intermediate response and accordingly assessed them on the basis of scoring as following-

<3 = Poor Awareness
>3-5 = Fair Awareness
>5-8 = Good Awareness
>8 = Full Awareness

All positive responses were given '1' mark and negative response were scored as '0''. Positive responses included all correct answers; negative responses included wrong answers or don't know option. In case of multiple correct answer question we have categorized the response as positive (with best possible answer-1 mark), intermediate (who chose only one correct answer- 0.5 mark) and negative (with wrong answer- 0 mark).

Results

Out of 200 subjects to whom the questionnaire was administered, all of them completed the questionnaire. Among them 48.5% were males and 51.5% were females. Nine percent had primary level education (up to 5th standard), 24.5% had secondary level education (6th to 10th standard), 18.5% had higher secondary level education (10th -12th standard) and 48% were graduates and postgraduates (Table 1).

According to our scoring pattern, in primary level educated group (18 patients) none of the patient had full awareness of glaucoma disease (score> 8) and nine patient (50%) had good awareness (score >5 to 8). In secondary level education group (49 patients) only three patients (6.1%) were fully aware of glaucoma and 23 (46.9%) had good awareness. In higher secondary level education group (37patients) two patients (5.4%) were fully aware and 14 (37.8%) had good awareness about glaucoma. In graduates and postgraduates group (96 patients), thirteen (13.5%) had full awareness and 51(51.1%) had good awareness about glaucoma.

Thus out of 200 patients 0 9% (18) had full awareness of glaucoma, 19 %(38) had poor awareness, 23.5%(47) had fair awareness and 48.5% (97) had good awareness (Fig. 1). There was no statistically significant association between awareness among primary and higher secondary level of education in individuals (value of chi-square- 3.73, degree of freedom -3) with p value = 0.292, as p value <0.005 was considered to be significant.

There was statistically significant association between awareness among primary educated individuals and graduates and postgraduates (chi square =16.2, degree of freedom=3) with p value =0.001. Level of awareness among secondary educated individuals were 2.6 times more than that of primary educated ones, among higher secondary was 2 times and among graduates and postgraduates were approximately 5 times more than that of primary educated ones.

When the awareness level was compared between men and women literates (Table 2), no statistically significant difference was found (chi square= 2.58, degree of freedom =3, p value= 0.462). No difference in mean score was found in survey done in Hindi and English language.

Table 1: Level of Glaucoma awareness according to gender

S. No.	Gender	Scoring Pattern				
		<3=Poor	3-5=Fair	>5-8=Good	>8=Fully Aware	Total
1.	Men	14 (14.4%)	22 (22.6%)	50 (51.5%)	11 (11.3%)	97 (48.5%)
2.	Women	22 (21.3%)	24 (23.3%)	50 (46.5%)	7 (6.7%)	103 (51.5%)

Table 2: Distribution of Respondents according to their Educational Level and Glaucoma Awareness

S. No.	Education	Scoring Pattern				
		<3=Poor	3-5=Fair	>5-8=Good	>8=Fully Aware	Total no of responders
1.	Primary (Up to 5th standard)	7 (38.8%)	2 (11%)	9 (50%)	0	18 (9%)
2.	Secondary (6th -10th standard)	14 (23.5%)	9 (18.3%)	23 (46.9%)	3 (6.1%)	49 (24.5%)
3.	Higher Secondary (11th -12th standard)	10 (27%)	11 (29.7%)	14 (37.8%)	2 (5.4%)	37 (18.5%)
4.	Graduate And Postgraduate	7 (7.2%)	25 (26%)	51 (53.1%)	13 (13.5%)	96 (48%)
	Total Awareness	38 (19%)	47 (23.5%)	97 (48.5%)	18 (9%)	200

Discussion

Glaucoma is the leading cause of blindness second to cataract but it is irreversible. Therefore it is important to detect it in early stages. Awareness plays a very important role in early detection and treatment of glaucoma. To our knowledge this is the first tertiary care hospital based study in the central zone of India to assess the awareness among undiagnosed literate individuals attending routine eye clinic. In a study by Mridula et. al. in a tertiary hospital of tier 2 city in south India[4] the patients taken were irrespective of literacy level and diagnosis of the disease.

Our study is concerned about glaucoma awareness in the literate individuals and undiagnosed glaucoma cases, irrespective of religion, language spoken, and socioeconomic status. We found the level of awareness for this dangerous disease was very low in spite of being literate. Awareness of eye disease in urban Indian population,[5] awareness of glaucoma in urban[1] and rural Indian population[2,3] has been previously reported. They have taken awareness and knowledge as separate terms describing people "having heard of the disease" as aware and "knowing about symptoms, pathophysiology etc." as knowledgeable. However we graded the level of awareness in literate undiagnosed cases as poor, fair, good and full according to the scoring pattern as per their answers. We found that full awareness of glaucoma disease was present among 18 individuals out of 200 i.e. 9% with scoring >8 and most individuals belonged to graduate and postgraduate education level (Table 1). No single patient in primarily educated patient group had scored >8. In a similar study by Ramesh et. al. in urban Chennai study found the level of awareness was 13.3%[1] whereas study by Mridula et. al in tier 2 city of south India found the level of awareness as 4.8%.[4] We noted these were population based studies with different criteria, with no separate gradation of awareness thus no direct comparison is applicable.

We observed the people with primary level of education were not much aware about glaucoma disease than that of graduates and postgraduates. This was consistent with other studies[1,4-8] which indicates urgent requirement of health education for understanding of the disease and for eye care.[9,10] With health education, the awareness of the people regarding this disease and blindness needs to be improved.

In our study we also observed the level of awareness about glaucoma is independent of gender (p

value 0.007) which is in a way same as the study done by Mridula et. al. in tier-2 city of south India in tertiary hospital.[4] These results are different from the study done in urban Chennai[1] where women were more aware than men, and also from study by Krishnaiah S.[3] in south India, where men were more aware.

Conclusion

In our study the percentage of awareness about glaucoma as such was very low. According to the scoring pattern, a total of only 9% (18/200) were fully aware of glaucoma (score >8). There was statistically significant association between awareness among primary educated individuals and graduates and postgraduates (p value =0.001). We observed that the level of awareness about glaucoma was independent of gender (p value =0.007). We can allocate our resources to educate and impart knowledge about the seriousness of disease resulting in permanent blindness in public health eye care system. We can also spread the awareness and knowledge of disease through various health education programs. It is also important to educate people at risk of developing glaucoma to undergo annual screening for glaucoma.

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