Original Research Article

Awareness and Knowledge about glaucoma among the cases attending Ophthalmology outpatient department in a Tertiary care center

Vijay Krishnan B1,*

1 Dept. of Ophthalmology, Srimuthukumaran Medical College & Research Institute, Chennai, Tamil Nadu, India

A B S T R A C T

Background: Awareness and knowledge about glaucoma plays a major role in changing the people’s health seeking behavior for regular eye checkups which in turn leads to early detection and treatment of glaucoma and other ophthalmic disorders also and thus this study was planned.

Materials and Methods: This cross sectional hospital based study was conducted in the outpatient department of Ophthalmology at Sri Muthukumaran Medical College Hospital and Research Institute, Chennai, from September 2019 to November 2019. A total of 220 patients were included in the study. Data analysis was done using SPSS version 18.

Results: Awareness about glaucoma was reported among 21.4% of participants and among them only 40.4% had knowledge that increased intraocular pressure (IOP) is the cause for glaucoma. Also 31.9%, 40.4%, 44.7%, 2.1%, 14.9% and 34% of participants reported that obesity, diabetes mellitus, hypertension, steroids, alcohol and smoking and family history of glaucoma were the risk factors of glaucoma. Degree holders and employed participants were found to be significantly associated with better awareness of glaucoma.

Conclusion: Awareness about glaucoma in this study was poor and knowledge is still worse. This shows that we are in high time to health educate the people especially the target population about glaucoma, which causes preventable blindness.

© This is an open access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

1. Introduction

Glaucoma is one of the major public health ophthalmic problem not only in India but also worldwide.1 It is a major cause for blindness and it contributes to about 8% of global blindness.2 Usually glaucoma progresses very slowly with few symptoms in the early stage which leads to patients to present at much later and advanced stage.2

The chances of developing glaucoma increase 4.5 times after the age of 40 years.3 Apart from age, another important factor which contributes to development of glaucoma is positive family history. In India, the prevalence rate of primary open angle glaucoma has been reported between 1.3% to 3.5%, whereas that of angle closure disease as 3.7% to 10.4%.4 Also about 93% of persons with open angle glaucoma had not been diagnosed until the time of the survey, of which 1.5% and 3.3% were already blind bilaterally and unilaterally, respectively due to glaucoma.5

Blindness which is caused due to glaucoma is avoidable with early detection and treatment by screening asymptomatic population.6 Also another major parameter which needs to be assessed for reduction of burden of glaucoma is awareness and knowledge about glaucoma among the people. Awareness and knowledge about glaucoma plays a major role in changing the people’s health seeking behavior for regular eye checkups which in turn leads to early detection and treatment of glaucoma and other ophthalmic disorders also.7 It is not only beneficial in terms of vision but also cost effective.8
2. Objectives

To assess the awareness and knowledge about glaucoma among the patients attending department of ophthalmology in a tertiary care hospital

3. Materials and Methods

This cross sectional hospital based study was conducted in the outpatient department of Ophthalmology at Sri Muthukumaran Medical College Hospital and Research Institute, Chennai, from September 2019 to November 2019. All patients above the age of 18 years attending the outpatient department during the study period were included in the study. Patients with known history of glaucoma were excluded from the study. A total of 220 patients were included in the study.

The principal investigator explained the purpose of the study to each participant and a written consent was obtained prior to the commencement of the study. Data collection was done using a proforma with questions related to awareness and health care utilization practice about seeking eye checkups. Among those who were aware about glaucoma, knowledge about the risk factors and treatment options were assessed. Awareness about glaucoma was defined as having heard of glaucoma and Knowledge was assessed based on the correct response about the risk factors and treatment modalities of glaucoma.

Data analysis was done using Statistical Packages for Social Sciences (SPSS) version 18. Chi square test was done to assess the association between different parameters and awareness about glaucoma. p value of < 0.05 was considered as significant.

4. Results

In the present study, awareness about glaucoma was reported among 21.4% of participants and 78.6% were not aware about glaucoma. (Figure 1) Among those who were aware about the glaucoma the knowledge about the risk factors and treatment options about glaucoma were assessed. Only 40.4% had knowledge that increased intraocular pressure (IOP) is the cause for glaucoma. With respect to other factors, 31.9%, 40.4%, 44.7%, 2.1%, 14.9% and 34% of participants reported that obesity, diabetes mellitus, hypertension, steroids, alcohol and smoking and family history of glaucoma were the risk factors of glaucoma. Among the treatment options, 68.1% reported that eye drops can be used for the treatment of glaucoma whereas 34% and 14.9% of cases reported surgery and laser treatment, respectively were the options of glaucoma. (Table 1)

*Multiple responses

Mean age of the study participants was 44.3±14.7 years. On assessing the association between various parameters, degree holders (educational status) and employment (occupational status) were found to be significantly associated with better awareness of glaucoma whereas the other factors like age group and gender were found to be not significantly associated with awareness of glaucoma. (Table 2)

Among the 220 study participants, only 5.9% were undergoing regular eye checkups and 12.3% of study participants undergo eye checkups rarely whereas 81.8% (majority) of participants never underwent eye checkups in their lifetime.

5. Discussion

In consistent with the findings of this study, Prafulla et al performed a study and reported that mean age of participants was 43 ± 15 years with 53% and 47% men and women, respectively. They reported that only 27% of the participants were aware of glaucoma.

Sagarika et al conducted a study among rural and urban population and reported 27.2% were aware about glaucoma, 39.2% were partial aware and 33.0% were not aware. Also they stated that only 0.4% had good, 17.6% had fair and 82% had poor knowledge about glaucoma.
Table 2: Association between demographic characters and awareness about glaucoma

| Variables         | Aware N (%)  | Not aware N (%) | Total N (%) | P value |
|-------------------|--------------|-----------------|-------------|---------|
| **Age group**     |              |                 |             |         |
| 18-30 years       | 10(21.3)     | 41(23.7)        | 51(23.2)    | 0.8141  |
| 31-40 years       | 15(31.9)     | 42(24.3)        | 57(25.9)    |         |
| 41-50 years       | 11(23.4)     | 39(22.5)        | 50(22.7)    |         |
| 51-60 years       | 7(14.9)      | 29(16.8)        | 36(16.4)    |         |
| >60 years         | 4(8.5)       | 22(12.7)        | 26(11.8)    |         |
| **Gender**        |              |                 |             |         |
| Male              | 22(46.8)     | 81(46.8)        | 103(46.8)   | 0.9988  |
| Female            | 25(53.2)     | 92(53.2)        | 117(53.2)   |         |
| **Educational status** |          |                 |             |         |
| Illiterate        | 1(2.1)       | 18(10.4)        | 19(8.6)     |         |
| Primary – high school | 7(14.9)  | 103(59.5)       | 110(50)     | <0.0001*|
| Degree            | 39(83)       | 52(30.1)        | 91(41.4)    |         |
| **Occupational status** |       |                 |             |         |
| Employed          | 29(61.7)     | 52(30.1)        | 81(36.8)    | 0.0006* |
| Unemployed        | 18(38.3)     | 121(69.9)       | 139(63.2)   |         |

*S*Significant

Table 3: Utilization of routine eye checkup

| Utilization of routine eye checkup | Frequency | Percentage |
|-----------------------------------|-----------|------------|
| Regular                           | 13        | 5.9        |
| Rarely (Atleast once)             | 27        | 12.3       |
| Never                             | 180       | 81.8       |

Sathyamangalam et al12 conducted a study in the similar population to this study (Chennai) and reported awareness about glaucoma as 13.3% whereas Dandona et al performed a study and reported the awareness about glaucoma as 2.3% in adjacent city, Hyderabad.

Krishnia et al13 performed a study in rural population and reported the awareness of glaucoma as 0.32% only and it was found to be associated with illiterate people. Alemu et al14 reported that in their study the proportion of participants with awareness was 35.1%. Good knowledge was reported among 49.6% participants. Also they stated that better the education, the awareness about the glaucoma was also better.

Praveen et al15 performed a study and reported that 8.3% of participants were aware about glaucoma and only 1.9% was having knowledge about glaucoma. Prabhu et al16 conducted a study and reported that 4.8% of participants were aware about glaucoma and 3.1% had some knowledge of glaucoma. They reported significant association between higher levels of education, diabetic status and family history of glaucoma with better awareness about glaucoma.

Zeeshan et al17 conducted a study and reported that about 10% of their participants were aware about glaucoma. Ashish et al18 in their study reported that knowledge and awareness both were significantly higher among urban population as compared to rural population.

6. Conclusion

Awareness about glaucoma in this study was poor and knowledge is still worse. This shows that we are in high time to health educate the people especially the target population about the preventable blindness condition, glaucoma especially, in order to reduce the burden of it. Also people should be encouraged to undergo regular eye checkups periodically.

7. Acknowledgement

I thank all, who has guided and extended their support for the successful completion of this study. My sincere thanks to all study participants for their involvement and active participation.

8. Conclusion

Recognition of the ocular damage and treating them appropriately is crucial in the management of keratitis caused by the plant juice.

9. Conflicts of Interest

All contributing authors declare no conflicts of interest.

10. Source of Funding

None.

References

1. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. *Br J Ophthalmol*. 2012;96(5):614–8. [10.1136/bjophthalmol-2011-300539](https://doi.org/10.1136/bjophthalmol-2011-300539).

2. Komolafe OO, Bekibe CO, Ogunleye OA, Komolafe OA, Omolase CO, Omotayo FO, et al. Awareness and knowledge of glaucoma among workers in a nigerian tertiary health care institution. *Middle East Afr J Ophthalmol*. 2013;20(2):163–7. [10.4103/0974-9233.110609](https://doi.org/10.4103/0974-9233.110609).

3. Quigley HA, West SK, Rodriguez J, Munoz B, Snyder, R. The prevalence of glaucoma in a population-based study of Hispanic subjects. *Arch Ophthalmol*. 2001;19:1819–29.

4. Ramakrishnan R, Nirmalan PK, Krishnadas R, Thulasiraj RD, Tielsch JM, Katz J, et al. Glaucoma in a rural population of southern India. *Ophthalmol*. 2003;110(8):1484–90. [10.1016/s0161-6420(03)00564-5](https://doi.org/10.1016/s0161-6420(03)00564-5).

5. Robin AL, Nirmalan PK, Krishnadas R. The utilization of eye care services by persons with glaucoma in rural south India. *Trans Am Ophthalmol Soc*. 2004;102:47–55.

6. Cross V, Shah P, Bativala R, Spurgeon P. ReGAE 2: glaucoma awareness and the primary eye-care service: some perceptions among African Caribbeans in Birmingham UK. *Eye*. 2007;21:912–20. [10.1038/sj.eye.6702463](https://doi.org/10.1038/sj.eye.6702463).
7. Keziah NM, Nguavese HO, Doosuur M, Dalton NG. The role of the mass media in creating awareness about eye diseases. *J Med Res Pract.* 2014;3(2):76–80.

8. Maier PC, Funk J, Schwarzer G, Antes G, Falck-Ytter YT. Treatment of ocular hypertension and open angle glaucoma: meta-analysis of randomised controlled trials. *BMJ.* 2005;331(7509):134–9. doi:10.1136/bmj.38506.594977.e0

9. Lee BW, Sathyan P, John RK, Singh K, Robin AL. Predictors of and barriers associated with poor follow-up in patients with glaucoma in South India. *Arch Ophthalmol.* 2008;126(10):1448–54.

10. Maharana PK, Rai VG, Pattebahadur R, Singh S, Chauhan AK. Awareness and knowledge of glaucoma in Central India: A hospital-based study. *Asia-Pacific J Ophthalmol.* 2017;6:243–9.

11. Laad DS, Gupta DS, Dr. Mary J. Awareness and knowledge about glaucoma in patients of a tertiary care center. *Int J Curr Res.* 2017;9(09):58195–8.

12. Ronnie G, Baskaran M, Hemamalini A, Madan R, Augustian J, Prema R, et al. Determinants of glaucoma awareness and knowledge in urban Chennai. *Indian J Ophthalmol.* 2009;57(5):355–60. doi:10.4103/0301-4738.58456.

13. Sannapaneni K, Kovai V, Srinivas M, Shamanna BR, Rao GN, Thomas R, et al. Awareness of glaucoma in the rural population of Southern India. *Indian J Ophthalmol.* 2005;53(3):205–8. doi:10.4103/0301-4738.31802.

14. Alemu DS, Gudeta AD, Gebreselasie KL. Awareness and knowledge of glaucoma and associated factors among adults: a cross sectional study in Gondar Town, Northwest Ethiopia. *BMC Ophthalmol.* 2017;17:154. doi:10.1186/s12886-017-0542-z

15. Rewri P, Kalkar M. Awareness, knowledge, and practice: A survey of glaucoma in north indian rural residents. *Indian J Ophthalmol.* 2014;62:482. doi:10.4103/0301-4738.129787

16. Prabhu M, Kangokar PC, Patil SH. Glaucoma awareness and knowledge in a tertiary care hospital in a tier-2 city in South India. *J Scientific Soc.* 2013;40(1):3.

17. Srikanth K, Ahmed Z, Rajalakshmi AR. Knowledge and awareness of glaucoma in South India. *TNOA J Ophthalmic Sci Res.* 2019;57(3):203. doi:10.1186/s12984-018-0411

18. Chander A, Chopra R, Batra N. Awareness of Glaucoma amongst the rural and urban population of North India. *Int J Health Sci Res.* 2015;5(8):116–21.

**Author biography**

**Vijay Krishnan B,** Assistant Professor

---

**Cite this article:** Krishnan B V. Awareness and Knowledge about glaucoma among the cases attending Ophthalmology outpatient department in a Tertiary care center. *IP Int J Ocul Oncol Oculoplasty* 2020;6(4):248-251.