

# Knowledge and awareness about glaucoma among medical students: A cross sectional study

Ashwini KG<sup>1</sup>, Rajashekar Mohan Metri<sup>2\*</sup>, Vijayalaxmi Mangasuli<sup>3</sup>, Amrutha AM<sup>4</sup>, Ganashree CP<sup>5</sup>

<sup>1</sup>Senior Resident, <sup>2</sup>Associate Professor, Department of Ophthalmology, Basaveshwara Medical College and Hospital, Chitradurga, INDIA.

<sup>3,4</sup>Assistant Professor, Department of Community Medicine, Basaveshwara Medical College and Hospital, Chitradurga, INDIA.

<sup>5</sup>Associate Professor, Department of Physiology, Basaveshwara Medical College and Hospital, Chitradurga, INDIA.

Email: [drrajmetri@gmail.com](mailto:drrajmetri@gmail.com)

## Abstract

**Background:** Glaucoma is a chronic optic neuropathy which is a second leading cause of blindness worldwide after cataract. This study was conducted to know the level of knowledge and awareness about glaucoma among medical students of Basaveshwara Medical college and Hospital, Chitradurga, Karnataka. **Materials and Methods:** A cross sectional study was conducted among 150 medical students of Basaveshwara Medical College and Hospital, Chitradurga from July 2018 to August 2018. A pre-structured questionnaire was given to students to collect the data to assess the knowledge and awareness about glaucoma after ethical clearance and written informed consent. Data was entered in excel sheet and analysed using SPSS software. **Results:** Among 150 medical students, 125 were aware of glaucoma. Out of these 125, 14(11.2%) had good knowledge, 63 (50.1%) had fair knowledge and 48 (32%) had poor knowledge regarding glaucoma. Most common risk factors were increased IOP (51.2%), age >40 years (40%), family history of glaucoma (20.8%), diabetes (20%) and others (refractive errors, hypertension, obesity and steroid intake). Only 11 students knew about the surgery for glaucoma. When asked about the glaucoma, 42 (33.6%) students responded that it is a high eye pressure leading to blindness and 20(16%) among them told that this blindness due to glaucoma is asymptomatic. It was also seen that 50 (40%) students responded that the blindness due to glaucoma as irreversible phenomenon. **Conclusion:** Awareness about glaucoma is good, but knowledge about symptoms and risk factors is poor. These students are going to clinical postings from next semester onwards, it is very important to bridge the gap between awareness and knowledge, so that they can screen and counsel patients effectively.

**Key Word:** Awareness, Glaucoma, Knowledge, Medical Students

## \*Address for Correspondence:

Dr. Rajashekar Mohan Metri, Associate Professor, Department of Ophthalmology, Basaveshwara Medical College and Hospital, Chitradurga, Karnataka, INDIA.

Email: [drrajmetri@gmail.com](mailto:drrajmetri@gmail.com)

Received Date: 19/11/2018 Revised Date: 10/12/2018 Accepted Date: 05/01/2019

DOI: <https://doi.org/10.26611/1009912>

## Access this article online

Quick Response Code:



Website:

[www.medpulse.in](http://www.medpulse.in)

Accessed Date:  
08 January 2019

## INTRODUCTION

Glaucoma is the second leading cause of blindness worldwide according to World Health Organization

(WHO)<sup>1</sup> (Chennai) after cataract.<sup>2</sup>(Brazil)Glaucoma is a chronic optic neuropathy with marked changes in the optic disc and the retinal nerve fibre layer, leading to significant visual field changes. The disease is classified according to the mechanisms of obstruction of aqueous humor drainage as primary open angle glaucoma (POAG), primary angle closure glaucoma (PACG), and secondary glaucoma.<sup>2</sup> It is predicted that number of people affected by glaucoma worldwide is expected to increase to 79.6 million by 2020.<sup>3</sup>In India, the number of people suffering from glaucoma is estimated to be around 11.9 million.<sup>4</sup>On the basis of the available data, the prevalence of Primary open angle glaucoma(POAG) estimated to be 1.7% in rural population and3.5% in the urban population.<sup>5,6</sup>Accordingto the Andhra Pradesh Eye

**How to cite this article:** Ashwini KG, Rajashekar Mohan Metri, Vijayalaxmi Mangasuli, Amrutha AM, Ganashree CP. Knowledge and awareness about glaucoma among medical students: A cross sectional study. *MedPulse International Journal of Ophthalmology*. January 2019; 9(1): 06-09. <https://www.medpulse.in/Ophthalmology/>

Disease Study the awareness of glaucoma in general population was poor (2.3%) when compared to other diseases like cataract (69.8%), night blindness (60%) and diabetic retinopathy (27%).<sup>7</sup> This reduces the health seeking behavior for glaucoma resulting in an increase in prevalence of glaucoma blindness. POAG is considered as a “sneak thief of sight” owing to the nature of the disease: the slowly progressive painless diminution of vision, retention of central vision until very late in the disease and therefore a late presentation to the ophthalmologist<sup>8</sup> and about 90% remain undiagnosed<sup>5</sup>. Most of the patients have advanced visual field defects when they first present to the ophthalmologist<sup>9</sup>. Almost 90% of glaucoma –related blindness can be prevented with early diagnosis and proper treatment.<sup>10</sup> The predictive and prognostic risk factors for glaucoma include increased IOP, family and genetic history, ethnic origin, myopia and diabetes mellitus. Among these, IOP is more consistently associated with glaucoma as it is the only one that can be acted upon effectively.<sup>11</sup> Systemic conditions like hypertension, diabetes mellitus, thyroid disorders and cardiovascular diseases have also been postulated as risk factors for glaucoma.<sup>12</sup> It is estimated that over half of glaucoma cases remain undiagnosed and untreated. Ophthalmic consultations represent 9% of glaucoma cases but they are unevenly distributed throughout country, so general practitioners have an important role in prevention of blindness.<sup>13,14</sup> Medical education should train medical students to diagnose, refer patients appropriately, and even treatment of most prevalent and disabling eye diseases, including glaucoma. However studies have shown that basic knowledge of ophthalmology among undergraduate students is insufficient, so this study was conducted to assess the level of knowledge and awareness regarding glaucoma among medical students of Basaveshwara Medical College and Hospital, Chitradurga.

## METHODOLOGY

A cross sectional study was conducted among 150 medical students of Basaveshwara Medical College and Hospital, Chitradurga from July 2018 to August 2018. A pre-structured questionnaire was given to students to collect the data. Ethical clearance was obtained from Institutional Ethics Committee. Students were categorized as aware if they have heard of glaucoma and knowledgeable if they have some understanding of disease. Students depending on their knowledge categorized as Good, Fair and Poor as follows:

**Good:** Identify the risk factors such as increased IOP, Family history, steroid use and describe the condition of Glaucoma, Identify treatment modalities like eye drops, laser, surgery.

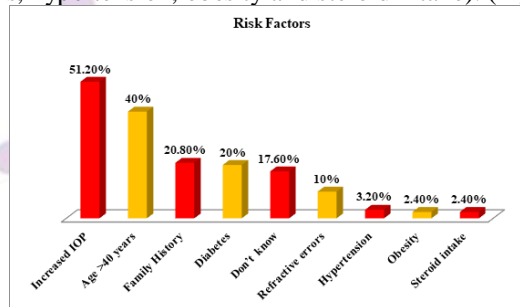
**Fair:** Identify at least 2 risk factors and 1 treatment.

**Poor:** unable to identify even a single risk factor or treatment option for glaucoma

Data entered in excel sheet and analysed using SPSS software. Results are expressed in frequency and proportions.

## RESULTS

Among 150 medical students, 125 were aware of glaucoma. Out of these 125, 14(11.2%) had good knowledge, 63 (50.1%) had fair knowledge and 48 (32%) had poor knowledge regarding glaucoma. Their source of knowledge was TV/ magazines/ internet/ other media (64%), family members and friends (23.28%), eye camps (8%) and ophthalmologists (4%). When enquired regarding the risk factors of glaucoma most common risk factors according to medical students were increased IOP (51.2%), age >40 years (40%), family history of glaucoma (20.8%), diabetes (20%) and others (refractive errors, hypertension, obesity and steroid intake). (Fig 1)



**Figure 1:** Distribution of study participants according to their responses of risk factors of glaucoma

Among 125 medical students, 60 students didn't know about any therapeutic option for glaucoma, whereas 38 students told that there was laser treatment and 22 told that there are eye drops for glaucoma treatment. Only 11 students knew about the surgery for glaucoma. When asked about the glaucoma, 42 (33.6%) students responded that it is a high eye pressure leading to blindness and 20(16%) among them told that this blindness due to glaucoma is asymptomatic. The possible symptoms of glaucoma were pain in eye (28), redness of eye(4), and decrease of peripheral vision (7). It was also seen that 50 (40%) students responded that the blindness due to glaucoma as irreversible phenomenon. (Table 1)

**Table 1:** Knowledge regarding Glaucoma and their responses among study participants

Knowledge Regarding glaucoma	Responses	Frequency (Percentage) n=125
What does Glaucoma mean?	High Eye pressure leading to blindness	42 (33.6%)
Is blindness due to glaucoma is asymptomatic?	Yes	20 (16%)
Choose all possible symptoms	Pain in eye	28 (22.4%)
	Redness of eye	4(3.2%)
	Decrease of peripheral vision	7 (5.6%)
	Don't know	50 (40%)
Blindness due to glaucoma is reversible or irreversible?	Irreversible	50 (40%)

## DISCUSSION

An important measure to reduce the global burden of glaucoma in the future is by increasing the rate of early detection of glaucoma and instituting timely and appropriate therapy. The present day medical students who will be future medical practitioners are going to form an important link in this process. Therefore ensuring good knowledge and awareness about glaucoma among them can improve the referral of patients with risk factors to Ophthalmologists which can facilitate early detection of glaucoma. Medical education should also emphasise the need to promote adherence to continuous treatment, which is vital to reduce glaucoma progression. In our study among 150 students, 125 (83.3%) were aware of glaucoma where as in a study done by Maiya AS *et al* in Davangere<sup>12</sup> it was only 63% and Nageeb N *et al* in Mangaluru<sup>10</sup> it was 92% which was done among health professionals. In a study done by Sathyamangalam RV *et al* in urban Chennai<sup>15</sup> 0.5% had good knowledge about glaucoma, 4% had fair knowledge and 4.2% had poor knowledge about glaucoma. In our study 14(11.2%) had good knowledge, 63 (50.1%) had fair knowledge and 48 (32%) had poor knowledge regarding glaucoma. We found that our study participants had good awareness about most common risk factors which were raised IOP, age more than 40 years, family history of glaucoma and diabetes. These findings were similar to a study done in Davangere by Maiya AS *et al*<sup>12</sup> and in Haryana by Rewri P *et al*.<sup>16</sup> Nageeb N *et al* in Mangaluru<sup>12</sup> 96.4% believed that glaucoma is treatable and 42.9% believed that blindness due to glaucoma is reversible whereas in our study it was 56.8% and 60% respectively.

## CONCLUSION

Though awareness about Glaucoma is good, knowledge about symptoms and risk factors is poor. These students are going to clinical postings from next semester onwards, it is very important to bridge the gap between awareness and knowledge, so that they can screen and counsel patients effectively. The aim of education should focus not only on modifying individual's perception of

risk of vision loss, but also on providing information regarding the benefits of early detection and treatment.

## REFERENCES

1. Puri SK, Elangovan S. Awareness of glaucoma among nonmedical students in South India. *Int J Res Med Sci* 2016;4(4):987-90.
2. Martins SC, Mendes MH, Guedes RA, Guedes VM, Chaoubah A. Knowledge about primary open angle glaucoma among medical students. *Rev Bras Ophthalmol* 2014;73(5):302-7.
3. Quigley HA, Broman AT. The number of people with glaucoma worldwide in 2010 and 2020. *Br J ophthalmol.* 2006; 90(3):262-7.
4. Jacob A, Thomas R, Koshi SP, Braganza A, Muliylil J. Prevalance of primary glaucoma in an urban south indian population. *Indian J ophthalmol.* 1998; 46(2):81-6.
5. Ramkrishnan R, Nirmalan PK, Krishnada R, Thulasiraj RD, Tielsch JM, Katz J, *et al.* Glaucoma in a rural population of Southern India: the Aravind Comprehensive Eye Survey. *Ophthalmology.* 2003;110:1484-90.
6. Vijaya L, George R, Baskaran M, Arvind H, Raju P, Ramesh SV, *et al.* Prevalence of primary open angle glaucoma in an urban south Indian population and comparison with a rural population. *The Chennai Glaucoma Study. Ophthalmology.* 2008; 115:648-54.
7. Dandona L, Dandona R, Srinivas M, Mandal P, John RK, Mc Carty CA, *et al.* Open-angle glaucoma in an urban population in southern India: the Andhra Pradesh eyedisease study. *Ophthalmology.* 2000; 107(9):1702-9.
8. Prabhu M, Patil SH, KangoKar PCR. Glaucoma awareness and knowledge in a tertiary care hospital in a tier-2 city in south India. *Journal of the Scientific Society.* 2013;40(1):3-8.
9. Kulkarni U. Early Detection of primary open angle glaucoma: Is it happening? *Journal of Clinical and Diagnostic Research.* 2012;6(4):667-70.
10. Nageeb N, Kulkarni UD. Glaucoma awareness and self-care practices among the health professionals in a medical college hospital. *J Clinical and Diagnostic Res* 2015;9(12):1-4.
11. Weinreb RN, Khaw PT. Primary open-angle glaucoma. *Lancet.* 2004;363(9422):1711-20.
12. Maiya AS, Ravindra B, Manjunath BH, Patil M. Awareness and knowledge of glaucoma among undergraduate medical students: can we expect greater glaucoma referrals in the future. *Int J Ophthalmology* 2017;3(3):62-5.

13. Manica MB, Corrêa ZM, Marcon IM, Telichevsky N, Loch LF. O que os pediatras conhecem sobre afecções oculares na criança? *Arq Bras Oftalmol.* 2003;66(4):489-92.
14. Silva MR. O Ensino da Oftalmologia. *Rev Bras Oftalmol.* 2009; 68(3):127-8
15. Satyamangalam RV, Paul PG, Ronne G, Baskaran M, Hemamalini A, Madanraj V, *et al.* Determinants of glaucoma awareness and knowledge in urban Chennai. *Indian J Ophthalmol;*57(5):355-60.
16. Rewri P, Kakkar M. Awareness, knowledge and practice: a survey of glaucoma in north Indian rural residents. *Indian J Ophthalmol;*62(4):482-6.

Source of Support: None Declared  
Conflict of Interest: None Declared

