

Analysis of awareness and knowledge of glaucoma among employees of an Indian medical college and tertiary care hospital

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Abstract

Introduction: Glaucoma is a disease which is asymptomatic in early stages and invariably results in blindness. The inadequacy in awareness among common people which gives rise to non-diagnosis or late diagnosis has been highlighted by various studies worldwide. This study is conducted to evaluate and compare the level of awareness and knowledge among the employees of a medical college and tertiary care hospital.

Methods: 750 employees of a tertiary health care institution were involved in this cross sectional study to evaluate and compare the level of awareness and knowledge about glaucoma. Data were entered in Excel work sheets and SPSS 9.2 was used for analysis.

Results: Valid responses from 698 participants, including 308 males and 390 females were evaluated. 19.2% staff have not heard about glaucoma out of which 74.2 % were non-medical staff, 18.1% were allied medical staff, 3.1% were dental staff and 0.9% were medical staff. All four groups varied in their responses pertaining to the knowledge of glaucoma. All the results were statistically significant ($p < 0.009$ to 0.001).

Conclusion: All employees except medical staff are poor in glaucoma awareness and all staff have poor knowledge of glaucoma which is variable among the different categories. It is inevitable for medical college employees to be aware of glaucoma. Augmentation of awareness and the knowledge of glaucoma among these personnel is the need of the hour.

Keywords: Awareness, Employees of tertiary care hospital, Glaucoma, Knowledge.

Introduction

Common man believes that personnel attached with a medical college hospital are aware about all diseases and trust them for medical related advice. Non-ophthalmic health care providers form an effective link between the ophthalmologists and the general population in propagating awareness about eye diseases.

Glaucoma is one of such diseases with high prevalence ranging between 2.6%⁽¹⁾ to 4.1%.⁽²⁾ It is a disease which damages optic nerve with or without increase in intraocular pressure and potentially cause vision loss.⁽³⁾ Due to the asymptomatic nature of the disease, particularly at the early stages, the diagnosis and treatment are often missed or delayed. As the disease results in irreversible damage to the visual function it is very important to diagnose and commence the treatment as early as possible which is possible only with enhanced awareness of the disease. Hence awareness and knowledge about glaucoma should be imposed among the population. Awareness among the general population is found to be poor by large number of studies. In South India the awareness was only 0.32% among rural⁽⁴⁾ and 2.3% among urban population.⁽⁵⁾

Health care providers play a major role in creating awareness among people. Often non-ophthalmic health care providers are the earliest point of contact with the population. Hence it is essential that these personnel are made aware about the disease.

To assess the level of awareness and knowledge about glaucoma among non-ophthalmic health care providers this study is conducted among employees of a

medical college and tertiary care hospital in South India. To the best of our intelligence no such studies have been reported from India.

Materials and Methods

This is a cross sectional study, which is conducted in accordance with Declaration of Helsinki along with institutional ethical committee's approval at a tertiary care medical college hospital located in Southern part of India, included 750 employees from various departments. After obtaining an informed consent, all participants were handed over a structured questionnaire and requested to fill in the presence of one of the investigators. The questionnaire was in English language because all the participants had passed at least primary education. Initial 10 responses were validated to look for any probable changes and the survey was proceeded with other employees. MS office Excel sheet was used to enter the data and SPSS (Statistical Package for the social studies), independent *t*-test and Pearson's chi-square test were used for analysis. The respondents were divided into four groups namely medical staff, dental staff, allied medical staff and non-medical staff. Statistical significance was stated by *P* value of less than 0.05.

Inclusion criteria:

- All employees who have passed at least primary education.
- Medical and dental interns.

Exclusion criteria:

- Ophthalmologists.
- Personnel currently working or worked in ophthalmic outpatient department, Operation Theater and ward.

Results

Out of 750 responses, 698 were valid and considered for analysis. Rest of them were incomplete.

Demography:

Table 1: Gender

Gender	Number	Percentage
Males	308	44.1
Females	390	55.9

55.9% (n=390) of all participants were females. The mean age was 28.34 ± 8.24 .

Table 2: Educational qualifications

Education	Number	Percentage
Post graduates	161	23.1
Graduates	492	70.5
High school	25	3.6
Primary education	19	2.8

Most of the participants were graduates followed by post graduates. Those who have completed high school and primary education were small in number. All the participants were divided into four categories namely:

- Medical department
- Dental department
- Allied health sciences department (includes nurses, radiographers, lab technicians etc.)
- Non-medical department

Table 3: Department wise categories

Department	Number	Percentage
Medical	319	45.7
Dental	32	4.6
Allied medical	227	32.5
Non-medical	120	17.2

Have you under gone an eye check-up?

31.5% of all staff have not undergone an eye check. This is statistically significant ($p < 0.001$). 48% of non-medical staff and 45% of allied medical staff had not

undergone an eye checkup at the time of conducting the study.

Table 4: Eye check

Have you undergone an eye check?	Yes (Percentage)	No (Percentage)
Medical	84	16
Dental	71.9	44.9
Allied medical	55.1	32.5
Non-medical	51.7	48.3

How often do you undergo eye check-up?

Out of 478 respondents who had undergone an eye check, only 42% (n=202) had yearly checkup. 16.5% (n=79) went to an ophthalmologist only when they were symptomatic.

Have you heard about glaucoma?

564 out of 698 respondents were aware about glaucoma which is 81 % of the employees. 74% of non-medical staff, 18% of allied medical staff, 3% of Dental staff and 0.9 % of medical staff have not heard of glaucoma. 99% of medical staff and 97% of dental staff were aware.

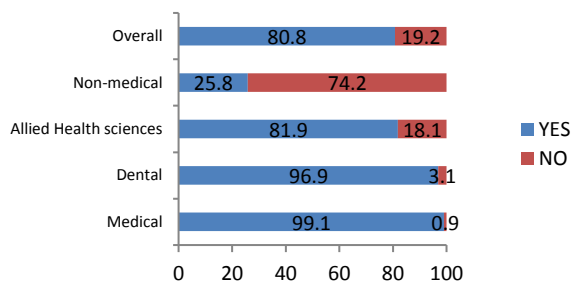


Fig. 1: Awareness of glaucoma

Knowledge

What is Glaucoma?

564 respondents who had heard about glaucoma were allowed to answer the rest of the questionnaire.

Out of 564, 513 participants knew that the disease is related to the increase in intraocular pressure that can damage the optic nerve head. 23% of dental staff, 20% of non-medical staff, 13% of Allied health staff and 5 % of medical staff thought otherwise.

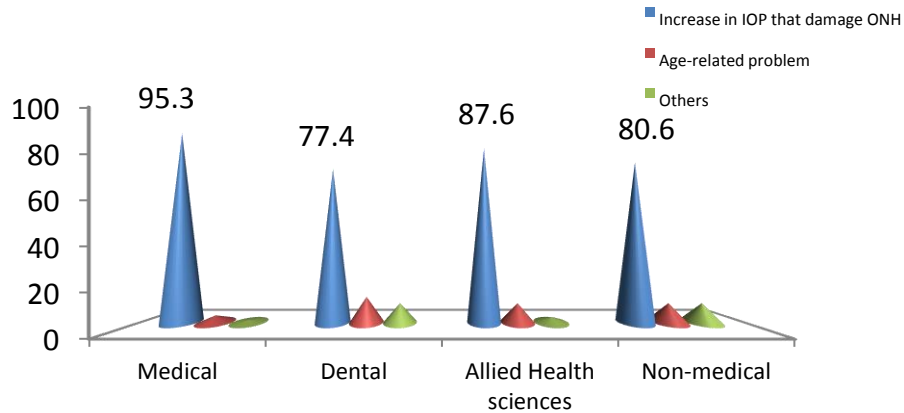


Fig. 2: What is Glaucoma?

What is the Strong risk factor for developing glaucoma?

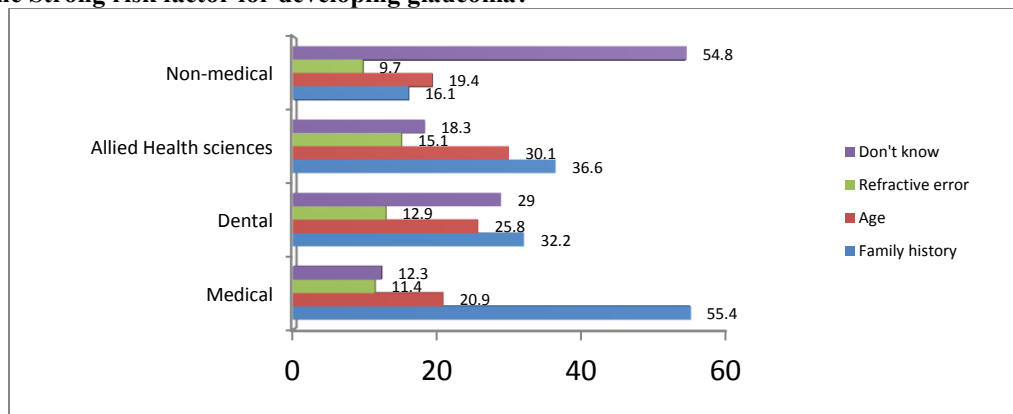


Fig. 3: Strong risk factor for developing glaucoma

55% of medical staff, 32% of dental staff, 37% of allied health staff and 16% of non-medical staff chose family history as a strong risk factor of glaucoma. Nearly 55% of Non-medical staff did not know about the strong risk factor of glaucoma. The values among the categories were statistically significant.

The following table illustrates how the different groups responded for various other questions pertaining to the knowledge of glaucoma.

Table 5: Responses to questions pertaining to knowledge of glaucoma

Questions	Medical dept			Dental dept			Allied medical dept			Non-medical dept			P value
	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	Yes	No	Don't know	
Is Diabetes a risk factor for glaucoma?	77.8	18.4	3.8	58.1	35.5	6.5	84.4	14.5	1.1	77.4	12.9	9.7	0.009
Do patients with glaucoma always have symptoms?	18.0	80.7	1.3	48.4	45.2	6.5	54.3	41.9	3.8	48.4	25.8	25.8	<0.001
Is Glaucoma always painful?	12.7	85.8	1.6	25.8	64.5	9.7	33.3	64	2.7	38.7	38.7	22.6	<0.001
Can Glaucoma affect vision?	95.9	2.2	1.9	90.3	3.2	6.5	88.2	7.0	4.8	74.2	12.9	12.9	<0.001
Is there any treatment for glaucoma?	96.8	2.2	0.9	87.1	3.2	9.7	82.8	15.1	2.2	71.0	16.1	12.9	<0.001
Can glaucoma cause blindness without treatment?	94.0	4.7	1.3	83.9	9.7	6.5	86	12.4	1.6	71.0	16.1	12.9	<0.001
Can lost vision be restored by treatment?	20.9	74.7	4.4	48.4	41.9	9.7	41.4	48.4	10.2	32.3	45.2	22.6	<0.001
Is Glaucoma directly related to blood pressure?	35.1	61.1	3.8	35.5	48.4	16.1	49.5	39.2	11.3	35.5	32.3	32.3	<0.001

Most of the staff were aware that diabetes can be a risk factor for glaucoma. 35.5% of dental staff, 18% of medical staff, 15% of allied medical staff and 13% of non-medical staff had opined that diabetes is not a risk factor. The difference among the different categories is statistically significant ($p=0.009$). The statistical significance is even more ($p<0.001$) among the groups when queried about the facts that glaucoma may be

asymptomatic, painless which can affect vision and the lost vision is irreversible eventually leading to blindness. Most of the respondents understood that glaucoma is treatable. 61% of medical staff and 48% of dental staff had agreed to the fact that glaucoma is not directly related to blood pressure whereas 50% of allied medical staff and 36% of non-medical staff believed otherwise.

Which type of vision is affected first in Glaucoma?

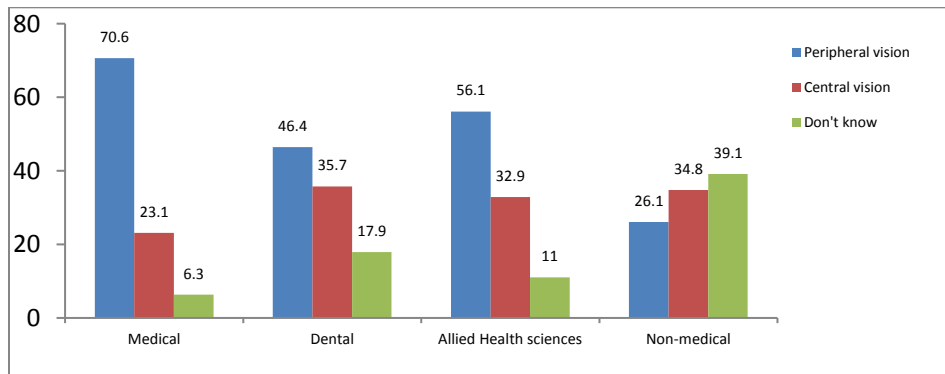


Fig. 4: Type of vision affected first in glaucoma

When asked about the type of vision which is affected first in glaucoma, 71% of medical staff, 46% of dental staff, 56% of allied medical staff and 26% of non-medical staff answered as peripheral vision whereas 23% of medical staff, 36% of dental staff, 33% of allied medical staff and 35% of non-medical staff opted central vision. Rest of them did not know. This is statistically significant ($p<0.001$).

What makes glaucoma worse?

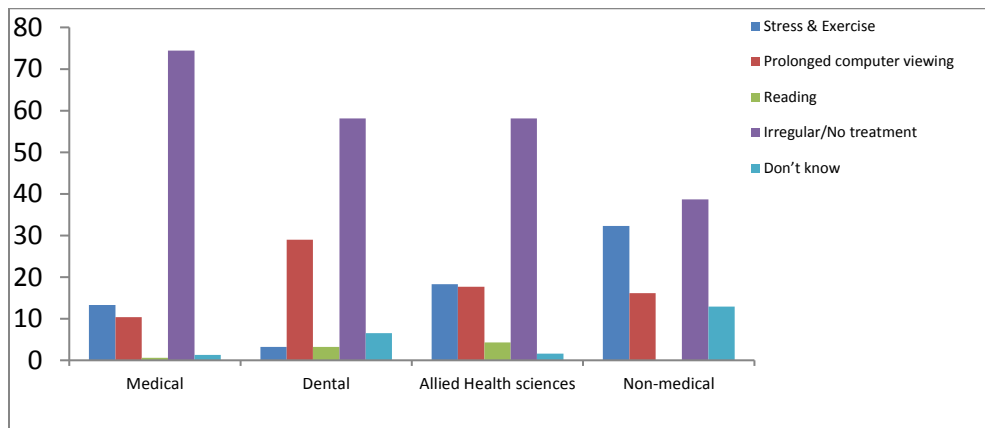


Fig. 5 Factor worsening glaucoma

Glaucoma worsens with irregular or no treatment which was rightly chosen by 74.4% ($n=235$) of medical staff, 58.1% ($n=18$) of dental staff, 58.1% ($n=108$) of allied medical staff and 38.7% ($n=12$) of non-medical staff. 32.3% ($n=10$) of non-medical staff chose stress and exercise. Few respondents chose prolonged computer viewing and reading as worsening factors.

Preventive measures of glaucoma: Though most of the respondents thought regular eye check would help to

prevent glaucoma few thought otherwise. 13% each of allied health staff ($n=24$) and non-medical staff ($n=4$) and three medical staff thought that healthy nutrition would prevent glaucoma.

Discussion

Awareness of glaucoma is studied extensively among general population^(4,5) and patients⁽⁶⁾ which is found to be poor. Few studies conducted among medical personnel reveal better awareness of glaucoma when

compared to general population.^(7,8,9) To make people aware of a disease, health care providers should be aware of that particular disease. In this case, glaucoma awareness among public can be promoted only if the health care providers are aware about the disease. Personnel employed in a tertiary medical care hospital are anticipated to have good awareness and knowledge of glaucoma. In this study the awareness and knowledge of glaucoma among the various categories of employees working in a tertiary care centre were analysed and compared. Probably there are no Indian studies conducted and compared among the health care providers.

Glaucoma can only be detected by comprehensive eye examination, as it is an asymptomatic disease at least in early stages. Hence it is important for the people to present themselves for eye examination and this can be achieved only with improved awareness. A recent eye checkup is an important predictor of awareness about eye diseases. Remarkable number of staff had not undergone an eye check in spite of being employed in a medical college. Our study brings out this lack of awareness as 16% (n=51) of medical staff, 28% (n=58) of dental staff, 45% (n=102) of allied medical staff and 48% (n=58) of non-medical staff have not visited an ophthalmologist. Overall 31.5% of all staff have not visited an ophthalmologist which is statistically significant ($p < 0.001$). Non-medical staff were not keen on regular ophthalmic examinations. Most of them go for eye check only when symptomatic.

In our study, the overall awareness of all employees is 81% which is above the general population. However the awareness among non-medical staff is only 26%. The awareness among the different groups is statistically significant. Survey conducted among Australian population reported 70% awareness⁽¹⁰⁾ and another one conducted in USA among patients, reported 72% awareness.⁽¹¹⁾ The awareness reported among population⁽¹⁰⁾ and patients⁽¹¹⁾ in developed countries were greater than that of the non-medical staff participated in our study. This lack of awareness reveals the under- utilization of community ophthalmic services in this region.

In Nigeria, clinical and administrative staff of a health institution were surveyed⁽⁸⁾ and the differences were found between the two groups in terms of the type of vision that is first affected, the painless nature and the irreversible blindness due to glaucoma were not statistically significant. In contrast, our study found statistically significant differences between the four categories i.e. medical, dental, allied health sciences and non-medical staff in all the variables tested such as queries about the facts that glaucoma may be asymptomatic, painless which can affect vision and the lost vision is irreversible eventually leading to blindness.

It should not be surprising that medical staff (non-ophthalmologists) have better awareness (99%) than non-medical staff (26%) because glaucoma is taught

during their curriculum. However there is a significant decline in the knowledge about the disease. This inadequacy in knowledge can be tackled by conducting periodic lectures, group discussions and symposiums to refresh the knowledge about glaucoma.

Apart from focusing the medical staff, periodic educative programs including audio-visual programs and lectures are warranted to improve the awareness and knowledge of para-medical and non-medical staff. Such programs can be included in world Glaucoma week. Video assisted awareness programs and workshops can be included in the curriculum of medical, dental and allied health sciences. Non-medical staff can be involved whenever lectures on glaucoma is conducted.

Conclusion

Non-medical and para medical staff have less awareness and poor knowledge about glaucoma. Though the awareness is good among medical staff, the knowledge about glaucoma certainly needs reinforcement. Sensitization of the staff in health care institutions can be executed by periodical educative programs, continuing medical/nursing education programs (CMEs/CNEs), video assisted awareness programs and symposiums. Awareness programs should also include non-medical and para medical staff.

Conflict of interest: Nil

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