Original Article

# Awareness of Glaucoma in Different Groups of Urban Population

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**Purpose:** To evaluate the level of glaucoma awareness among different groups of urban population

**Material and Methods:** A survey was conducted by Ophthalmology unit-II, Ameer-ud-Din Medical College / Post Graduate Medical Institute / Lahore General Hospital, Lahore; Pakistan. Survey was conducted in three different groups of civilians using non probability, purposive sampling. Group I consisted of 150 Medical Students of first and second year in their MBBS; Group II comprised of 115 student nurses; and Group III was composed of 150 adults from all public sectors. This study is an observational and cross sectional study.

**Results:** A total of 415 adults answered the questionnaire made for awareness of glaucoma. In Group I, 13.3% stated that they did not know what glaucoma meant. All in group II answered as to what glaucoma meant; whereas, 48.7% in group III had not heard about glaucoma. In Group I, 36% said that it was raised intra ocular pressure, 21.3% said it was an eye disease, 16.7% thought that it was another name for blindness, 8% wisely answered it as an optic neuropathy, 2.3% translated the word glaucoma in their local language (Urdu) as 'kalamotia', 1.3% students thought that it was a glucose related disorder, or a form of diabetes and 0.7% thought that it was a name given to blindness due to diabetes mellitus. In Group II, 80.9% nurses stated that the term 'glaucoma' meant a raised intraocular pressure, 15.7% thought that glaucoma meant blindness, 2.6% stated that it was an optic neuropathy and 0.9% wrote that glaucoma meant headache and vomiting. In Group III, 24% participants said glaucoma meant loss of vision, 22% stated it was an eye disease, 4.7% knew that it was due to raised intraocular pressure, and 0.7% said that glaucoma meant watering from the eye.

**Conclusion:** The awareness of glaucoma is low in the general public. An efficient information, education and communication strategy needs to be designed for early detection and treatment of glaucoma to prevent blindness.

**Key words:** Glaucoma, blindness, intraocular pressure.

Glaucoma is the second leading cause of blindness in the world[1]. The incidence of glaucoma ranges between 6.5 to 7.5% indifferent parts of the world.[2,3] With such a high incidence of a blinding disease, early detection of glaucoma is essential to prevent blindness. Public awareness of this almost silent disease plays a pivotal role in bringing the high risk patients to the ophthalmologists, and hence, preventing the dreadful results. Spreading knowledge about the disease not only helps to prevent blindness but also reduces the economic burden of the disease[4]. Report of glaucoma awareness surveys in different parts of the world have been used to identify least knowledgeable subgroups in order to most effectively use the resources for public education.[5,6] No such survey has been previously published from Pakistan before. Therefore we carried out survey to find out the awareness level of glaucoma in medical students, nurses and general public in Lahore. The most common source of

information has been found to be doctors in a study done in Ethiopia[7]. Three groups were used in the survey to estimate the level of knowledge among group of people with different levels of education.

## MATERIAL AND METHODS

A Survey was conducted by Ophthalmology unit-II Amee-rud-Din Medical College / Post Graduate Medical Institute / Lahore General Hospital, Lahore; Pakistan. Survey was conducted in three different groups of civilians using non probability, purposive sampling. Group I consisted of 150 Medical Students of first and second year in their MBBS; Group II comprised of 115 student nurses; and Group III was composed of 150 adults from all public sectors.

The following were included in the study. Any one above age 18 years irrespective of the gender was included. First group (Medical students): All medical students of 1st and 2nd year from Ameer-ud-Din Medical College, having no clinical exposure to patients. These students were attending their basic sciences lectures. Second group (Nursing students): All student nurses from Nursing school, Lahore General Hospital, Lahore; who also had some clinical exposure during ward duties in addition to lectures on basic sciences. Third group (General public): People belonging to any field of life whether educated or not but had never received any medical education were included in this group.

The following were excluded from the study. First group (Medical students): All graduates, students of 3rd year and above and anyone having clinical exposure (electives).Third group (General public): Anyone who had any sort of diploma / degree in medical education.

Survey data was collected through a Performa having both open ended and close ended questions. All those who fulfilled inclusion criteria filled survey form themselves anonymously (except those who were uneducated or had language problem). Survey questions were asked in simple language (table 1) and their answers recorded.

## RESULTS

A total of 415 adults answered the questionnaire made for awareness of glaucoma. Group I, comprising of 150 medical students had a mean age of 19 years. Male students were 40.9% and females were 59.3%. Group 11 had a mean age of 22 years and all participants were females. In Group III, mean age was 39 years, where 63.3% were male participants and 36.7% were females.

In Group I, 13.3% stated that they did not know what glaucoma meant. All in group II answered as to what glaucoma meant; whereas, 48.7% in group III had not heard about glaucoma. In Group I, 36% said that it was raised intra ocular pressure, 21.3% said it was an eye disease, 16.7% thought that it was another name for blindness, 8% wisely answered it as an optic neuropathy, 2.3% translated the word glaucoma in their local language (Urdu) as 'kalamotia', 1.3% students thought that it was a glucose related disorder, or a form of diabetes and 0.7% thought that it was a name given to blindness due to diabetes mellitus.

In Group II, 80.9% nurses stated that the term 'glaucoma' meant a raised intraocular pressure, 15.7% thought that glaucoma meant blindness, 2.6% stated that it was an optic neuropathy and 0.9% wrote that glaucoma meant headache and vomiting.

In Group III, 24% participants said glaucoma meant loss of vision, 22% stated it was an eye disease, 4.7% knew that it was due to raised intraocular pressure, and 0.7% said that glaucoma meant watering from the eye.

In response to question about the source of information; in Group I, 27.3% had gathered information from the basic sciences' lectures in the college, 10.7% read about glaucoma in different books, 6.7% gathered information from the internet, 3.3% had read about it in a medical dictionary, 2% were informed about glaucoma from the television and only 0.7% was informed by another patient and 0.7% was a patient himself. 24% of the general public did not answer the question in this group.

In Group II, 72.2% of the nurses stated books as their source of information, 25.2% had known about it from the dictionary, 0.9% got information from the doctors in the ward, 0.9% from the internet and 0.9% was a patient herself.

There was no source of information about glaucoma in 62% of the general public participants in Group III. 13.3% knew about the disease from involved family members, 12% had friends suffering from glaucoma, 9.3% were told about glaucoma by a doctor, 1.3% were patients themselves, 1.3% read about glaucoma in a book and 0.3% were informed through media.

As an answer to the question if someone could have glaucoma without symptoms; in Group I, 23.3%

**Table 1:**

| Glaucoma Awareness Survey Questionnaire | |
|---|---|
| 1. | Please state your age and gender. |
| 2. | Year of Medical College / Year of Nursing School / have you ever been to school? |
| 3. | What does "Glaucoma" mean? |
| 4. | What is the source of your information? |
| 5. | Can someone have glaucoma without any symptoms? |
| | Yes / No Not sure. |
| 6. | Is blindness due to glaucoma reversible? |
| | Yes / No Not sure. |

**Table 2:**

| | Group I (n = 150) | Group II (n = 115) | Group III (n = 150) |
|---|---|---|---|
| **What does Glaucoma Mean?** | Don't Know 13.3% (20) | Increased IOP 80.9% (93) | Don't Know 48.7% (73) |
| | Blindness 16.7% (25) | Blindness 15.7% (18) | Eye disease 22% (33) |
| | Eye Disease 21.3% (32) | Optic Neuropathy 2.6% (3) | Loss Vision 24% (36) |
| | Increases IOP 36% (54) | Headache, Vomiting 0.9% (1) | Increased IOP 4.7% (7) |
| | Optic Neuropathy 8% (12) | | Watering from eye 0.7% (1) |
| | Kaala Motia 2.3% (4) | | |
| | Glucose Disorder 1.3% (2) | | |
| | Blindness due to DM 0.7% (1) | | |
| **What is the source of your information?** | Lecture 27.3% (41) | Books 72.2% (83) | No information 62% (93) |
| | Senior Students 16% (24) | Dictionary 25.2% (29) | A Patient in Family 13.3% (20) |
| | Books 10.7% (6) | Doctors 0.9% (1) | Friends 12% (18) |
| | No information 24% (36) | Internet 0.9% (1) | Doctors 9.3% (14) |
| | Dictionary 3.3% (5) | Patients 0.9% (1) | Self Patient 1.3% (2) |
| | Internet 6.7% (10) | | Books 1.3% (2) |
| | T.V 2% (3) | | Media 0.7% (1) |
| | Friends 2% (3) | | |
| | From Patients 0.7% (1) | | |
| | Info Poster 0.7% (1) | | |

**Table 3:**

| | | Yes | No | Not Sure |
|---|---|---|---|---|
| **Is blindness due to Glaucoma reversible?** | Group I (n = 150) | 20.7% (31) | 38% (57) | 41.3% (62) |
| | Group II (n = 115) | 20% (23) | 80% (92) | 0% (0) |
| | Group III (n = 150) | 12% (18) | 22.7% (34) | 65.3% (98) |
| **Can someone have Glaucoma without symptoms?** | Group I (n = 150) | 23.3% (35) | 34% (57) | 42.7% (62) |
| | Group II (n = 115) | 23.48% (27) | 66.1% (76) | 10.4% (12) |
| | Group III (n = 150) | 19.3% (29) | 10.7% (16) | 70% (105) |

said yes, 34% said no and 44.7% were not sure. In group II, 23.48% said yes, 66.1% said no, and 10.4% were not sure. In Group III, 19.3% said yes, 10.7% said no, and 70% were not sure.

The next question was if the blindness from glaucoma was reversible? In Group I, 20.7% of the medical students said that yes it was reversible, 38% said it was not reversible and 41.3% were not sure. In Group II, 20% I of the nurses thought blindness because of glaucoma was reversible and 80% wrote that it was irreversible.

In response to the risk factors associated with glaucoma, in Group I, 18.7% thought family history was important, 36.7% thought old age and 44.7% were not sure. In Group II, 19.1% thought family history as a risk factor, 51.3% old age as a risk factor and 29.6%.

In response to the question about what was the perceived risk of getting glaucoma in patients at risk; In Group I, 32% thought that there was a high risk, 10% answered that there no risk and 58% were not sure. In Group II, 94.8% stated that there was a high risk, 0.9% said there was no risk at all and 4.3% were not sure. In group III, 16% said there was a high risk of getting glaucoma in the particular group, 0.7% said there was no risk at all and 83% were not sure.

## DISCUSSION

Although different awareness studies have been carried out in the developing world to find out the level and depth of knowledge about glaucoma in the general public,[7,8] we decided to include the awareness level of medical students and nurses for a comparison. In the study mention above[7], the most common source of information among the public were the ophthalmologists attending to the glaucoma patients.

In our study 4.7% of the general population of the city of Lahore knew about glaucoma to the extent that it was a raised intraocular pressure that caused blindness. This figure is almost double to what was found in the urban population of Ethiopia 2.4%[7], and in the urban population of India 2.3%[8]. But our sample size is small. 150 civilians from all classes ranging from house maids and domestic guards to house wives and high class office bearers, only seven knew what glaucoma meant. There was no difference between the awareness levels in both genders, which is similar to the studies done in the western world.[9-13,16]

We found that the awareness about glaucoma was depressingly low in the general public but those who had heard about glaucoma also had a good knowledge about it. This is in contrast to two studies of glaucoma carried out in Australia where a reasonable portion of population had heard about glaucoma but only a few had knowledge about it.[10,13] In Chennai, India[14], a similar survey was carried out, where it was found that rate of awareness about glaucoma in rural population was 13.3%. 0.5% had a good knowledge, 4% had a fair knowledge and 4.2% only knew that glaucoma was an eye disease. This is again a very dissimilar result as compared to our result.

Ophthalmologists were found to be the most important source of information in our study, whereas, friends were the main source of information in a German survey[11], and media was reported to be the most important in rural India[14]. Information from the close acquaintances was apparently the only source in Southwestern Ethiopia[10]. It was particularly observed that health information about ophthalmological diseases was scanty on the media, while information campaigns on diseases like dengue fever were very successfully carried out through media.

Educating people about the glaucoma is mostly being carried out by the ophthalmologists themselves, which is only limited to the patients attending the ophthalmology clinics and tertiary hospitals. Nurses, medical students and media should be used to spread the awareness about the disease. All those who are suffering from the disease should be convinced to get their relatives screened for glaucoma. Free screening services should be available to those coming for screening, as it is carried out in the developed countries[16].

Although our sample size is small, but it has given us a rough idea that to improve awareness of the disease we can effectively use nurses and medical students in helping the general awareness of the disease. Media is another very important and completely neglected source, that can play a vital role in bringing the suspects of glaucoma to screening centers and hence an early diagnosis.

## CONCLUSION

The awareness of glaucoma is low in the general public. Our sample size is small but similar results can be suspected in larger population group studies. It was satisfactory to find the level of knowledge in the nurses, who can be effectively used for spreading awareness. An efficient information, education and communication strategy needs to be designed for early detection and treatment of glaucoma to prevent blindness.

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