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RESEARCH ARTICLE

GLAUCOMA AWARENESS AND KNOWLEDGE IN PATIENTS ATTENDING OPHTHALMOLOGY OPD AT AIIMS, RAIPUR

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ABSTRACT

Introduction: Worldwide glaucoma is the second leading cause of preventable blindness after cataract. In developed countries less than 50% of affected people are aware about their disease, awareness is further lower in developing world. Incidence in India is steadily rising and by year 2020 it is projected to be second largest home for glaucoma cases. Glaucoma is irreversible and remains asymptomatic until it is in a very advanced stage. Early diagnosis and treatment remains an important cornerstone in management of this deadly disease. Published data indicates that late presentation to doctor is an important risk factor for subsequent blindness and is associated with poor awareness about the condition. Patient's knowledge / lack of knowledge concerning eye care may play a significant role in seeking timely eye care treatment. For this, efficient information, education and communication material (IEC) and population screening strategy needs to be designed to increase the community's knowledge about glaucoma.

Aims and objective: To evaluate the awareness and knowledge about glaucoma in patients attending Ophthalmic outpatient department (OPD) at a tertiary center in Central India.

Material and methods: The study was conducted over a period of six months from January to June 2014 at Ophthalmology OPD. A pre-prepared questionnaire was given to all participants between ages of 40-70 years, which included participant's socio-demographic profile, awareness, knowledge about glaucoma and the usefulness of awareness raising strategies. The source of awareness about glaucoma was also questioned.

Results: Total number of participants was 500, out of which 337 (67.4%) were aware and 163 (32.6%) unaware about glaucoma. Among aware participants 148 (44%) were having knowledge of glaucoma and 189 (56%) were not having knowledge of glaucoma. Only 23% of aware participants were screened for glaucoma. 77% participants know that glaucoma is irreversible while only 36% know that it is blinding condition. Mass media was found to be most effective awareness raising strategy.

Conclusion: Public awareness of this almost silent disease plays a pivotal role in bringing the high-risk patient to the ophthalmologists, and hence, preventing the dreadful results. However, only spreading the awareness about glaucoma is not sufficient to prevent blindness but people need to be informed and educated about the disease. An aware and knowledgeable person is in a good position to inform others about need for glaucoma screening program to utilize screening services provided by eye care personnel. This could diminish the morbidity and economic burden of the disease.

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INTRODUCTION

Worldwide glaucoma is the second leading cause of preventable blindness after cataract. The prevalence of glaucoma globally is about 66 million and 6.7 million people are blind due to glaucoma (Quigley *et al.,* 1996). In developed countries less than 50% of affected people are aware about their disease, awareness is further lower in developing world.[1]Incidence in India is steadily rising and by year 2020 it is projected to be second largest home for glaucoma cases (Quigley *et al.,* 2006). Glaucoma is irreversible and remains asymptomatic until it is in a very advanced stage. Early diagnosis and treatment remains an important cornerstone in management of this deadly disease.

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Published data indicates that late presentation to doctor is an important risk factor for subsequent blindness and is associated with poor awareness about the condition (Saw *et al.,* 2003). Patient's knowledge / lack of knowledge concerning eye care may play a significant role in seeking timely eye care treatment. For this, efficient information, education and communication material (IEC) and population screening strategy needs to be designed to increase the community's knowledge about glaucoma. When glaucoma is detected early and appropriate treatment is instituted 90% of blindness from glaucoma can be prevented. Studies across the globe have clearly documented the potential cost savings associated with regular preventive eye care as compared to cost of vision loss (Javitt *et al.,* 1995). Raising awareness of glaucoma, early detection and prevention of glaucoma progression is the key to halt the effects of glaucoma. Hence this study was done with

the aim to evaluate awareness and knowledge about glaucoma and also to identify specific awareness raising strategies about the disease, in patients attending the ophthalmic outpatient department (OPD). The outcome of this survey may help to provide recommendations for improving public awareness campaign for glaucoma.

MATERIALS AND METHODS

Present study was a hospital based observational study conducted over a period of six months (January to June 2014) at the ophthalmology OPD of AIIMS, Raipur. A questionnaire was designed in both English and local language (Hindi). This questionnaire was given to 20 patients coming to outpatient department of our hospital, for adaptation to locally used terms. The questions not clear to respondents were modified and retested on another 20 subjects. Thus based upon this 'pilot survey' the questionnaire was validated. Informed consent was taken from all participants. Those participants who 'ever heard of glaucoma' before recruiting in the study were categorized as aware and were further assessed for their knowledge about the disease while those who never heard about the glaucoma were categorized as unaware and their knowledge about the disease was not further assessed. Amongst aware subjects those having some understanding of the disease were defined as knowledgeable which is further graded based on the subjects collective responses to questions as no / poor knowledge (Score: <0 or 0), some/ fair knowledge (Score: 1-3), good knowledge (Score: 4-6). The questionnaire consisted of various sections, which included participant's socio demographic profile (age, gender, education level, religion, residential address), awareness, knowledge about glaucoma and usefulness of effective awareness raising strategies. Each question has three options and the participant had to tick the response of their choice (Appendix 1). Participants who were diagnosed cases of glaucoma were excluded from the study. Trained optometrists and health care professionals, who had optimum knowledge about glaucoma and the questionnaire, did the survey. Participation in the study was voluntary. Any explanations in questionnaire, reading assistance to illiterate participants, wherever required was provided. The data was analyzed using statistical package SPSS version 12.0.

RESULTS

Out of 726 subjects to whom the questionnaire was given, 500 subjects completed the questionnaire (response rate 69%). Among the responders, 355 (71%) were males and 145 (29%)females. 210(42%) participants belong to age group 40-50 year while 145 (29%)participants belong each to 51-60 and 61-70 year age group. Five percent of participants were illiterate, 20% had completed primary education, 30% secondary and 45% tertiary education. Four hundred (80%) of the participants were Hindus, 75(15%) were Muslims and 25(5%) were Christians (Table 1). Out of 500 participants 337(67.4%) were aware of glaucoma (heard about glaucoma before being recruited into the study) and 163 (32.6%) unaware (never heard of glaucoma). Among aware participants 78% were males and 22% females. Awareness was found to be 45% in the age group 40-50 year while it was 30% and 25% in 51-60 and 61-70 year age group respectively. Among the aware participants 62% had completed tertiary level of education, 23% secondary level and 10% primary level while 5% participants were uneducated. Only 23% of aware participants were screened for glaucoma. Seventy seven percent participants know that glaucoma is irreversible while only 36% participants knows that it is blinding condition. Among aware participants, knowledge was found in 44%, out of which 56% were having poor knowledge (score 0 or <0), 32% some knowledge (score 1-3) and 12% good knowledge (score 4-6). Out of knowledgeable participants only 49% got themselves screened for glaucoma. Mass media (television, radio, newspaper) was found to be most effective awareness raising strategy (59%) followed by health communication, spreading awareness by celebrity/well known personality and mass population screening in 23% 13% and 5% respectively (Table 2). Public places were found to be best suited for keeping health care material for raising awareness about the disease 45%, followed by health facility 28%, community meeting point 16%, bank and pension point 11%.

DISCUSSION

Worldwide glaucoma is the second leading cause of preventable blindness after cataract. Incidence in India is steadily rising. As per study published by George *et al.,* 2010 glaucoma incidence in India stands at approximately 11 million cases and up to year 2020 it is projected to be second largest home for glaucoma cases. Glaucoma is irreversible and remains asymptomatic until it is very advanced. Early diagnosis and treatment remains an important cornerstone in management of this deadly disease. Retrospective analysis by Grant *et al.* have shown that patients need to be educated and made aware of the premonitory symptoms so as to prevent visually blinding complications of glaucoma (Grant *et al.,* 1982). In India many studies have previously been done about glaucoma awareness in rural as well as urban population (Dandona *et al.,* 2001; Krishnaiah *et al.,* 2005). Awareness means that the participants have heard about the condition but he/she may or may not have in depth knowledge about that condition. In a study done by Lau *et al.* in 2002 it was reported that about 80% of the respondents were aware of glaucoma, however only 10% could describe the disease related symptoms accurately. About 40% stated that they had heard of the disease but could not describe its symptoms (Lau *et al.,* 2002).

In our study we found 67.4% participants were aware of glaucoma, which was comparable with the findings of Taylor *et al.* 1998 in a study done in residents of suburbs of Melbourne, Australia who found awareness to be 79% (Livingston *et al.,* 1998). While it was13.5% in Chennai glaucoma study done by Sathyamangalam *et al.* 2009 for urban and rural residents of Chennai in India (Sathyamangalam *et al.,* 2009). In Blue Mountains Eye Study, 93% of participants were aware of glaucoma (Mitchell *et al.,* 1996). In our study younger age group was found to be more aware as compared to their counterparts. The probable reason for this could be that maximum participants belong to age group 40-50 years. In Chennai glaucoma study by Sathyamangalam *et al.* 2009 subjects in the age group 60 - 79 years were 3 times more likely to be aware about glaucoma as compared to 40 - 49 year group (Sathyamangalam *et al.,* 2009). Knowledge level in our study was found to be 44% as compared to 19% in study done by Taylor et al. 1998 in the suburbs of Melbourne, Australia (Livingston *et al.,* 1998). In Chennai Glaucoma study, Sathyamangalam *et al.* 2009 it was found to be 8.7% in urban and rural residents of Chennai in India (Sathyamangalam *et al.,* 2009). The reasons for higher level of knowledge in our study could be that majority of participants have completed tertiary level of education and it is primarily a hospital based study.

In our study we found that illiterates and participants with below primary level of education were more likely to be unaware about glaucoma; this was consistent with studies done elsewhere (Mitchell *et al.,* 1996; Saw *et al.,* 2003; Michielutte *et al.,* 1984; Gasch *et al.,* 2000) and indicates lack of education about glaucoma among those who are at risk. It calls for urgent health education programs on glaucoma, targeting initially, the population at risk. In summary level of awareness and knowledge in our study were found to be comparable with studies done in developed countries, while higher than Chennai glaucoma study and lower than Blue Mountains eye study. Younger subjects and males were more aware of glaucoma reason being majority of participants in our study were males and of age group 40-50 years so no positive correlation can be appreciated. Limitations of this study were, this study was hospital based and not community based, so majority of unaware population in a community is still undercover. This study was done in a tertiary hospital, so most of the participants were of urban origin and sample size was also small to validate the findings of the study. In conclusion, our study shows level of awareness and knowledge about glaucoma in participants attending a tertiary health care center. In spite of having knowledge about the disease only half of the population under study underwent screening for glaucoma, this shows their indifferent attitude towards their own health problem, hence we first need to assess the extent of lack of glaucoma awareness at a large scale. Secondly, to reduce the economic burden and to improve utilization of health care facilities, we not only need to sensitize the population but also to educate the population about the nature of the disease, consequences of delayed diagnosis and the benefits of early diagnosis and treatment. Community outreach programs should be carried out periodically to screen people in the community and to offer qualitative treatment.

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APPENDIX

Appendix 1. Participant's information

Name:
Age / Gender:
Education status (tick √ any one)
(a)Completed primary education (1-5 year of education)
(b)Completed secondary education (5-10 year of education)
(c)Completed tertiary education (10+2 and higher)
(d)Never attended school / did not completed primary education.

Entry question

1. Have you ever heard of glaucoma
(a) Yes
(b) No

If your answer is no, please return the form; and if it's yes complete it

Mark (√) in appropriate option

Glaucoma awareness

1. Do risk of glaucoma increases with age
   a) Yes
   b) No
   c) Not sure
2. Can anyone have glaucoma
   a) Yes
   b) No
   c) Not sure
3. Can glaucoma cause blindness
   a) Yes
   b) No
   c) Not sure
4. Is glaucoma treatable condition
   a) Yes
   b) No
   c) Not sure

Glaucoma knowledge

- Vision is affected early in glaucoma
  a) Yes
  b) No
  c) Not sure
- Glaucoma has familial predisposition
  a) Yes
  b) No
  c) Not sure
- Can glaucoma occur without any symptoms
  a) Yes
  b) No
  c) Not sure
- Visual loss due to glaucoma is
  a) Reversible
  b) Irreversible
  c) Not sure
- Do information, education and communication materials useful in increasing awareness about glaucoma
  a) Yes
  b) No
  c) Not sure
- Which specific awareness raising strategy would be necessary to enhance glaucoma awareness?
  a) Health communication by ophthalmic medical personnel
  b) Mass population screening
  c) Mass media education (television, radio, newspaper)
  d) By involving celebrities/ well known personalities to disseminate glaucoma awareness message

Mark most appropriate

- Have you undergone ocular examination/screening in past one year

a) Yes
b) No

- Source of your information/knowledge about glaucoma
  a) Hospital/Eye camp/Health personnel
  b) Mass media (TV/Radio/Newspaper)
  c) Relative/Friend
  d) Any other source

3 Where poster and brochures on eye health care should be placed?

a) Community meeting points (temples, mosques, churches, gurudwara)
b) Public places (shopping malls, parks, restaurants, museums)
c) Health facilities
d) Banks/ pension points

Table 1. Demographic characteristics of participants

Total no of participants	726
Total no of participants completed questionnaire	500 Response rate 69%
Gender	
Male	355 (71%)
Female	145 (29%)
Age wise (years)	
40- 50 yrs	210 (42%)
51-60 yrs	145 (29%)
61-70 yrs	145 (29%)
Literacy status	
Illiterate	25 (5%)
Primary	100 (20%)
Secondary	150 (30%)
Tertiary	225 (45%)
Religion	
Hindu	400 (80%)
Muslims	75 (15%)
Christians	25 (5%)

Table 2. Frequency distribution of awareness and knowledge of glaucoma among study participants

Variables	Total (n = 500) Yes (%)
(a)Awareness	
1.Have you ever heard of the eye condition glaucoma	337 (67.4%)
2.Not heard about glaucoma	163 (32.6%)
3. Is glaucoma treatable condition	239 (71%)
4. Can glaucoma cause blindness	121 (36%)
(b) Knowledge	
1.Is visual loss due to glaucoma irreversible	77 (23%)
2.Can glaucoma occur without any symptoms	64 (19%)
3.Vision is affected early in glaucoma	88 (26%)
4.Glaucoma has familial predisposition	94 (28%)
5. Awareness raising strategy	
Mass media	295 (59%)
Health communication	115 (23%)
Spreading awareness by celebrity	65 (13%)
Mass population screening	25 (5%)

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