

Awareness and knowledge about glaucoma and cataract in rural population and urban population

Abstract

Purpose: To assess the awareness and knowledge about cataract and glaucoma in rural and urban population.

Methods: Study was conducted over a period of one year from September 2016 to September 2017 by evaluating 2000 subjects, 1000 subjects belongs to urban population and 1000 subjects belongs to rural population between the age group of 15-75 years. An interview was done by providing self-prepared questionnaire to record the various responses of the subjects. Having heard of the eye disease in question was defined as awareness and having some understanding about the disease was defined as knowledge.

Results: There were 469(46.9%) males and 531(53.1%) females from the rural population and 460(46.0%) males and 540(54.0%) females from the urban population. In urban population awareness of cataract and glaucoma is more between the age group of 41-60. In rural population subjects between the age group of 20-40 is more aware about cataract while above 60 is more aware about glaucoma. In the study population peoples who are graduates had better awareness on cataract and glaucoma. In urban population out of 927 subjects who have heard about cataract, 686(74.0%) subjects had good knowledge while 241(24.2%) subjects had poor knowledge. In the case of glaucoma 261(34.9%) subjects in the aware group had good knowledge and 486(65.1%) had poor knowledge. Knowledge of subjects about cataract 717(80.3%) is found to be good and 176(17.6%) is found to be poor in rural population. Among the 893 subjects of the aware group 259(37.2%) subjects had good knowledge while 437(62.8%) had the poor knowledge on glaucoma.

Conclusion: Our study strongly recommended that proper health education in the form of public health care programmes and screening programmes helps to reduce the vision related problems.

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Introduction

Cataract and glaucoma are the leading causes of blindness worldwide. Cataract increases with age and it can be treated. Glaucoma is chronic progressive disease of the optic nerve which leads to irreversible blindness. Cataract develops slowly, and leads to blindness if left untreated.¹ Cataract commonly affects both eyes but generally develop in one eye before the other.² It has been documented to be the most significant cause of bilateral blindness in India. The process of caring and treatment for a patient with functional impairment due to cataract should start when a functional visual disability is recognized. It was estimated that 3.8 million persons become blind due to cataract per year in India.³ Some studies done in rural area of eastern China showed that for more than one year, a total of 89.6% of patients had been aware of their condition while 49.8% had known that the cataract could be treated.⁴

Globally glaucoma is the second leading cause of blindness after cataract.⁵ It is an optic neuropathy associated with progressive loss of visual field, which can lead to the total irreversible blindness. This silent killer of sight progresses without any obvious symptoms. Prevention of glaucoma blindness is only acquired by early detection and treatment. The appropriate glaucoma treatment requires proper

awareness and treatment. According to the study, based on the global data on visual impairment in the year 2002 showed that about 60 million subjects are to be affected by Glaucoma.⁵ There are several known risk factors for glaucoma which includes increasing age, family history of glaucoma, near sightedness, high blood pressure, diabetes mellitus and elevated intraocular pressure. So cataract and glaucoma are the two important causes of avoidable blindness. Some studies on awareness of eye diseases in southern Indian urban population have been reported that 73.1% of the subjects were aware of cataract where only 2.4% were aware of glaucoma.⁶ A population based survey was performed to assess the awareness and knowledge of age related eye diseases by Rehna Rasheed evaluated that 82.9% had aware about cataract where only 19.2% aware about glaucoma.⁷ Hence in this study we evaluated the awareness and knowledge about glaucoma and cataract from the given population in Kerala.

Materials and methods

This observational cross-sectional study was conducted in Rural & Urban areas of Ernakulam, Thrissur, Alappuzha and Kottayam which are the four districts of Kerala. This setting was chosen on the basis of investigator's feasibility, in terms of availability and accessibility of subjects. Study was conducted over a period of one

year from September 2016 to September 2017 by evaluating 2000 subjects, 1000 subjects belongs to urban population and 1000 subjects belongs to rural population between the age group 15-75 years. The subjects who belongs to panchayath and municipality, considered as rural and subjects belongs to city corporation considered as urban. Patients were informed about the nature of the study and each of the subjects underwent a oral consent procedure. Official permission was also taken from the hospital's ethics committee.

A self-prepared questionnaire was used to collect the data from the subjects. The questionnaire was made in English and Malayalam which is the regional language of these four district areas. Optometry students are appointed to interview and record the responses of the subjects. Subjects were asked to answer all the questions to the best of their knowledge. The most of the questions required yes/no response and subjects were asked to tick the choices they have given. The subjects were not allowed to take questionnaires away. The questionnaire has two parts, first part deals with the demographic details such as name, age, sex and occupation and the second section includes 10 questions that evaluate the awareness and knowledge about cataract and Glaucoma. Their answers were evaluated for accuracy by a senior ophthalmologist. Among the total 10 questions, 5 were constructed for glaucoma and the remains for cataract. Knowledge and cataract were graded as good and poor. 1 mark is provided for each question, knowledge is considered as good if the subject scores 4-6 questions and considered as poor if it is 3 or less. Having heard of the eye disease in question was defined as awareness and having some understanding about the disease was defined as knowledge. Statistical Package for social sciences (SPSS) version10 was the statistical method used for the data analysis.

Results

Statistical Package for social sciences (SPSS) version10 was used for the data analysis. For the statistical evaluation a two tailored probability value 0.05 was considered as statistical significant. Of the total 2000 people involved in the study all of them completed the questionnaire and the response rate was 100%. There were 469(46.9%) males and 531(53.1%) females from the rural population and 460(46.0%) males and 540(54.0%) females from the urban population. The mean age of the subjects was 47 and 46 from rural and urban population respectively. Most of the study population comes in between 41-60 age groups (Table 1&2). Here we categorized the study population into 4 groups high school, higher secondary, graduates, post graduates on the basis of educational status (Table 3).

Table 1 Age distribution on study population

Age	Urban	Rural	Total
<=20	28 2.8%	54 5.4%	82 4.1%
20-40	377 37.7%	238 23.8%	615 30.8%
41-60	357 35.7%	426 42.6%	783 39.2%
>60	238 23.8%	282 28.2%	520 26.0%

Table 2 Gender on study population

Gender	Urban	Rural	Total
Male	460 46.0%	469 46.9%	929 46.5%
Female	540 54.0%	531 53.1%	1071 53.6%

Table 3 Educational status on study population

Educational Status	Urban	Rural	Total
High school	272 27.2%	358 35.8%	630 31.5%
Higher secondary	173 17.3%	241 24.1%	414 20.7%
Graduate	344 34.4%	316 31.6%	660 33.0%
Postgraduate	211 21.1%	85 8.5%	296 14.8%

In urban population awareness of cataract and glaucoma is more between the age group of 41-60. In rural population subjects between the age group of 20-40 is more aware about cataract and galucoma (Table 4). In the study population peoples who are graduated had the best awareness on cataract and glaucoma (Table 5). In urban population out of 927 subjects who have heard about cataract, 686(74.0%) subjects had good knowledge while 241(24.2%) subjects had poor knowledge, 83.9% of them defined cataract as the disease which affects the lens in the eye, 75.5% subjects knows that healthy diet are not the fact which reduce the risk factor for cataract, 84.8% responded that surgery is the treatment available for cataract and 70.8% felt that cataract is that disease which lead them to blindness. In the case of glaucoma 261(34.9%) subjects in the aware group had good knowledge and 486(65.1%) had poor knowledge (Table 6). 47.0% of the aware group knows that glaucoma is the increase in eye pressure, 40.7% responded that glaucoma can lead to blindness, but only 54.7% knows that family history of glaucoma is a risk factor, 22.8% knows glaucoma needs lifelong medication. This knowledge about both cataract (46.5%) and glaucoma (31.4%) is higher in subjects those who are graduated (Table 7). Knowledge of 717(80.3%) subjects about cataract is found to be good and 176(17.6%) is found to be poor in rural population, 78.7% of them defined cataract as the disease which affects the lens in the eye, 96.7% subjects knows that healthy diet are not the fact which reduce the risk factor for cataract, 83.7% responded that surgery is the treatment available for cataract and 97.6% felt that cataract can lead them to blindness. Among the 893 subjects of the aware group 259(37.2%) subjects had good knowledge while 437(62.8%) had the poor knowledge on glaucoma (Table 6), 66.9 % of the aware group knows that glaucoma is the increase in eye pressure, 52.7% responded that glaucoma can lead to blindness, but only 65.2% knows that family history of glaucoma is a risk factor, 28.3% knows glaucoma needs lifelong medication. Here also graduates are more aware than others (Table 7).

Table 4 Association of age distribution on awareness of cataract and glaucoma

Age	Urban population		Rural Population	
	cataract	glaucoma	cataract	glaucoma
<=20	50 5.4%	45 6.0%	25 2.8%	21 3.0%
20-40	226 24.3%	197 26.4%	339 37.8%	283 40.7%
41-60	390 42.0%	303 40.6%	320 35.8%	242 34.8%
>60	261 28.1%	202 27.0%	209 23.4%	150 21.6%
Total	927 92.7%	747 74.7%	893 89.3%	696 69.6%

Table 5 Association of educational status on awareness of cataract and glaucoma

Educational status	Urban population		Rural population	
	cataract	glaucoma	cataract	glaucoma
High school	192 20.7%	160 17.3%	65 9.0%	69 9.9%
Higher secondary	159 17.2%	132 14.2%	176 24.5%	163 23.4%
Graduate	328 35.4%	269 29.0%	261 36.4%	256 36.8%
Postgraduate	248 26.8%	186 20.6%	215 30.0%	208 30.0%
Total	927 92.7%	747 74.7%	717 80.3%	696 69.6%

Table 6 Association of age distribution on knowledge of cataract and glaucoma

Age	Urban population				Rural population			
	cataract		glaucoma		cataract		glaucoma	
	Poor	Good	Poor	Good	Poor	Good	Poor	Good
<=20	12 5.0%	38 5.5%	31 6.4%	14 5.4%	8 4.5%	17 2.4%	15 3.4%	6 2.3%
20-4	78 32.4%	148 21.6%	140 28.9%	57 21.8%	92 52.3%	247 34.4%	182 41.7%	101 40.0%
41-60	94 22.1%	296 43.1%	183 31.7%	120 46.0%	40 22.7%	280 3.9%	136 31.1%	106 40.9%
>60	57 23.7%	204 29.7%	132 27.1%	70 26.8%	36 20.5%	173 24.1%	104 23.7%	46 17.8%
Total	241 24.2%	686 74.0%	486 65.1%	261 34.9%	176 17.6%	717 80.3%	437 62.8%	259 37.2%

Table 7 Association of educational status on knowledge of cataract and glaucoma

Educational Status	Urban Population				Rural Population			
	Cataract		Glaucoma		Cataract		Glaucoma	
	Poor	Good	Poor	Good	Poor	Good	Poor	Good
High school	45 18.7%	137 20.0%	127 26.1%	59 24.5%	10 5.7%	65 9.0%	108 24.7%	100 38.6%
Higher secondary	29 12.0%	130 19.0%	78 16.0%	54 20.7%	34 19.3%	176 24.5%	89 20.4%	74 28.6%
Graduate	112 46.5%	216 31.5%	187 38.5%	82 31.4%	68 38.6%	261 36.4%	191 43.7%	65 25.0%
Postgraduate	55 22.8%	203 29.6%	94 19.3%	66 25.3%	64 36.4%	215 30.0%	49 11.2%	20 7.7%
Total	241 26.0%	686 74.0%	486 65.1%	261 34.9%	176 19.7%	717 80.3%	437 62.8%	259 37.2%

Discussion

Cataract and glaucoma are the most important leading cause of blindness. Proper awareness and knowledge about these diseases play a prominent role in facilitating the people to achieve proper eye care and treatment. This study was conducted in rural and urban population to assess the awareness and knowledge about cataract and glaucoma. A similar population based survey was conducted to assess the awareness on common eye conditions in urban and semi urban population by Dr Rehna Rasheed in 1600 subjects between the age group of 15-75 years, which showed that the awareness about glaucoma is not satisfactory while the awareness on cataract is good. Student population is better educated and an educational status of graduation has more awareness and knowledge than others. In the present study it was observed that subjects were better aware about cataract when compared to glaucoma, in both study population. This awareness and knowledge is significantly higher in subjects between the age group of 20-60 and lower in those who are below 20 and above 60.

Our study findings strongly recommended creating awareness among the geriatric population. A study was done in Iran population where no correlation was noted between age and knowledge of the eye disease.^{8,9} As we expected that education plays a prominent role in knowledge of eye diseases. Majority of the graduates had good knowledge in both study population, when compared to those who were less educated. A study done by Rakhi Dandona to assess the awareness of eye diseases in an urban population in southern India reported that awareness of glaucoma is significantly higher among the college students who are better educated, compared to illiterates and high school students. Some studies done to understand the awareness and knowledge in north Indian rural residents also showed that literates are more likely to be aware than illiterates. This study strongly matches our findings that the educational status plays an important role in the awareness and knowledge about cataract and glaucoma.

In both urban and rural population awareness and knowledge was found to be good in cataract compared to glaucoma. Majority of the subjects knows that cataract is a blinding condition that commonly occurs in adults which is treatable with surgery. But in the case of glaucoma most of the subjects poorly responded, only few of them know that glaucoma is the condition of increase in eye pressure and needs lifelong medications. So this inadequate knowledge which leads

to late presentation is the prominent reason for irreversible glaucoma blindness.

Questionnaire for Cataract

Name: sex: M/F

Age: Occupation:

Panchayath/Municipality/Corporation

- Have you heard of cataract?
 - yes
 - no
- Cataract affect which part of the eye?
 - cornea
 - lens
 - retina
- A healthy diet reduce your risk for cataract?
 - yes
 - no
- Treatment for cataract?
 - Glasses
 - Surgery
 - Eyedrops
- In which age group cataract commonly develop?
 - old age
 - young age
 - all agegroup
- Do cataract lead you to blindness?
 - Yes
 - No

Questionnaire for Glaucoma

Name: sex: M/F

Age: Occupation:

Panchayath/Municipality/Corporation

- Have you heard of glaucoma?
 - yes
 - no
- What is glaucoma?
 - increase in eyepressure
 - increase in blood pressure
- Can glaucoma lead you to blindness?
 - Yes
 - no

4. Chance of glaucoma, if there is a family history of glaucoma?

a) Yes b) no

5. Can glaucoma be controlled?

a) Yes b) no

6. Duration of glaucoma medication?

a) Lifelong b) limited period

Conclusion

In our study awareness is found to be poor in geriatric population and subjects who were less educated compared to middle ages and those who were higher educated. Our study strongly recommends proper health education in this population. Public health care programmes and screening programmes are found to be the best means to reach this health education to the public and thus help for the better eye health.

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