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Assessment of the Awareness and Knowledge of Glaucoma among Households in Rural and Urban Field Practice Areas of Shimoga Institute of Medical Sciences, Shimoga, Karnataka

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Abstract

Background: Several challenges exists in rural areas, as most ophthalmologists are concentrated in urban areas, this leaves many people without access to regular eye exams or treatment, which is vital in preventing permanent vision loss in the setting of glaucoma. Therefore, the present study was undertaken to assess the Awareness and knowledge of Glaucoma among Households. *Materials And Methods:* This study included 200 households (100 rural;100 urban) aged above 20 years in rural and urban field practice areas. After the informed consent, every household was subjected to personal interview using a semi-structured and pre-tested questionnaire *Results:* The awareness on glaucoma was significantly higher in the literates (p= 0.000) in urban and among rural area (p= 0.015) as compared to illiterates. There was a statistical difference in the awareness of glaucoma between the males and females (p=0.014) in urban area and in rural area (p=0.005). *Conclusion:* Awareness and knowledge of glaucoma is poor both in urban as well as rural population. This study highlights the need for health education to effectively prevent blindness due to glaucoma.

Keywords: Glaucoma; Awareness; Urban area; Rural Area.

Introduction

The word "glaucoma" is from ancient Greek glaukos which means blue, green, or gray [1]. Glaucoma is a group of eye diseases which result in damage to the optic nerve and vision loss [2]. About sixty-seven million people have glaucoma globally [3]. Worldwide, glaucoma is the second-leading cause of blindness after cataracts [4]. Glaucoma is the third leading cause of blindness in India,12 million people are affected accounting for 12.8% of the country's blindness. Population based studies report a prevalence between 2.6% [5] to 4.1% [2-5]. Glaucoma has been called the "silent thief of sight" because the loss of vision usually occurs slowly over a long period of time [6]. Unlike cataracts, the vision loss associated with glaucoma is largely irreversible [7]. Glaucoma prevention and treatment has been a major focus of international directives including the World Health Organization's Vision 2020 campaign [8].

Lack of awareness and non-availability of appropriate screening procedures are among the major reasons for non-diagnosis or late diagnosis of glaucoma [9]. Several challenges exists in rural areas, as most ophthalmologists are concentrated in urban areas, this leaves many people without access to regular eye exams or treatment, which is vital in preventing permanent vision loss in the setting of glaucoma [10].

There is a need for health education in population to increase their level of awareness and knowledge

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of common eye diseases; such awareness and knowledge could lead to better understanding and acceptance of the importance of routine eye examinations for the early detection and treatment of eye diseases, thereby reducing visual impairment in the population [11]. Therefore, the present study was designed to Assess the Awareness and knowledge of Glaucoma among Households in Rural and Urban Field Practice Areas of Shimoga Institute of Medical Sciences, Shimoga and to associate the awareness of glaucoma with selected demographic variables.

Materials and Methods

This is a cross-sectional community-based study, conducted after obtaining the institution ethical committee clearance among 200 households (100 rural; 100 urban) aged above 20 years in rural and urban field practice areas of Shimoga Institute of Medical Sciences, Shivamogga. Multistage sampling was used; subcentre areas were primary sampling units and villages/wards that fall under the rural and urban field practice areas were secondary sampling units. The subcentre areas and villages/wards were selected by simple random sampling. All the households in the selected village were included in the study.

Data was collected by doing house-to-house visits till all the houses in that particular village is covered. Half of the selected households were randomly assigned to be 'male' households where only males from the target population (>20years of age) were interviewed, while the other half were randomly assigned as 'female' households where only females from the target population were interviewed. It was undertaken to ensure that an equal number of males and females were sampled. This process removes the introduction of selection bias into the design by arbitrarily deciding which gender to interview in each household. Locked houses and houses in which the households were temporarily absent were visited second time.

After taking informed consent, every household willing to be a part of the study was subjected to personal interview using a semi-structured and pre-tested questionnaire. It was initially developed in English and all the questions were translated into local language kannada for the target population. Questionnaire includes information on sociodemographic background and household information; knowledge and awareness of glaucoma will be assessed according to the definitions. Awareness was defined as "having heard of glaucoma". Knowledge was defined as "when the subject had some understanding of glaucoma". Only those individuals who had heard of glaucoma were enrolled to complete the questionnaire. Questions on knowledge were tested as per the questionnaire and if two out of seven questions were known, then considered to have knowledge about glaucoma.

Statistical Analysis

Microsoft Excel spreadsheet was used for data entry and SPSS version 21 for analysis of data. Data analysis was done by using proportions and Chi-square test.

Table 1: Sociodemographic characteristics and awareness on glaucoma in urban population

Characteristics	Urban Awareness	Number	P value
AGE in years			
20-30	0	16	
31-40	11	44	
41-50	1	16	p=0.011
51-60	0	22	
>60	0	2	
Gender			
Male	10	50	p=0.014
Female	2	50	
Education level			
Illiterate	0	16	
Primary	1	29	
Secondary	4	26	
Pre- University	1	18	P= 0.000
Graduation	4	8	
Post-Graduation	2	3	

Results

A total of 200 subjects participated in the study. The subjects who were older than 20 years responded to a structured questionnaire which was on the awareness of glaucoma. A total of 12 subjects among urban and 7 subjects among rural area were aware of glaucoma.

The awareness on glaucoma was significantly higher in the literates (DF-5, P= 0.000) in urban and among rural area (DF-3, P= 0.015). There was a statistical difference in the awareness of glaucoma between the males and females (p=0.014, degree of freedom =1) in urban area and in rural area (p=0.005, degree of freedom =1). There was also a statistically significant difference in the different age-groups regarding the awareness of glaucoma (p=0.011, degree of freedom=4) in urban area and in rural area (p=0.056, degree of freedom=4, (Table 1).

The awareness on glaucoma was statistically significant among rural and urban areas (p= 0.000, degree of freedom-1). In the urban population, out of 12 individuals who were aware of glaucoma, only 2 individuals knew about the risk of familial predisposition to glaucoma. Only 1 participant was aware of the asymptomatic course and irreversible nature of vision loss. 2 individuals knew that treatment of glaucoma is possible. In the rural population 7 individuals were aware of glaucoma, but only 1 individual knew that glaucoma can cause irreversible loss of vision (Table 2).

Table 2: Sociodemographic characteristics and awareness on glaucoma in rural population

Characteristics	Rural Awareness	Number	P value
AGE in years			
20-30	0%	16	
31-40	7%	45	
41-50	0%	15	p=0.056
51-60	0%	22	
>60	0%	2	
Gender			
Male	6%	50	
Female	1%	50	p=0.005
Education level			
Illiterate	0	57	
Primary	4	24	
Secondary	3	18	
Pre- University	0	1	
Degree	0	0	P= 0.015
Post-Graduation	0	0	

Table 3: Comparison of hearing of glaucoma between urban and rural population

Variable	Characteristics	Urban Awareness	Rural Awareness	P Value
Heard of Glaucoma	Yes	12	7	
	No	88	93	P=0.000

In the urban population only 10 persons had consulted ophthalmologist in last 1 year. Similarly, in the rural population 5 persons had consulted the ophthalmologist. In the urban population 5 individuals received information about glaucoma from family or friends, 4 from visiting hospital, medical personnel, eye camp, 3 individuals from mass media. In the rural population 3 individuals received information about glaucoma from eye camps, 2 individuals from mass media, 2 individuals from family or friends (Table 3).

Discussion

In a developing country like India, Glaucoma is the leading cause of preventable irreversible blindness. Blindness due to glaucoma can be curbed to a certain extent by educating the masses about the condition and thereby influencing at risk individuals to participate in regular ophthalmic care [12]. Hence this study was undertaken to assess the awareness and knowledge of glaucoma in this part of south Karnataka.

Awareness of glaucoma in our study population is poor both in urban and rural areas. This is in

contrast to the published data in many other countries (Table 2). In some of the developed countries awareness of glaucoma is as high as 72 to 93% [13,14].

The prevalence of glaucoma in India ranges from 2.6% [11] to 4.1%. Considering the prevalence of glaucoma, awareness of glaucoma is poor in urban population. It is still poor in the rural population. Limited access to medical and diagnostic care in the rural areas may have contributed to poor knowledge and awareness of glaucoma.

In our study males were more aware of glaucoma than females in both urban and rural areas. Awareness was more in the younger age group in both urban and rural areas. Relationship between glaucoma awareness and a particular age or gender has been noted previously [11,15,16,17]. Relationship between age, gender and 'health related literacy' is complex and affected by many social, economic and cultural factors [18].

Individuals with a higher elementary education were aware and had some knowledge of glaucoma. Similar observations were made in APEDS [15], Chennai glaucoma study [16], other studies [11,19,20]. This highlights the importance of education for awareness of the disease. Only 1% of the participants had knowledge of the asymptomatic course and irreversible loss of vision. In a study conducted in Hongkong only 10% of the participants were aware about glaucoma symptoms [21]. Hence if individuals are made aware about the asymptomatic course and irreversible loss of vision, it would favorably affect their attitude and behavior about glaucoma. Health promotion and communicating risk is a key public health strategy [12,22]. Health education about eye care will influence the behavior of individuals, towards regular eye check-up. Health education programme, targeting at risk individuals like individuals with family history of glaucoma would be more productive. Information brochure and pamphlets should be given to all out-patients visiting an eye clinic. Eye clinics can display posters of glaucoma. Information about glaucoma can be given through mass media like radio, TV, newspaper. Community level programmes and initiative taken as part of the world glaucoma day would help to increase awareness in the population [23].

Conclusion

In general awareness about glaucoma in the Indian population is poor, as seen in several population based studies [11,15,16,17]. In the present study also awareness and knowledge of glaucoma is poor both in urban as well as rural population. This study highlights the need for health education to effectively prevent blindness due to glaucoma.

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