



## Public awareness of common eye diseases in South India

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### Article History:

Received on: 30 Sep 2020

Revised on: 29 Oct 2020

Accepted on: 31 Oct 2020

### Keywords:

Awareness,  
Blindness,  
Cataract,  
Diabetic Retinopathy,  
Glaucoma

### ABSTRACT

Awareness of the common eye diseases helps in the prevention of blindness by early intervention. This study was conducted to assess the awareness of the common eye diseases, such as cataract, diabetic retinopathy and glaucoma among the people in south India. A semi-structured questionnaire was developed to assess the awareness of the cataract, diabetic retinopathy and glaucoma among the public in Chennai. The demographic details like age, gender and education were collected along with the awareness of the disease and questions regarding the disease were asked to the people who were aware of the disease. A total of 185 participants were included in the study, and it consisted of 108(58%) males and 77(42%) females. The age group participated in this study was 15-65 years, and 177 participants were literate. Awareness of cataract, diabetic retinopathy and glaucoma were (81%, 49% and 34% respectively). The most familiar source of knowledge was friends, family and relatives. The awareness of cataract is better than compared to diabetic retinopathy and glaucoma. Hence, the awareness of these common eye diseases has to be improved more and current trend of improvement in the awareness has to continue through various awareness programs which helps in reducing the preventable blindness by early detection and treatment.



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ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v11i4.3874>

Production and Hosted by

IJRPS | [www.ijrps.com](http://www.ijrps.com)

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### INTRODUCTION

Awareness of the common eye diseases is important for the treatment and prevention of blindness. Awareness majorly helps in the determination of the eye problems in the early stages, to avail the proper medical care and prevent the late complications of the diseases ([Dandona et al., 2001](#); [Shrestha](#)

[et al., 2014](#)). According to world health organization (WHO) globally, nearly 2.2 billion people have a vision impairment or blindness in which 1 billion is considered preventable, and most typical causes include cataract, glaucoma and diabetic retinopathy ([World health organization, 2019](#)). In a previous study conducted in south India reported the awareness of the eye diseases in 2001 ([Shrestha et al., 2014](#)), hence there is lack of study to know the current awareness of the common eye diseases in South India. The awareness of the common eye diseases are influenced by age, gender and education ([Haddad et al., 2017](#)). Awareness on the utilization of eye care services is also as important as the understanding of the diseases, like educating regular eye check-up in diabetic people ([Javadi et al., 2009](#)). The diabetic retinopathy awareness is also a rising concern as the diabetic population in India is very high in India ([Hussain et al., 2016](#)). The complications of these common eye diseases are also considered as a significant cause of preventable blindness and

seen more common in the developing countries as compared to the developed countries (Haddad *et al.*, 2017).

## MATERIALS AND METHODS

### Study type

This study was a cross-sectional study, and a semi-structured questionnaire was prepared based on the previous studies to collect data from the public.

### Study population

This study was conducted in the urban population of Chennai among the public by the random sampling method.

### Study duration

This study was conducted during January 2020 and March 2020.

### Sample size

It was calculated based on the previous study showed 69.8% awareness of cataract, and it was calculated as 181 with a confidence interval of 90% and rounded to 185 (Dandona *et al.*, 2001).

### Inclusion criteria and exclusion criteria

An inclusion criterion was set as the age above 15 years, and people without any previous history of these diseases were selected, as it could lead to increased awareness in the study.

### Questionnaire development and management

A questionnaire was used, which consists of the demographic details and questions to know the awareness of the three common eye diseases such as cataract, diabetic retinopathy and glaucoma among the public.

The question of awareness of the diseases was asked, and the people without awareness were not asked any questions regarding the effects of the disease.

The source of knowledge regarding the disease was also collected. The questionnaire was prepared in English as well as in regional language Tamil to collect information from the public, and it was tested among pilot study group and corrected based on the responses and the reviews of the pilot study group.

### Ethical approval

The approval for this study was obtained from the institutional ethics committee.

### Consent

Proper informed consent was acquired from all the participants of the study.

## Statistical analysis

The statistical analysis was done with excel, and P-value was calculated with the help of chi-square with to find a significant association between the variables.

## RESULTS AND DISCUSSION

### Demographic details

The study was conducted with 185 participants in which 108(58%) were males, and 77(42%) were females. Age group included in the study was 15-65 years. The commonest age group participated in this study was 21-25 years. Education status of the participants were 105(57%) graduates, 44 (24%) graduate and above, 21(11%) secondary, 7(4%) primary, 8(4%) illiterate Table 1.

### Awareness of common eye diseases

#### Cataract

The level of awareness of cataract was 81%. The responses of people aware of cataract to the questions based on cataract were noted and 33% people knew that lens was affected in cataract, 58% said cataract could lead to blindness, 42% said it requires surgical treatment and 64% said that blindness is reversible in this condition.

#### Diabetic retinopathy

The level of awareness of diabetic retinopathy was 49%, and the responses of the people aware of the condition to the questions based on diabetic retinopathy were noted as 52% aware that retina is affected in this condition, 49% said it could lead to blindness, and only 30% said it could be prevented.

#### Glaucoma

The level of glaucoma awareness was 34%. The responses to the questions based on this condition by the people who were aware of this condition were that 35% said that it is caused due to increased intraocular pressure, 36% said it could lead to blindness, and 27% said that vision was reversible in this condition. The source of knowledge of the common eye diseases is represented in Table 2.

### Association of the awareness of the common eye diseases with demographic details

Association of awareness of the common eye diseases with gender and age and education was calculated with chi-square and (P-value-0.008) showed a significant association between the awareness of cataract and gender, males are more aware of cataract and not significant in case of (P-value-0.871) diabetic retinopathy and (p-value-0.806)

**Table 1: Demographic detail of the study participants**

Characteristics	Frequency (n=185)	Percentage
<b>Gender</b>		
Male	108	58
Female	77	42
<b>Age</b>		
15-20 years	30	16
21-25 years	45	24
26-35 years	36	20
36-45 years	35	19
46-65 years	39	21
<b>Level of education</b>		
Illiterate	8	4
Primary	7	4
Secondary	21	11
Graduate	105	57
Graduate and above	44	24

**Table 2: Source of knowledge of the common eye diseases among public**

Source of knowledge	n(%)
Family, friends and relatives	64(35)
Internet	49(27)
Media	21(11)
Reading books	39(21)
Ophthalmology clinics	12(6)

**Table 3: Association of awareness of eye diseases with subject demographic details (age, gender and education) (n = 185)**

	Cataract awareness no*	P-value**	Glaucoma awareness no*	P-value**	DR awareness no*	P-value**
<b>Gender</b>						
Male	80	0.008	52	0.806	36	0.871
Female	69		38		27	
<b>Age groups</b>						
<40 years	107	0.96	64	0.045	52	0.112
>40 years	42		26		11	
<b>Level of education</b>						
Illiterate	5	0.187	3	0.188	1	0.518
Literate	144		87		62	

glaucoma. Association of age with glaucoma awareness was significant with (p-value-0.045) and not significant in case of (P-value-0.96) cataract and (P-value-0.112) diabetic retinopathy. The age was taken as two variables <40 years and >40 years and showed more awareness of glaucoma in the younger age group >40 years. Also, no significant statistical association was seen in education and awareness of the common eye problems. But educated people were more aware of the common eye diseases. The association of awareness with the demographic details is represented in Table 3. The awareness of the common eye diseases helps in the prevention of visual disability. Caused due the complications occurred in case of late intervention, majorly in case of glaucoma, which leads to silent and sudden visual blindness. The awareness of cataract, diabetic retinopathy and glaucoma (81%, 48% and 34%) in this study compared to (70.6%, 19.9% and 39.1%) in Bihar at 2018 (Vineeta Laxmi et al., 2018), showed increased awareness in case of diabetic retinopathy, glaucoma and cataract due to the increased prevalence of diabetes in Tamilnadu as compared to Bihar and the increased literacy rate in TamilNadu (Anjana et al., 2017).

A similar comparison of awareness with (31%, 37% and 38%) in Jordan (Haddad et al., 2017), shows increased awareness of cataract and diabetic retinopathy this increase in the awareness is due to increased occurrence of the disease in India as compared to Jordan. In the case of glaucoma, awareness is similar to this study. The glaucoma awareness has been increased in these years as compared to the various other studies. Yet, it is very low as compared to other diseases like cataract and this needed to be looked as it is one of the leading causes of preventable blindness next to cataract (Dandona et al., 2001). Comparing the awareness of the other countries the awareness in India is very low mainly in case of glaucoma and diabetic retinopathy, developed countries are more aware than the developing countries (Noertjojo et al., 2006; Livingston et al., 1998; Gasch et al., 2000).

The source of knowledge in our study was majorly from friends and family who have already suffered from these conditions as these are common eye problems compared to other studies showing the similar source of knowledge as the incidence of these diseases are high (Haddad et al., 2017). In this study, the second common source of knowledge is the internet as compared to the previous studies due to its increased availability. The study also shows that the ophthalmology clinics are the least source of knowledge and which needed to be changed to increase awareness among the public.

In our study the awareness was higher among the younger age group as compared to the other studies showed more awareness among the lower age group (Al-Rashed et al., 2017), this is majorly due to increasing in the availability of education among the younger age group and accessibility of internet which was the second common source of knowledge about these common eye problems.

## CONCLUSION

The awareness of cataract is very high as compared to diabetic retinopathy and glaucoma. Hence, the awareness of these conditions has to be increased to prevent the major blindness and also diabetic people to be given proper advice of regular eye check-up to increase the awareness and prevent the disease in the early stage. Glaucoma being much unknown disease needs to look upon as it is a very common emerging disease now and also leads to sudden blindness which could be prevented by the spread of awareness and knowledge of the condition. There is a significant association of awareness with age and gender. Hence, increased awareness programs should be conducted to increase the awareness of glaucoma and diabetic retinopathy as compared to cataract.

## Conflict of interest

The authors declare that there is no conflict of interest for this study.

## Funding source

The authors declare that there is no funding support for this study.

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