Public awareness of common eye diseases in South India

Kishore Khannaa A, Sanjeev Kumar Puri
Department of Ophthalmology, Saveetha Medical College Hospital, Thandalam, Chennai-602105, Tamil Nadu, India

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.

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) 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
Table 1: Demographic detail of the study participants.

| Characteristics       | Frequency (n=185) | Percentage |
|-----------------------|-------------------|------------|
| **Gender**            |                   |            |
| Male                  | 108               | 58         |
| Female                | 77                | 42         |
| **Age**               |                   |            |
| 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         |
| **Level of education**|                   |            |
| 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** |
|-------------------------|-------------------------|-----------|-------------------------|-----------|------------------|-----------|
| **Gender**              |                         |           |                         |           |                  |           |
| Male                    | 80                      | 0.008     | 52                      | 0.806     | 36               | 0.871     |
| Female                  | 69                      |           | 38                      |           |                  |           |
| **Age groups**          |                         |           |                         |           |                  |           |
| <40 years               | 107                     | 0.96      | 64                      | 0.045     | 52               | 0.112     |
| >40 years               | 42                      |           | 26                      |           |                  |           |
| **Level of education**  |                         |           |                         |           |                  |           |
| Illiterate              | 5                       | 0.187     | 3                       | 0.188     | 1                | 0.518     |
| Literate                | 144                     |           | 87                      |           |                  |           |
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 (Dandonia 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.

CONCLUSIONS

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.

REFERENCES

Al-Rashed, W. A., Abdulrahman, A. K. B., Zarban, A. A., Almasri, M. S., Mirza, A. S., Khandekar, R. 2017. Public Awareness regarding Common Eye Diseases among Saudi Adults in Riyadh City: A Quantitative Study. Journal of Ophthalmology, 2017:1–5.

Anjana, R. M., Deepa, M., Pradeepa, R., Mahanta, J., Narain, K., Das, H. K., et al. 2017. Prevalence of diabetes and prediabetes in 15 states of India: results from the ICMR-INDIAB population-based cross-sectional study. The Lancet Diabetes & Endocrinology, 5(8):585–596.

Dandonia, R., Dandonia, L., John, R. K., Mccarty, C. A., Rao, G. N. 2001. Awareness of eye diseases in an urban population in southern India. Bulletin of the World Health Organization, 79(2):96–102.

Gasch, A. T., Wang, P., Pasquale, L. R. 2000. Determinants of glaucoma awareness in a general eye clinic. Ophthalmology, 107(2):303–308.

Haddad, M. F., Bakkar, M. M., Abdo, N. 2017. Public awareness of common eye diseases in Jordan. BMC Ophthalmology, 17(1):1–7.
Hussain, R., Rajesh, B., Giridhar, A., Gopalakrishnan, M., Sadasivan, S. 2016. Knowledge and awareness about diabetes mellitus and diabetic retinopathy in suburban population of a South Indian state and its practice among the patients with diabetes mellitus: A population-based study. *Indian Journal of Ophthalmology*, 64(4):272–272.

Javadi, M. A., Katibeh, M., Rafati, N., Dehghan, M. H., Zayeri, F., Yaseri, M., Sehat, M., Ahmadieh, H. 2009. Prevalence of diabetic retinopathy in Tehran province: a population-based study. *BMC Ophthalmology*, 9(1):1–8.

Livingston, P. M., McCarty, C. A., Taylor, H. R. 1998. Knowledge, attitudes, and self care practices associated with age related eye disease in Australia. *British Journal of Ophthalmology*, 82(7):780–785.

Noertjojo, K., Maberley, D., Bassett, K., Courtright, P. 2006. Awareness of eye diseases and risk factors: identifying needs for health education and promotion in Canada. *Canadian Journal of Ophthalmology*, 41(5):617–623.

Shrestha, M. K., Guo, C. W., Maharjan, N., Gurung, R., Ruit, S. 2014. Health literacy of common ocular diseases in Nepal. *BMC Ophthalmology*, 14(1):1–8.

World health organization 2019. Blindness and vision impairment. [Accessed on 21 July 2020].