

Awareness and Knowledge about Cataract and Factors Affecting Cataract Surgery among Rural Population of Punjab

SHEERIN FATEEN, FATIMA RAFIQUE, MISKHAT IRAM, HAFIZA HAFSA MEHWISH, ABDUL MALIK, AHMAD KAMAL KHAN

ABSTRACT

Aim: To evaluate the awareness and knowledge about cataract, its risk factors and treatment modalities in rural population of Punjab,

Study design: Cross-sectional study

Place and duration of study: This study was carried out in the rural areas of district Sahiwal Punjab from March 2017 to June 2017.

Methods: A total of 500 participants were enrolled through a non-probability, convenient sampling method. Community members of age 20 years to 70 years were interviewed by Lady Health Workers during their routine visits in community after written informed consent through a pre-designed, pre-tested questionnaire. The obtained data was then analyzed using SPSS.

Results showed that 82.2% had heard about cataract but only 44.8% knew that it is the opacity of lens. 51.8% thought that blindness caused by cataract cannot be cured. Knowledge about risk factors was not very good. 57% population knew that surgery is the effective treatment for cataract and 75% had heard about intraocular lens however 62.8% population was not aware of the availability of free surgical facility in government hospitals.

Conclusion: Our study showed that about half of population had good knowledge about cataract and its risk factors, but majority did not know about presence of free surgery in government hospitals.

Keywords: Cataract, blindness, awareness

BACKGROUND

A natural lens is present inside our eyes that reflects the rays of light coming into the eyes and helps us see the clear images. Cataract is a disease in which this lens becomes opaque that makes the images look blurred, hazy, and less colorful. It causes increased light sensitivity, decreased vision at night, seeing double images and leads to total blindness.¹ Incidence of cataract increases with age and with increasing life expectancy the prevalence of age related eye diseases and reversible blindness is also expected to increase in future. Blindness is a health care condition that adversely affects the productivity of a nation and has severe economic repercussions.

Cataract is a predominant cause of blindness worldwide, a survey conducted in 2010 shows that of total 32.4 million blind and 191 million visually impaired people cataracts was the cause of blindness in 10.8 million and moderately or severely impaired vision in 35.1 million people. The highest percentage of blindness due to cataract was recorded in South Asia (41.7%) and southeast Asia (42%)². A study in Pakistan shows that cataract is the cause of blindness in 570,000 people and 3,560,000 eyes

have a visual acuity of <6/60 because of it³. Cataract is one of the leading causes of progressive and reversible loss of vision, depending upon the patient's perception of blindness, functional disability and comorbidities it is treated with surgical procedures. Surgery is a highly cost-effective intervention but promises excellent prognosis for sight restoration.

Cataract surgery can effectively restore the vision but there are a number of factors that determine the rate of cataract surgery in a population including awareness about treatment and risk factors, cultural barriers, education, access to ophthalmologists, patient's anxiety over outcome of the procedure and affordability of cataract surgery⁴. This study was conducted to determine the awareness of rural population of Punjab about cataract, its risk factors, treatment modalities and the factors affecting patient's decision about cataract surgery.

The objective of study was to evaluate the knowledge and awareness of people about cataract, its risk factors, its treatment options and cataract surgery

MATERIALS AND METHODS

A total of 500 participants were enrolled through a non-probability, convenient sampling method in a community based cross-sectional study in the rural

Department of Medicine, Mayo Hospital, Lahore
Correspondence: HafizaHafsaMehwish
Email: hafsa_mehwish58@yahoo.com

areas of district Sahiwal Punjab from March 2017 to June 2017. Community members of age 20 years to 70 years were included in the study. Exclusion criteria was age less than 20 and more than 70 years. Study participants were interviewed by Lady Health Workers during their routine visits in community after written informed consent through a pre-designed, pre-tested questionnaire. During interviews, all questions were asked in local language (Urdu/Punjabi) which were later converted to English language for data analysis. Data was entered in SPSS-22 for analysis. Quantitative variables like age were presented as mean and qualitative variables like gender and questions were presented as percentages and frequencies.

RESULTS

A total of 500 participants were included in the study. Mean age was 39.14 years. 33.45 % were housewives/unemployed, 29.4% were private workers, 17.4% had a government job and 19.4% were doing their own business. A total of 44.6% were males while 55.6% of them were females. 53% of them had a monthly income of less than pkr 10,000, 40.6% had between 10,000 to 50,000 and 5.8% earned 50,000 to 1 lac monthly. 35.2% of study participants were uneducated, 42% had done matric, 15% intermediate and 7.8% graduation.

A total of eighteen questions were asked about knowledge and awareness of cataract and the response of study participants (Table 1).

Table 1:

Knowledge & awareness	n	%age
Have you ever heard about cataract?		
Yes	411	82.2
No	89	17.8
What do you know about cataract?		
Inflammation	114	22.8
Haziness of lens	224	44.8
Increased intraocular pressure	86	17.2
Don't know	76	15.2
Source of information		
doctor	252	50.4
Eye camp	78	15.6
TV/ magazine	94	18.8
Friends/relatives	76	15.2
Incidence of cataract increases with age?		
Yes	321	64.2
No	179	35.8
Can it cause blindness?		
Yes	276	55.2
No	224	44.8
Blindness caused by cataract is curable?		
Yes	241	48.2
No	259	51.8
Is it preventable?		
Yes	172	34.4
No	328	65.6

Can radiation cause cataract?		
Yes	311	62.2
No	189	37.8
Can diabetes cause cataract?		
Yes	296	59.2
No	204	40.8
Can obesity contribute to cataract development?		
Yes	139	27.8
No	361	72.2
Can hypertension lead to cataract?		
Yes	157	31.4
No	343	68.6
Can smoking cause cataract?		
Yes	103	20.6
No	397	79.4
Can alcohol cause cataract?		
Yes	175	35
No	325	65
Is cataract curable?		
Yes	320	64
No	180	36
What are the treatment options?		
Medicine	170	34
Surgery	285	57
spiritual treatment)	45	9
From where should one get operated?		
Government hospital	109	21.8
Private hospital	200	40
Eye camp	191	38.2
Have you heard about intraocular lens?		
Yes	376	75.2
No	124	24.8
Why don't people get operated early?		
Operation is expensive	108	21.6
Waiting for eye camp	158	31.6
Health facility is far away	88	17.6
Apprehensive of complications	46	9.2
Don't want IOL	47	9.4
Vision is not lost totally	53	10.6
Do you know cataract surgery is free in government hospitals?		
Yes	186	37.2
No	314	62.8

DISCUSSION

Cataract is among the most predominant causes of reversible blindness in the world and its incidence in Pakistan is also very high. This study was conducted to determine the awareness in our rural population about cataract, its risk factors, treatment and health care facilities that are provided by the government. In our study 17.8% of the respondents had never heard about cataract while 82.2% had heard about it in their life. 44.8% knew that it is the haziness of crystalline lens. In a study conducted in Nigeria only 9% knew that this blinding condition is opacification of lens.⁵ About half of the population got information about cataract from the doctor, 18.8% from media and 15.2% from friends or relatives, however in a population survey in 2014 in Tehran 66.8% population reported that their source of information was friends and relatives.⁶ The Beaver Dam Eye Study reports that incidence of cataract increases

exponentially with age, in our study population 64.2% people were aware of this fact.⁷ Cataract is the most common cause of blindness in people above 40 years of age and a principle cause of vision loss in the world.⁸ In our study 55% people thought that cataract could cause blindness and around 52% of them said that once cataract has caused blindness it cannot be cured.

Incidence of cataract is associated with certain factors and by their prevention it can be decreased, for example cataract formation is more in diabetics and particularly those treated with oral hypoglycemic agents than those who are treated with insulin or diet alone.⁹ In our population 34% responded that cataract could be prevented and 59% answered that cataract incidence was more in diabetics. Radiation is another risk factor that causes damage to the posterior surface of lens leading to its partial opacity and cloudiness. Cortical and posterior subcapsular are the types of cataracts that are generally associated with radiation exposure and this signifies the regular eye care among radiation exposed workers.^{10,11} In our population 62.2% of the respondents thought that radiation could increase the incidence of cataract.

Obesity and overweight are systemic diseases, but they are also putting people at an increased risk of blinding conditions and these conditions include age related macular degeneration, cataract, glaucoma, and diabetic retinopathy. Obesity can harm the vision of an individual through age related systemic diseases like diabetes or directly through increased body mass index. Obese people use less of healthy food and their decreased intake of carotenoids is associated with deterioration of eye health.¹² In our study 27.8% and 31.4% population knew that obesity and hypertension are risk factors of cataract respectively. Heavy smokers are three times at an increased risk of cataract along with dry eye syndrome and other blinding conditions however in our rural population around 80% population believes that smoking causes no harm to vision and eyes.¹³ Prolonged and higher alcohol intake causes long term damage to vision and opacifies the crystalline lens in our study population 35% thought that alcohol intake may lead to cataract formation^{14,15}.

Surgery is the only effective treatment for the cataract. Initially its symptoms can be relieved with bright lighting, anti-glare sunglasses, magnifying glasses and new eyeglasses but once it starts interfering with routine activities like watching TV, reading or driving it should be removed with surgery^{16,17} in our population 57% of population knew that surgery is the treatment of choice for cataract. During surgery the damaged and opacified lens is removed and an artificial lens is implanted in the eye

using various techniques.^{18,19} 75% of our respondents had heard about intra ocular lens and only 20.8% of them favored to be operated in government hospitals, 40% said that patient should get operated in private set up and 38.8% thought eye camp was the safest and most reliable place for cataract surgery as they are held by experienced doctors from big cities, so their complication rate is less, and patient has to spend less amount for the surgery.

Cataract surgery is not an emergency but once the loss of vision starts altering daily life activities it should not be delayed because the longer a surgery is delayed the denser cataract becomes that is difficult to remove for eye surgeon and may increase the risk of complications. When asked about reason of delay in surgery only 10.6% of population thought that partial loss of vision and ability to perform routine activities was the reason behind it, 21.6% said that the cost of operation is the reason behind the delay and 31.6% reported that the wait for eye camp becomes the reason behind delayed cataract surgery. 9.2% population responded that the fear of complication of surgery was the reason behind the delay and 9.4% thought that people don't want an intraocular lens and delay the surgery. Only 37.2% of respondents knew that cataract surgery is being done free of cost in government hospitals.

CONCLUSION

In our study population showed that knowledge and awareness about cataract and its risk factors was not very good. Majority of the population knew that cataract affects visual acuity and its incidence increases with age but about half of them did not know that blindness caused by cataract is curable.

RECOMMENDATIONS

Health education about cataract is low and public awareness campaigns should be run to influence people about screening that will lead to early detection and management of this this potentially blinding condition and its treatment. These health education sessions should essentially be conducted in local languages that our target population understands, and they should be educated more about risk factors of cataract and availability of surgical equipment and ophthalmologists in government hospitals.

Limitation: The limitation of this study was that the study subjects were approached from a small sect of rural population hence the findings cannot be generalized to the whole rural population.

Acknowledgement: We sincerely thank and acknowledge the rural adults for their participation in the study.

REFERENCES

1. What Are Cataracts? [Internet]. American Academy of Ophthalmology. 2017 [cited 3 October 2017]. Available from: <http://www.aao.org/eye-health/diseases/what-are-cataracts>
2. Khairallah M, Kahloun R, Bourne R, Limburg H, Flaxman S, Jonas J et al. Number of People Blind or Visually Impaired by Cataract Worldwide and in World Regions, 1990 to 2010. *Investigative Ophthalmology & Visual Science*. 2015;56(11):6762.
3. Jadoon Z, Shah S, Bourne R, Dineen B, Khan M, Gilbert C et al. Cataract prevalence, cataract surgical coverage and barriers to uptake of cataract surgical services in Pakistan: the Pakistan National Blindness and Visual Impairment Survey. *British Journal of Ophthalmology*. 2007;91(10):1269-1273.
4. Wang W, Yan W, Fotis K, Prasad N, Lansingh V, Taylor H et al. Cataract Surgical Rate and Socioeconomics: A Global Study. *Investigative Ophthalmology & Visual Science*. 2017;57(14):5872.
5. Omolase, C. (2008). Awareness and Knowledge about Cataract in a Nigerian Community. *Nigerian Medical Practitioner*, 53(3).
6. Katibeh M, Ziaei H, Panah E, Moein H, Hosseini S, Kalantarian M et al. Knowledge and Awareness of Age Related Eye Diseases: a Population-Based Survey. *Journal of Ophthalmic and Vision Research*. 2014;9(2):223–231.
7. Pizzarello L. Incidence of Age-Related Cataract Over a 10-Year Interval: The Beaver Dam Eye Study. *Evidence-Based Eye Care*. 2003;4(2):92-93.
8. Bailey G. 13 Causes Of Cataracts: Find Out If You're At Risk [Internet]. All About Vision. 2017 [cited 28 October 2017]. Available from: <http://www.allaboutvision.com/conditions/cataracts.htm>
9. Dawson C, Schwab I. Epidemiology of cataract—a major cause of preventable blindness. *The Bulletin*. 1981;59(4):493–501.
10. Radiation cataract (lens opacity) - Radiation Effects Research Foundation [Internet]. Refr.jp. 2017 [cited 28 October 2017]. Available from: http://www.refr.jp/radefx/early_e/cataract.html
11. Otake M, Schull WJ: Radiation-related posterior lenticular opacities in Hiroshima and Nagasaki atomic-bomb survivors based on the T65DR and DS86 dosimetry system. *Radiation Research* 1990; 121:3-13
12. [Internet]. Healio.com. 2017 [cited 28 October 2017]. Available from: <https://www.healio.com/.../news/.../risks-for-major-eye-diseases-increased-by-obesity>
13. Smoking Can Lead to Vision Loss or Blindness [Internet]. Health.ny.gov. 2017 [cited 28 October 2017]. Available from: https://www.health.ny.gov/prevention/tobacco_control/smoking_can_lead_to_vision_loss_or_blindness
14. What is the Effect of Alcohol on the Eye? | CooperVision [Internet]. Coopervision.com. 2017 [cited 28 October 2017]. Available from: <https://coopervision.com/blog/what-effect-alcohol-eye>
15. Publishing H. What to do about cataract - Harvard Health [Internet]. Harvard Health. 2017 [cited 28 October 2017]. Available from: <https://www.health.harvard.edu/diseases-and-conditions/what-to-do-about-cataract>
16. Facts About Cataract | National Eye Institute [Internet]. Nei.nih.gov. 2017 [cited 28 October 2017]. Available from: https://nei.nih.gov/health/cataract/cataract_facts
17. Cataract Diagnosis and Treatment [Internet]. American Academy of Ophthalmology. 2017 [cited 28 October 2017]. Available from: <https://www.aao.org/eye-health/diseases/cataracts-treatment>
18. Vance Thompson M. Intraocular Lenses (IOLs): Including Premium, Toric and Aspheric Designs [Internet]. All About Vision. 2017 [cited 28 October 2017]. Available from: <http://www.allaboutvision.com/conditions/iols.htm>
19. Cataract Surgery and Intraocular Lens Implants (IOL) - Your Sight Matters [Internet]. Your Sight Matters. 2017 [cited 28 October 2017]. Available from: <http://yoursightmatters.com/treatment-information/cataract-surgery-intraocular-lens-implants-iol/>
20. Is there any danger in postponing cataract surgery? | Cataracts [Internet]. Sharecare. 2017 [cited 28 October 2017]. Available from: <https://www.sharecare.com/health/cataracts/is-danger-postponing-cataract-surgery>