

Original Research Article

Prevalence of cataract, its risk factors and the barriers to cataract surgery among older women in a rural population of Cuddalore

Merlin S. J. Doss, P. Kalyani*, A. John William Felix

Department of Community Medicine, Rajah Muthiah Medical College and Hospital, Annamalai University, Chidambaram, Tamil Nadu, India

Received: 0 September 2021

Revised: 06 October 2021

Accepted: 07 October 2021

*Correspondence:

Dr. P. Kalyani,
E-mail: pkalyaniramakrishnan@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Cataract is the leading causes of vision impairment and preventable blindness in populations aged 50 and older. Advancing age, diabetes, hypertension, tobacco use and sunlight exposure are proven risk factors for cataract development. The prevalence of cataract is higher in low-income settings compared to high-income regions and also higher among females, compared to males. Hence this study has been conducted among a rural female population, aged 50 and above.

Methods: The data collection for this descriptive cross-sectional study was conducted over a period of 4 months (December 2019 to March 2020), in a rural area of Chidambaram, Cuddalore. 397 study participants (202 females and 195 males) were interviewed using a semi-structured proforma, and examined accordingly. Of this, only the 202 females were included in this study, for estimating the prevalence of cataract among female population aged 50 and above. Data was analysed using SPSS statistical software presented as frequencies. Chi square test was used for finding association.

Results: The overall prevalence of cataract in the present study is 64.9% (54.5% unilateral and 10.4% bilateral). Risk factors such as age, hypertension, diabetes, tobacco usage and sunlight exposure were significantly associated with the prevalence of cataract ($p < 0.05$, 95% CI). Personal attitudinal reasons like neglect, no felt need and nobody to accompany were the most commonly encountered barriers to cataract surgery.

Conclusions: Targeted camps, health education and screening programs can help overcome the unique barriers to surgery faced by females.

Keywords: Barriers, Cataract, Prevalence, Risk factors, Rural Tamil Nadu

INTRODUCTION

It has been estimated that nearly 2.2 billion people, the world over, have some form of vision impairment.¹ Uncorrected refractive errors and cataracts continue to remain the leading causes of vision impairment and preventable blindness, globally.² The National Blindness and Visual Impairment Survey 2015-2019 stated that cataract is the top cause of blindness in India.³ This survey also revealed that the prevalence of cataract was found to be more in the rural population compared to the

urban and higher among the illiterate than the literate population.⁴

Statistics as per a 2015 global survey showed that, of the 253 million visually impaired people worldwide, 55% were women.⁵ This higher prevalence among women has mainly been attributed to the fact that women have a longer life expectancy compared to men. However, studies have also shown that the female gender itself proves to be a risk factor for the increased prevalence of cataract.⁶ Several other risk factors such as diabetes, hypertension, smoking, tobacco usage and sunlight (UV)

exposure have been shown to be associated with the development of cataract, in various studies.⁵⁻⁹ Cataract is defined as a cloudiness in the lens of the eye that leads to impaired vision, and the development of cataract is often associated with ageing.¹⁰

There is an increased prevalence of blindness and visual impairment, due to cataract, in the population aged ≥ 50 years.¹¹⁻¹⁵ It has also been estimated that the prevalence of blindness and visual impairment due to cataract, in India, is more among women than men aged 50 years and above.^{16,17} Several studies on the cataract surgical coverage rate have also found that women tend to avail surgical assistance to a lesser extent than men and that the female gender itself proves to be a barrier to availing cataract surgical services.¹⁸⁻²³ The reason for this could be that women, in general, face several unique obstacles in accessing health care services.^{24,25}

Given this reasoning, this study was undertaken among women aged 50 years and above, in a rural, low-income setting. The objective of this study is to find the prevalence of cataract and its associated risk factors among women aged 50 years and above, and to find out the barriers to cataract surgery among this female population in a rural community of Tamil Nadu.

METHODS

A population-based cross-sectional study was conducted and data collection was done over a span of 4 months from December 2019 to March 2020 in a rural area of Parangipettai, which is a block under the Cuddalore district of Tamil Nadu. Parangipettai block consists of a total of 41 panchayat villages. The rural health center of Parangipettai, established under Rajah Muthiah Medical College and Hospital, Annamalai University, covers over 8 areas in its surrounding vicinity. Out of these 8 rural field practice areas, one area, namely, Madha Kovil Street was chosen randomly.

The sample size for this study was calculated as 374, based on a cataract prevalence of 62.8% among population aged 50 years and above in a rural area of Tamil Nadu, with an absolute precision of 5%.²⁰ However, for this article, only a part of the thesis data collection has been considered. That is, only the females among the study subjects have been included, so as to assess the prevalence of cataract and its risk factors among women aged 50 and above in the study area.

All the 253 households in this area were covered through house-to-house visits. Houses that were locked on two consecutive visits were skipped. In this regard, 5 houses were skipped as the residents could not be contacted even after two consecutive visits.

The exclusion criteria for this study were subjects above 50 years of age who were not residents of the village, who were debilitated or terminally ill, who were currently

suffering from any acute eye infections, and those who have pseudophakia, aphakia, evisceration or enucleation in both eyes. In this regard, data was collected from a total of 397 subjects aged 50 years and above, comprising of 195 males and 202 females and only the data concerning the female study subjects ($n=202$) has been included in this study. 5 subjects were excluded based on the exclusion criteria.

Informed written consent was obtained from each study subject prior to data collection. Ethical approval for this study was obtained from the Institutional Ethics Committee of Rajah Muthiah Medical College and Hospital.

A semi-structured proforma was used for data collection and the following parameters were assessed: demographic details, presence or absence of risk factors such as diabetes, hypertension, tobacco use, occupational exposure to sunlight and smoke, etc., vital measurements, BMI, visual acuity, presence of cataract in one or both eyes, presence of IOL or aphakia in one or both eyes.^{7,26,27}

Cataract was diagnosed based on the presence of whitish/greyish opacity in the lens of the eye, when visualized using a torch light. Snellen's chart was used to assess the visual acuity of the study subjects. A simple "E" chart was used for those who were illiterate. Study participants were made to sit at a distance of 6 meters from the visual acuity chart and vision in each eye was tested with the participant closing the other eye with one palm. Visual impairment has been defined as a visual acuity of 6/18 or worse, in the better eye, with the best available correction.³ Early visual impairment (EVI) is defined as a visual acuity of 6/12 to 6/18 in the better eye, with the best available correction.³ Moderate visual impairment (MVI) is a visual acuity of 6/18 to 6/60 and severe visual impairment (SVI) as an acuity of 6/60 to 3/60, in the better eye with the best available correction.³

Persons who were currently on oral or injectable hypoglycemic agents were considered to have diabetes. Blood pressure was measured for all participants, on the left arm, in sitting posture, using a mercury column sphygmomanometer with an adult sized cuff. The 1st and 5th Korotkoff sounds were taken as SBP and DBP respectively. Systemic hypertension has been defined in this study as, a measured SBP ≥ 130 mmHg and DBP > 80 mmHg (according to the 2020 guidelines by the AHA) and/or the current use of anti-hypertensive medication.²⁸

Height was measured in cm, against a wall, using a measuring tape and weight was measured in Kg, using a standard calibrated weighing scale and BMI was calculated for all the study participants. As per the 2021 guidelines by the Centre for Disease Control, BMI of < 18 is underweight, BMI between 18 and 24.99 is normal, BMI between 25 to 29.99 is overweight and BMI > 30 is obesity.²⁹

The collected data was entered and analyzed using the SPSS (Statistical Package for Social Sciences) software, version 18. The collected data has been presented in the form of frequencies and percentages. Statistical analysis involved application of chi square tests with a 95% confidence interval and a significance level of 5%. A p value of 0.05 and lesser was considered to be statistically significant.

RESULTS

It was observed that, out of 202 women, only 6.9% (n=14) of the females were illiterate. 37.6% (n=76) had at least primary school education and 29.7% (n=60) had studied up to middle school. The remaining females had completed high school and above. The study population predominantly belonged to the upper lower socioeconomic status (70.8%), as per the modified Kuppuswamy socioeconomic status scale, 2021 (Figure 1).³⁰ The basic socio-demographic features of the sample population are given in Table 1.

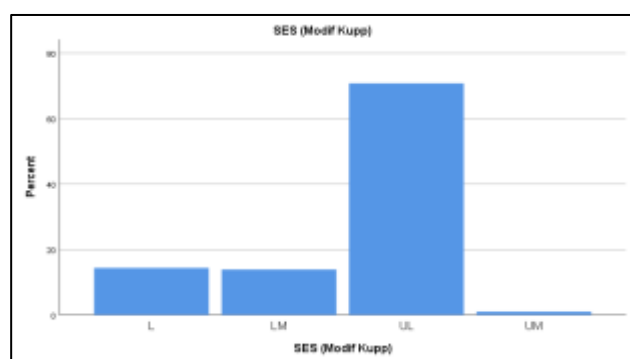


Figure 1: Distribution of the study subjects based on SES as per the modified Kuppuswamy socioeconomic status scale, 2021.

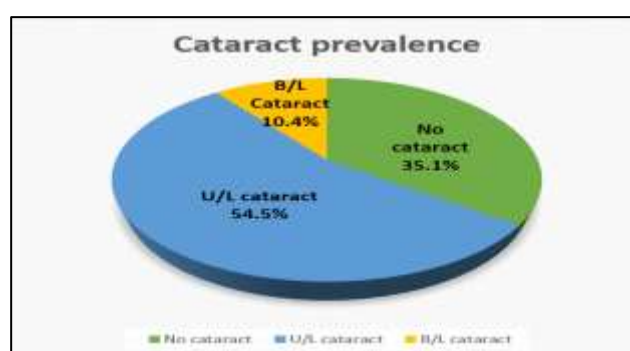


Figure 2: Prevalence of cataract among the study subjects (n=202).

The overall prevalence of cataract in the study population was 59.4% (n=397), whereas the prevalence among the female population alone was 64.9% (n=202), out of which 54.5% (n=110) of them had unilateral cataract and 10.4% (n=21) had bilateral cataract (Figure 2). The age-specific prevalence of cataract significantly increased

with increasing age ($p < 0.001$) with maximum prevalence (89.6%) in the age group of 80 years and above and the least prevalence (17.9%) among the 50-59 years age group (Table 2).

Table 1: Socio-demographic characteristics of the study subjects (n=202).

Basic characteristics	Frequency (n=202)	Percentage
Age (years)		
50-59	39	19.3
60-69	59	29.2
70-79	56	27.7
80 and above	48	23.8
Education		
Illiterate	14	6.9
Primary school	76	37.6
Middle school	60	29.7
High school	36	17.8
Higher secondary	9	4.5
Diploma	6	3.0
Graduate and above	1	0.5
Family type		
Living alone	12	5.9
Nuclear	55	27.2
Joint	99	49.1
Extended	36	17.8
SES (Modified Kuppuswamy scale)		
Upper middle class	2	1.0
Lower middle class	28	13.8
Upper lower class	143	70.8
Lower class	29	14.4

Table 2: Significance of association between increasing age and cataract.

Age	Cataract		Total (n)	χ^2 , df	p value
	Present	Absent			
50-59	7 (17.9%)	32 (82.1%)	39	55.26, 3, <0.001***	
60-69	37 (62.7%)	22 (37.3%)	59		
70-79	44 (78.6%)	12 (21.4%)	56		
80 and above	43 (89.6%)	5 (10.4%)	48		
Total	131 (65.1%)	71 (34.9%)	202		

***p<0.001 is statistically significant

Table 3 shows the prevalence of selected risk factors for cataract development, among the study population. Risk factors such as age ($p < 0.001$), diabetes [$p < 0.001$]; OR 3.27 (95% CI: 1.76-6.07)], hypertension [$p < 0.01$]; OR 2.39 (95% CI: 1.32-4.33)], tobacco usage [$p < 0.05$]; OR 2.54 (95% CI: 1.1-5.87)] and occupational exposure to sun [$p < 0.001$]; OR 16.5 (95% CI: 2.18-124.63)], were found to be significantly associated with presence of cataract. Those subjects with both diabetes and hypertension had a significantly higher prevalence of cataract (69.5%), $p < 0.001$.

Table 3: Association of cataract with selected risk factors.

Risk Factor	Cataract		No cataract		Total n	Chi square analysis	P value	OR	95% CI
	n	%	n	%					
BMI									
Normal	109	65.7	57	34.3	166	0.26	0.6	1.21	0.57-2.55
Overweight	22	61.1	14	38.9	36				
Diabetes									
Yes	101	73.7	36	26.3	137	14.69	0.001***	3.27	1.76-6.07
No	30	46.2	35	53.8	65				
Hypertension									
Yes	78	74.3	27	25.7	105	8.53	0.003**	2.39	1.32-4.33
No	53	54.6	44	45.4	97				
Steroid usage									
Yes	3	50.0	3	50.0	6	0.59	0.23	0.53	0.1-2.7
No	128	65.3	68	34.7	196				
Tobacco usage									
Yes	32	80.0	8	20.0	40	5.02	0.02*	2.54	1.1-5.87
No	99	61.1	63	38.9	162				
Occupational exposure to sun									
Yes	25	96.2	1	3.8	26	12.82	0.001***	16.5	2.18-124.63
No	106	60.2	70	39.8	176				
Exposure to smoke									
Yes	8	53.3	7	46.7	15	0.94	0.33	0.59	0.2-1.71
No	123	65.8	64	34.2	187				

*p<0.05 is statistically significant; **p<0.01 is statistically significant; ***p<0.001 is statistically significant

Table 4: Association between visual impairment and cataract.

Grading of visual impairment	Cataract				Total	Chi square df p value
	Present		Absent			
	n	%	n	%	n	
Severe visual impairment	3	100	0	0	3	8.03, 3, 0.04*
Moderate visual impairment	14	63.2	5	36.8	19	
Early visual impairment	33	78.6	9	21.4	42	
Normal vision	81	58.7	57	48.3	138	
Total	131	64.9	71	35.1	202	

*p<0.05 is statistically significant

About 38.2% (n=50) of those women with cataract, had some form of visual impairment. A significant association (p<0.001) was also found between cataract and the presence of visual impairment in the study population (Table 4).

Upon enquiring about the barriers to cataract surgery, it was found that, neglect (15.8%), nobody to accompany them for surgery (12.9%) and no felt need for surgery (12.9%) were the commonest reasons. 12.4% (n=25) of women were not aware of having cataract. Table 5 lists out the various barriers for cataract surgery perceived by the study subjects.

DISCUSSION

Study subjects 50 years of age and older were chosen because of the various available data establishing that

there is a definite increase in the prevalence of cataract with age.^{3,20,31,32} The prevalence of cataract in this study too, was also found to be significantly higher with advancing age, which is in accordance with a study done by Soudarssanane et al in a rural population in Pondicherry, which showed a steep rise (75.1%) in the number of cataract cases in those above 50 years of age.⁴

The prevalence of cataract mainly among a rural female population aged 50 years and above was concentrated on, because there is not sufficient literature focusing on the gender-wise prevalence of cataract. However, several studies have concluded that the prevalence of cataract is significantly higher among females when compared to males.^{11,15,24,33} Furthermore, a meta-analysis of several prevalence studies on cataract has shown that the prevalence of cataract blindness is higher among females, especially in those above 50 years of age and it also states that approximately 90% of them lived in poverty.³⁴ A

study by Pant et al states that the odds of cataract blindness was significantly higher in females than in males.²⁴ Supporting this statement, an assessment of the visual acuity of the subjects in this study also shows a significant association between visual impairment and cataract ($p<0.001$).

Table 5: Reasons for not undergoing cataract surgery.

Factors	Number (%)
No cataract bilaterally	71 (35.1)
Neglect	32 (15.8)
Neglected by family members	19
Self-neglect	13
Not aware of presence of cataract	25 (12.4)
U/L cataract	15
B/L cataract	10
Nobody to accompany	26 (12.9)
Nuclear family	17
Living alone	6
Joint family	3
No felt need	26 (12.9)
Normal vision	20
Early visual impairment	5
Moderate visual impairment	1
Fear of cost	5 (2.5)
Fear of surgery	6 (3.0)
Other important job	7 (3.5)
Household problems	3 (1.4)
Systemic illness	1 (0.5)
Total	202

Several studies have been conducted to estimate the cataract surgical coverage in India. A study on the cataract surgical coverage done by Courtright et al states that the overall prevalence of cataract is the highest in the South East Asian region, especially in India.²³ It also states that the cataract surgical rate of India is much lower than required.²³ Similarly, studies on assessing the barriers and facilitating factors to cataract surgery have also been conducted, predominantly in rural India. Many factors such as illiteracy, inaccessibility to health care services, remoteness of the region, distance of travel, etc., have been implicated as barriers to surgery.³⁵ Ye et al has established that the female gender itself, proves to be a barrier to cataract surgery.¹⁶ Prasad et al has further proven that the odds of women accessing cataract surgical services is significantly lower compared to men.³³ In view of these statements, the various barriers to availing cataract surgical services were determined and were also found to be in agreement with other studies.^{36,37} It was found in this study that most women, although aware of having cataract, tended to neglect it until any action was necessitated (15.8%). 12.9% of women did not feel the need to undergo surgery, as most of those diagnosed with cataract (53.7%) did not have visual impairment. 12.9% of women ($n=26$) reported not having anybody that could accompany them to the hospital and most of these women

(88.5%, $n=23$) were living alone ($n=6$) or in nuclear families ($n=17$) (Table 4). About two-fifths of women diagnosed with cataract in this study (12.4%, $n=25$) were not even aware of the presence of cataract. This study in determining the prevalence of cataract by doing house-to-house visits has therefore aided in diagnosing the presence of cataract in one or both eyes in 25 of the study subjects, thereby prompting them to seek medical attention.

There is quite a high prevalence of cataract (64.9%) in the female population aged 50 years and above, in this study, in comparison to a study done by Aarthi et al, which shows an overall prevalence of 62.8%.²⁰ This variation maybe due to the fact that the chosen study area has a slightly higher population of females compared to males. Longevity has also been implicated as a factor in justifying the higher prevalence of cataract among the female gender.^{10,11}

This study comes with a set of limitations. Firstly, the types of cataracts have not been classified in this study, since data collection was done through house-to-house visits. Secondly, the possibility of confounding cannot be eliminated because details such as duration of chronic illnesses like diabetes and hypertension could not be assessed. Those subjects with long-standing diabetes and/or hypertension could not satisfactorily recall the onset and duration of their illness. Duration and form of tobacco usage also couldn't be assessed. Similarly, the amount and duration of sunlight (UV) exposure among the study subjects also couldn't be assessed.

CONCLUSION

Based on the present study, the overall prevalence of cataract among women aged 50 years and above residing in the chosen study area, is high. However, the findings of this study are still on par with available literature stating that there is higher prevalence of cataract among females compared to males and in proving that the female gender itself serves as a barrier to cataract surgery.

Out of 131 women with cataract, 38.6% ($n=50$) of them were found to have some form of vision impairment. Vision impairment has both personal and economic impact on an individual. Moreover, adults living with impaired vision tend to have a lower quality of life and productivity. Elderly individuals are also more prone for social isolation, walking difficulty, falls, fractures and early entry into nursing homes.

As studies have suggested that females in general have very unique barriers in accessing health care services, it is essential to focus more on the gender-wise prevalence of cataract and barriers to surgical services. Further studies targeting cataract prevalence and utilization of cataract surgical services by females are required, to come to a fuller understanding of how gender influences the prevalence of cataract.

ACKNOWLEDGEMENTS

I would like to acknowledge the support and help of my professors of the department of community medicine, Rajah Muthiah Medical College and Hospital, towards conducting this study. I also thank all the study participants for their patience and cooperation in aiding with this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- WHO launches first World report on vision. Available from: <https://www.who.int/news/item/08-10-2019-who-launches-first-world-report-on-vision>. Accessed on 18 July 2021.
- More than a quarter of the world's population has vision impairment: WHO. Available from: <https://www.downtoearth.org.in/news/health/more-than-a-quarter-of-the-world-s-population-has-vision-impairment-who-67147>. Accessed on 18 July 2021.
- National Blindness and Visual Impairment Survey India 2015-2019; A Summary Report. Available from: <https://npcbvi.gov.in/writeReadData/mainlinkFile/File341.pdf>. Accessed on 24 July 2021.
- Soudarssanane MB, Bansal RD. Prevalence of senile cataract in a rural population in Pondicherry. *Indian J Community Med*. 1985;10(3):175-9.
- Raju P, George R, Ve Ramesh S, Arvind H, Baskaran M, Vijaya L. Influence of tobacco use on cataract development. *Br J Ophthalmol*. 2006;90(11):1374-7.
- Nirmalan PK. Risk factors for age related cataract in a rural population of southern India: the Aravind Comprehensive Eye Study. *Br J Ophthalmol*. 2004;88(8):989-94.
- Pastor-Valero M, Fletcher AE, de Stavola BL, Chaqués-Alepúz V. Years of sunlight exposure and cataract: a case-control study in a Mediterranean population. *BMC Ophthalmol*. 2007;7(1):18.
- Dolin PJ. Ultraviolet radiation and cataract: a review of the epidemiological evidence. *Br J Ophthalmol*. 1994;78(6):478.
- Krishnaiah S, Vilas K, Shamanna BR, Rao GN, Thomas R, Balasubramanian D. Smoking and its association with cataract: results of the Andhra Pradesh Eye Disease Study from India. *Investig Ophthalmol Vis Sci*. 2005;46(1):58-65.
- Cataract blindness hits women more than men in India. Down to Earth. Available from: <https://www.downtoearth.org.in/news/health/cataract-blindness-hits-women-more-than-men-in-india-65692>. Accessed on 24 July 2021.
- Lou L, Ye X, Xu P, Wang J, Xu Y, Jin K, et al. Association of sex with the global burden of cataract. *JAMA Ophthalmol*. 2018;136(2):116.
- Blindness and vision impairment. WHO. Available from: <https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment>. Accessed on 18 July 2021.
- Cataract top cause of blindness in India, finds survey. Down to Earth. Available from: <https://www.downtoearth.org.in/news/health/cataract-top-cause-of-blindness-in-india-finds-survey-67187>. Accessed on 18 June 2021.
- World blindness and visual impairment: despite many successes, the problem is growing. Global Eye Health Data. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5820628/pdf/jceh_30_100_071.pdf. Accessed on 18 July 2021.
- Zetterberg M, Celojovic D. Gender and cataract- the role of estrogen. *Curr Eye Res*. 2015;40(2):176-90.
- Ye Q, Chen Y, Yan W, Wang W, Zhong J, Tang C, et al. Female gender remains a significant barrier to access cataract surgery in South Asia: a systematic review and meta-analysis. *J Ophthalmol*. 2020;2020:1-14. Available from: <https://www.hindawi.com/journals/joph/2020/2091462/>
- Dolin PJ. Ultraviolet radiation and cataract: a review of the epidemiological evidence. *British Journal of Ophthalmology* [Internet]. 1994 Jun 1 [cited 2021 Oct 25];78(6):478–82. Available at: <https://bjo.bmj.com/lookup/doi/10.1136/bjo.78.6.478>.
- WHO EMRO. Cataract. Health topics. Available from: <http://www.emro.who.int/health-topics/cataract/>. Accessed on 18 June 2021.
- Nirmalan PK. A population based eye survey of older adults in Tirunelveli district of south India: blindness, cataract surgery, and visual outcomes. *Br J Ophthalmol*. 2002;86(5):505-12.
- Aarthi R, Roy G, Kar S, Srinivasan R. Prevalence of cataract among adults above 50 years in a rural community of Villupuram, Tamil Nadu. *Int J Adv Med Health Res*. 2015;2(1):50.
- Vashist P, Talwar B, Gogoi M, Maraini G, Camparini M, Ravindran RD, et al. Prevalence of Cataract in an Older Population in India. *Ophthalmology*. 2011;118(2):272-278.e2.
- Bharath B, Krishnaiah S, Imtiaz A, Ramani RV. Prevalence and determinants of cataract surgical coverage in India: findings from a population-based study. *Int J Community Med Public Health*. 2017;4(2):320.
- Lewallen S, Courtright P. Recognising and reducing barriers to cataract surgery. *Community Eye Health*. 2000;13(34):20-1. PMID: 17491950; PMCID: PMC1705969. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1705969/>.

24. Pant HB, Bandyopadhyay S, John N, Chandran A, Gudlavalleti MVS. Differential cataract blindness by sex in India: Evidence from two large national surveys. *Indian J Ophthalmol*. 2017;65(2):160-4.
25. Diaz-Granados N, Pitzul KB, Dorado LM, Wang F, McDermott S, Rondon MB, et al. Monitoring gender equity in health using gender-sensitive indicators: a cross-national study. *J Women Health*. 2011;20(1):145-53.
26. Pokhrel AK, Smith KR, Khalakdina A, Deuja A, Bates MN. Case-control study of indoor cooking smoke exposure and cataract in Nepal and India. *Int J Epidemiol*. 2005;34(3):702-8.
27. Module 11: Smoke Exposure and Cataract-Community Eye Health Course. Available from: <http://www.uniteforsight.org/community-eye-health-course/module12>. Accessed on 31 August 2021.
28. Unger T, Borghi C, Charchar F, Khan NA, Poulter NR, Prabhakaran D, et al. 2020 International Society of Hypertension Global Hypertension Practice Guidelines. *Hypertension*. 2020;75(6):1334-57.
29. CDC. Defining Adult Overweight and Obesity. Centers for Disease Control and Prevention. 2021 Available from: <https://www.cdc.gov/obesity/adult/defining.html>. Accessed on 16 August 2021.
30. Saleem SM, Jan SS. Modified Kuppaswamy socioeconomic scale updated for the year 2021. *Indian J Forens Community Med*. 2021;8(1):1-3.
31. Murthy GVS, Gupta SK, John N, Vashist P. Current status of cataract blindness and Vision 2020: The right to sight initiative in India. *Indian J Ophthalmol*. 2008;56(6):489-94.
32. Murthy GVS, John N, Shamanna BR, Pant HB. Elimination of avoidable blindness due to cataract: Where do we prioritize and how should we monitor this decade? *Indian J Ophthalmol*. 2012;60(5):438-45.
33. Prasad M, Malhotra S, Kalaivani M, Vashist P, Gupta SK. Gender differences in blindness, cataract blindness and cataract surgical coverage in India: a systematic review and meta-analysis. *Br J Ophthalmol*. 2020;104(2):220-4.
34. Abou-Gareeb I, Lewallen S, Bassett K, Courtright P. Gender and blindness: a meta-analysis of population-based prevalence surveys. *Ophthalm Epidemiol*. 2001;8(1):39-56.
35. Dharmadhikari S, Bakare PN, Deshpande CM, Hegade A, Kesari A. Study on barriers causing delay in cataract surgery of bilateral cataract blind at a tertiary eye care center in urban India. *J Clin Ophthalmol Res*. 2017;5(2):4.
36. Amritanand A, Jasper S, Paul P, Kuriakose T. Facilitating factors in overcoming barriers to cataract surgical services among the bilaterally cataract blind in Southern India: a cross-sectional study. *Indian J Ophthalmol*. 2018;66(7):963.
37. Dhaliwal U, Gupta S. Barriers to the uptake of cataract surgery in patients presenting to a hospital. *Indian J Ophthalmol*. 2007;55(2):133.

Cite this article as: Doss MSJ, Kalyani P, Felix AJW. Prevalence of cataract, its risk factors and the barriers to cataract surgery among older women in a rural population of Cuddalore. *Int J Community Med Public Health* 2021;8:5338-44.