



Original Research Article

Factors associated with late presentation of cataract in rural and urban patients: A cross-sectional study in Maharashtra

Shailaja Karve¹, Shubhangi Pimprikar^{1,*}¹Dept. of Ophthalmology, S M B T Medical College, Maharashtra, India

ARTICLE INFO

Article history:

Received 28-01-2020

Accepted 08-02-2020

Available online 16-06-2020

Keywords:

Cataract

Late presentation

Rural

Urban

ABSTRACT

Background: The prevalence of cataract is increasing. Delayed presentation with advanced cataract is quite common. There is scarcity of local data about the proportion of late presenters of cataract and the associated factors.

Objective: To assess the proportion of late presenters of cataract and determine factors associated with late presentation in rural and urban patients.

Materials and Methods: The study was conducted over three months in a medical college hospital on 422 patients. Their sociodemographic details were collected. A structured questionnaire was administered to understand the factors associated with delayed presentation. The data was analyzed using SPSS version 23.

Results: There were 430/1248 (34.4%) “late presenters” of whom 422 provided consent. There were 212 (50.2%) male patients. The mean age of patients was 60.9 ± 9.5 years. Majority, that is, 67.8% patients came from rural areas. The mean distance travelled by patients was 53 km (minimum 2 and maximum 200 km). The commonest reason for late presentation was lack of awareness [26.1%] followed by poor financial condition [19.9%] and lack of family support [12.8%]. The other reasons were inability to forego daily wages [10.9%], good vision in the contralateral eye [10%], acceptance of poor vision as part of ageing [7.6%], difficulty in reaching hospital [5.2%], systematic illness [5.2%] and fear of surgery [2.4%]. When reasons for delayed presentation were compared between rural and urban patients, it was found that significantly greater proportion of rural patients lacked awareness, were concerned about losing their daily wages and gave poverty as the reason and also pulled on with good vision in the contralateral eye or had accepted diminished vision as an integral part of ageing.

Conclusion: The most commonly quoted reason for late presentation of cataract was lack of awareness, especially in the illiterate rural patients which can be addressed through repeated counselling sessions by healthcare providers.

© 2020 Published by Innovative Publication. This is an open access article under the CC BY-NC license (<https://creativecommons.org/licenses/by-nc/4.0/>)

1. Introduction

According to the World Health Organization, cataract is the most important cause of blindness in the world. Cataract-induced blindness accounts for 47.8% of blindness, which is about 17.7 million blind people.¹ Ideally, the aim is to operate sufficient cataracts every year so that each patient with operable cataract (visual loss justifying surgery) can be benefited.² With increasing life expectancy, the elderly population is on the rise and so is the prevalence of cataract.

In India and in many other developing parts of the world, the burden of cases presenting with advanced cataract is high.^{2–6} Studies talking about delayed presentation of cataract have majorly focused on lens-induced glaucoma. The reasons for delay in presentation have been explored by a few researchers in the past. Lack of family support, lack of awareness, poor financial support, acceptance of poor vision as a part of ageing, fear of surgery and associated systemic illnesses have been cited as some of the reasons.^{3,4,7} There is scarcity of local data about the proportion of late presenters of cataract and the factors associated with it. Also, to the best of our knowledge, there is no study which

* Corresponding author.

E-mail address: shubhangipimprikar@gmail.com (S. Pimprikar).

explores both, the rural and urban scenarios regarding this issue. Hence we collected data from rural and urban patients attending a rural hospital to determine the proportion of late cataract presenters and associated factors. We believe that the results of this study will help us understand the local issues and guide us in designing implementation strategies to encourage “early” presentation in cataract patients.

2. Material and Methods

The study was carried out over a period of three months from October 2019 to December 2019 in a rural hospital in north-west Maharashtra. Approval was obtained from the Institutional Ethics Committee. Adult patients visiting the ophthalmology out-patient department (OPD) of the hospital with best corrected visual acuity less than 6/60 in the cataractous eye were diagnosed as “late presenters of cataract” and were included in the study. Informed consent was sought from every patient after explaining the study details carefully. In all, 3475 patients visited the OPD during the study period. Out of these, 1248 (36%) patients were diagnosed with cataract. There were 430 (34.4%) “late presenters” of which 422 patients provided consent for participation and were included in the study. Socio-demographic details such as age, sex, address, education, occupation, monthly family income and marital status were recorded. A detailed history taking and examination was conducted as per the standard clinical protocol. The patients were asked to describe their reasons for “delayed” presentation with the help of a structured questionnaire. The data was entered in a data collection form by research assistants and entered into SPSS version 23 for analysis. The data is presented as frequencies and means (\pm SD) as applicable. The chi-square test is used for determining associations between categorical variables and Student t-test has been used to determine differences between means as applicable.

3. Results

Data was collected from 422 patients. There was an almost equal distribution of males and females in our study sample with 212 (50.2%) male and 210 (49.8%) female patients. The mean age of patients was 60.9 years \pm 9.5 years (minimum 36 years and maximum 85 years). Majority of the patients (286/422, 67.8%) came from rural areas. Table 1 gives details of sociodemographic characteristics of our study sample.

There was no statistically significant difference between the ages of male and female patients in our study sample (61.1 years Vs. 60.6 years respectively, $p=0.569$). It was observed that 130/422 (30.8%) patients had some systemic comorbidity. A majority of the patients were hypertensive (42, 32.3%) followed by a combination of diabetes mellitus and hypertension in 38 (29.2%) patients and diabetes

mellitus alone in 34 (26.1%) patients. Other comorbidities that were found were chronic obstructive pulmonary disease (12, 9.2%) and ischemic heart disease (4, 3%). The majority of the rural patients were females (158/286, 55.2%) as compared to only 52/136 (38.2%) female patients from urban areas. This difference was statistically significant ($p=0.001$). The mean distance travelled by the patients to reach our hospital was 53 km (minimum 2 and maximum 200 km). Using the independent T-test, it was seen that the mean distance travelled to reach the hospital by urban dwellers was significantly greater than that travelled by rural residents (102.7 km Vs. 29.3 km, $p<0.000$). When examined with respect to sex of the patient, it was found that male patients travelled a significantly greater distance as compared to female patients (57.95 km Vs. 47.97 km respectively, $p=0.014$).

When asked to describe the reasons for delayed presentation of cataract, a variety of responses were obtained as summarized in Table 2. The most common reason that patients attributed their delayed presentation to, was their lack of awareness (110/422, 26.1%). The second and third most common reasons were poor financial condition (84/422, 19.9%) and lack of family support (54/422, 12.8%) respectively.

As shown in Table 3, using the chi-square test to look for associations between sex of the patient and reasons for delayed presentation, it was found that although not statistically significant, a greater proportion of females as compared to males accepted diminished vision as part of ageing and relied on good vision in the contralateral eye (40/210 (19%) Vs. 34/212 (16%) respectively, $p=0.154$). We found similar results when “lack of awareness” as a reason was studied. More female patients (60/210, 28.6%) gave this reason as compared to males (50/212, 23.6%) $p=0.154$ (not significant). As for poverty and concern about their daily wages was concerned, male patients outnumbered females (76/212 (35.8%) Vs. 54/210 (25.7%) respectively, $p=0.154$). When reasons for delayed presentation were compared between the rural and urban patients, it was found that significantly greater proportion of patients from the rural areas lacked awareness, were concerned about losing their daily wages and gave poverty as the reason and finally, pulled on with good vision in the contralateral eye or had accepted the diminished vision as an integral part of ageing (Table 4).

4. Discussion

The patients attending our OPD were from rural as well as urban areas, but being located in a rural area, the number of patients coming from the adjacent urban areas was comparatively lesser than that of the rural patients. The factors associated the large proportion of late presenters found in our study were mainly financial, social and personal. Factors such as lack transport facility, inability to

Table 1: Sociodemographic characteristics (N=422)

Characteristic		n (%)
Sex	Males	212 (50.2)
	Females	210 (49.8)
Place of residence	Rural	286 (67.8)
	Urban	136 (32.2)
	Married	352 (83.4)
Marital status	Single	6 (1.4)
	Widow	58 (13.7)
	Widower	6 (1.4)
Education	Illiterate	212 (50.2)
	Upto 10 th standard	196 (46.4)
	Graduate	14 (3.3)
	Farmer	240 (56.9)
Occupation	Service	24 (5.7)
	Shopkeeper	16 (3.8)
	Retired	12 (2.8)
	Homemaker	4 (0.9)
	Unemployed	110 (26.1)
	Others	16 (3.8)
	< Rs. 5000	276 (65.4)
Monthly family income	Rs. 5000 to Rs. 10,000	128 (30.3)
	Rs. 10,001 to Rs. 30,000	12 (2.8)
	Rs. 30,001 to Rs. 50,000	6 (1.4)

Table 2: Reasons for delayed presentation of cataract (N=422)

Reason for delayed presentation	n (%)
Lack of awareness	110 (26.1)
Poor financial condition	84 (19.9)
Lack of family support	54 (12.8)
Unable to forego daily wages	46 (10.9)
Good vision in contralateral eye	42 (10)
Acceptance of poor vision as part of aging	32 (7.6)
Difficulty in reaching hospital	22 (5.2)
Systemic illness	22 (5.2)
Fear of surgery	10 (2.4)

Table 3: Association between sex of the patient and reason for delayed presentation (N=422)

Reason	Males n (%)	Females n (%)	p value
Good vision in contralateral eye or acceptance of poor vision as part of aging	34 (16)	40 (19)	0.154
Poor financial condition or unable to forego daily wages	76 (35.8)	54 (25.7)	
Lack of awareness	50 (23.6)	60 (28.6)	
Others (Lack of family support, difficulty in reaching the hospital, systemic illness, fear of surgery)	52 (24.5)	56 (26.7)	
Total	212	210	

Table 4: Reasons for delayed presentation according to place of residence (N=422)

Reason	Urban n (%)	Rural n (%)	p value
Good vision in contralateral eye or acceptance of poor vision as part of aging	22 (16.2)	52 (18.2)	0.000
Poor financial condition or unable to forego daily wages	36 (26.5)	94 (33)	
Lack of awareness	20 (14.7)	90 (31.5)	
Others (lack of family support, difficulty in reaching the hospital, systemic illness, fear of surgery)	58 (42.6)	50 (17.5)	
Total	136 (100)	286 (100)	

forego daily wages and acceptance of poor vision as a part of the ageing process were found contributory to the delayed presentation.

In this study, a huge majority of our participants were either illiterate or educated only upto 10th standard. This could have contributed to the large proportion of patients who lacked awareness (26%) and hence ended up presenting late with cataract. In an earlier study carried out in urban Maharashtra,⁸ lack of awareness was found in 16% patients and in another study conducted in rural Andhra Pradesh,⁹ it was found to be 4%. A higher prevalence of lack of awareness (48%) has been reported from a study from Nepal¹⁰ while that from Ghaziabad (29%) is comparable to our study.¹¹ Poor financial condition was found to be the second most common factor associated with delayed presentation in our study. However, the cataract surgery is carried out free of charge at our hospital. It appears that there could have been a lack of awareness about this, as well. In addition, it could have been difficult for these patients to bear the ancillary expenses for transport of self and accompanying persons, food and medicines. Also, for many, a visit to the hospital meant forgoing their daily wages, a reason which was cited by 10.9% patients. In this respect, more males than females were seen to be concerned. Also, this reason was more prevalent in rural patients as compared to urban patients. In a similar study carried out in Nigeria,¹² financial reasons contributed to 61%, while a study in Karnataka found the same in 13.4% patients.¹³ Lack of family support was expressed as another important reason by patients (12.8%) in this study.

The long distances needed to be travelled to reach the hospital have contributed to the delayed presentation of cataract in our study. It was seen that the mean distance travelled by patients to reach our hospital was 53 km. The distance travelled by urban patients was greater than that travelled by the rural patients. This was due to the rural location of our hospital. In a study carried out in an urban area, the mean distance travelled was found to be 25 km.⁸ A small proportion of our patients (7%) cited difficulty in reaching the hospital as a reason which was comparable to the 5% found in a similar Indian study.¹¹ Good vision in the other eye or acceptance of poor vision as part of ageing was reported by 17.6% of patients as a reason for presenting late. Again, this can be attributed to the highly prevalent illiteracy in our study sample. One of the reasons could be that patients were simply unaware that loss of vision can be treated and good vision restored. Apart from illiteracy, since both these reasons were found more prevalent among female patients, this could reflect the submissive nature of women in the rural areas. Female patients lacked the motivation to go to the hospital so far as they could carry out household and routine chores. In a similar study carried out in Karnataka,⁹ it was found to be a reason for delayed presentation in 21.5% patients.

There was a small proportion of patients (2.4%) in whom fear of surgery was found to be the reason for delayed presentation. We believe that this can be dealt with by counselling by doctors and relatives of patients who have undergone cataract surgery with good visual outcome. Fear of surgery has been reported at 21.9% in a study from rural India.¹⁴

The lack of awareness can be overcome by imparting knowledge by healthcare workers in the villages with special focus on counseling women. Those who have undergone successful cataract surgery can be motivators in this process.

5. Conclusion

A multipronged approach in order to facilitate personal and social awareness and accessibility would be needed to overcome the various hurdles in the way of timely presentation of cataract.

6. Source of Funding

None.

7. Conflict of Interest

None.

References

1. Murthy GVS, Gupta SK, Bachani D, Jose R, John N. Current estimates of blindness in India. *Br J Ophthalmol.* 2005;89:257–60.
2. Pradhan D, Hennig A, Kumar J, Foster A. A prospective study of 413 cases of lens-induced glaucoma in Nepal. *Indian J Ophthalmol (Internet).* 2001;49(2):103–7.
3. Hegde S, Sekharreddy M, Kumar M, Dayanidhi V. Prospective study of hypermature cataract in Kanchipuram district: Causes of delayed presentation, risk of lens-induced glaucoma and visual prognosis. *Kerala J Ophthalmol.* 2018;30(3):187–92.
4. Zhang M, Wu X, Li L, Huang Y, Wang G, Lam J. Understanding barriers to cataract surgery among older persons in rural China through focus groups. *Ophthalmic Epidemiol.* 2011;18(4):179–86.
5. Tanchangya J, Khan RA, Bayasakh S, Wichaidit W. Gender disparity in delayed treatment-seeking behavior for cataract: 6 years of experience from impact Jibon Tari Floating Hospital. *Asia-Pacific J Public Heal.* 2015;27(2):240–7.
6. Mehari Z, Zewedu RH, Gulilat F. Barriers to cataract surgical uptake in central ethiopia. *Middle East Afr J Ophthalmol.* 2013;20(3):229–33.
7. Kothari R, Tathe S, Gogri P, Bhandari A. Lens-Induced Glaucoma: The Need to Spread Awareness about Early Management of Cataract among Rural Population. *ISRN Ophthalmol.* 2013;2013. doi:10.1155/2013/581727.
8. Dharmadhikari S, Bakare PN, Deshpande M, 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. *Indian J Ophthalmol.* 2017;5(2):69–72.
9. Kovai V, Krishnaiah S, Shamanna B, Thomas R, Rao G. Barriers to accessing eye care services among visually impaired populations in rural Andhra Pradesh, South India. *Indian J Ophthalmol.* 2007;55(5):365–71.
10. Snellingen T, Shrestha BR, Gharti MP, Shrestha JK, Upadhyay MP, Pokhrel RP. Socioeconomic barriers to cataract surgery in Nepal: the south Asian cataract management study. *Br J Ophthalmol.* 1998;82(12):1424–28.

11. Dhaliwal U, Gupta S. Barriers to the uptake of cataract surgery in patients presenting to a hospital. *Indian J Ophthalmol*. 2007;55(2):133–6.
12. Rabi MM. Cataract blindness and barriers to uptake of cataract surgery in a rural community of northern Nigeria. *Br J Ophthalmol*. 2001;85(7):776–80.
13. Vaidyanathan K, Limburg H, Foster A, Pandey RM. Changing trends in barriers to cataract surgery in India. *Bull World Health Organ*. 1999;77(2):104–9.
14. Fletcher AE, Donoghue M, Devavaram J. Low uptake of eye services in rural India: a challenge for programs of blindness prevention. *Arch Ophthalmol*. 1999;117(10):1393–9.

Author biography

Shailaja Karve Associate Professor

Shubhangi Pimprikar Assistant Professor

Cite this article: Karve S, Pimprikar S. Factors associated with late presentation of cataract in rural and urban patients: A cross-sectional study in Maharashtra. *Indian J Clin Exp Ophthalmol* 2020;6(2):208-212.