Original Research Article

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A study to assess the barriers for cataract surgery uptake among elderly population of Aligarh

Mohd Najmul Aqib Khan*, M. Athar Ansari, Anees Ahmad, Salman Khalil, Mohd Maroof

Department of Community Medicine, J.N Medical College, AMU, Aligarh, Uttar Pradesh, India

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*Correspondence:

Dr. Mohd Najmul Aqib Khan, E-mail: drmnaqib@gmail.com

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ABSTRACT

Background: As cataract being one of the commonest cause of avoidable blindness in India, the study of the barriers that delay the surgical uptake becomes important. This study been done to report the barriers delaying the surgical management and socio-demographic association of delay period.

Methods: This study was part of community based cross-sectional study carried out among elderly population residing at field practice area of Rural Health Training Centre and Urban Health Training Centre, JN Medical College, AMU, Aligarh. A sample of 550 was taken from the registered elderly population aged 60 years and above using systematic random sampling with PPS. Barriers for 1st eye surgery were reported among 277 un-operated elderly and for the 2nd eye surgery among those 65 elderly who had operable cataract (defined as cataract in both eyes with low vision affecting daily activities) in one eye with aphaki/pseudophakia in the other. Factors contributing for the delay in uptake of surgery were assessed among operated individuals only (120).

Results: Major barriers reported in the study were lack of awareness (33.2%), not able to afford treatment (25.3%), waiting for the cataract to get mature (19.9%). For second eye surgery major barriers reported were, waiting period for maturation (36.9%) followed by corrected vision in the other eye (24.6%) and non-affordability (23%). Significant association of the delay period reported with area, age, sex, education and SLI.

Conclusions: Lack of awareness, non-affordability, waiting for the cataract to get, corrected vision in the other eye were the major factors delaying cataract surgery among elderly.

Keywords: Barriers, Cataract surgery, Delay, Elderly, Aligarh

INTRODUCTION

In both developed and developing countries cataract is reported as an important cause of low vision. As per rapid assessment of avoidable blindness in India cataract was identified as the most important and commonest cause of blindness (58.1%). As people in the world live longer, the number of people with cataract is anticipated to grow. Compared to industrialized countries it is also seen that cataract develops approximately 10 to 14 years earlier in Indian population. As per UN, India is expected to see an increase in the proportion of aged

population (60+ years) from 8% in 2000 to 21% in 2050. This increase will affect directly the number of people with cataract in the country.⁴

Increasing the number of cataract surgeries was adopted among the strategies to reduce the cataract backlog.⁵⁻⁸ Despite rapid increase in the availability of quality services, surgical acceptance is still low in some segments of society.⁸⁻¹² Barriers to accepting surgery for cataract have been addressed in few studies, mostly from developing countries.^{9,10} However, studies from India also addressed regional issues.^{11,12} Therefore, it becomes

critical for planning strategies to determine barriers to use of eye care services in order to prevent blindness.

This study was done to report barriers for cataract surgery uptake and the association of delay in seeking surgery with socio-demographic factors amongst elderly population of Aligarh.

METHODS

This study was part of community based cross-sectional study carried out among elderly population residing at field practice area of Rural Health Training Centre and Urban Health Training Centre, JN Medical College, AMU, Aligarh.

Sample size

The sample size for the study was calculated on the basis of cataract prevalence of 81% reported in a study done by Haq et al in Aligarh.¹³

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n = Z^2 p (100- p)/I^2

n = (1.96)<sup>2</sup> p(100- p)/I^2,

q = 100- p

n ~ 4pq/I^2

p = Prevalence of cataract = 81%, q = 100 - p = 19,

Absolute precision (1) = 5%

Substituting the values- (4×81×19) ÷ 5<sup>2</sup>

= 246+ 10% non-response

= 246+ 25= 271 ≈ 275

Design effect = 2
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Total population to be taken from UHTC & RHTC= 275×2=550 which was sampled using systematic random sampling with PPS (RHTC=385, UHTC=165).

Inclusion criteria

Inclusion criteria were individuals aged 60 years and above; those individuals who gave consent.

Exclusion criteria

Exclusion criteria were individuals less than 60 years; individuals who did not give consent; those individuals in whom the lens couldn't be visualized due to any superficial corneal opacity.

Operational definition

Operable cataract

A person who was unilateral or bilateral cataract affecting his/her daily routine

The study period was of one year from July 2014- June 2015. The data was collected using predesigned & pretested questionnaire using systematic random sampling with PPS. Cataract, psuedophakia/aphakia was

identified using torch with detailed history. 397 elderly found to be having cataract out of 550 elderly with 120 of them found operated for one or both the eyes. Among the operated elderly all of them were aware about the cataract (safed motia) and its possible definitive management. So existing barriers for 1st eye surgery were reported among 277 non-operated elderly and for the 2nd surgery among those 65 elderly who had operable cataract (defined as cataract in both eyes with low vision affecting daily activities) in one eye with aphaki/pseudophakia in the other. Factors contributing for the delay in uptake of surgery were assessed among operated individuals only (120). For elderly who found operated for both the eyes, delay period been taken for the first surgery.

Informed verbal consent was taken from each individual. The nature & consequence of study was explained to them. The study was approved by Institutional Ethics committee. Data was analysed using SPSS version 20. Tests of proportion, chi-square test were used for univariate analysis. P<0.05 was considered as significant.

RESULTS

Reported barriers for cataract surgery

Among the barriers for 1st first surgery, lack of awareness for the disease and surgical treatment was reported in 92 (33.2%) out of 277 non-operated elderly who never consulted for the diminished vision (Table 1). Awareness for the disease and its treatment modality was there in 185 (66.8%) subjects. Major barriers reported among aware individuals were not able to afford treatment 70 (25.3%), waiting for the cataract to get mature 55 (19.9%). Other reported reasons in present study for the delay were no trust in treatment (fear of complications, 5.8%), no escort to treatment (4.7%), not sure when to take treatment (4.7%), can see with other eye (2.5%), 2.5% said its god's wish while only 4 (1.4%) were not aware of the right place for consultation. The prevalence of all barriers in this study were more among the females as more percentage of females 53(57.6%) were not aware compared to males 39 (42.3%). Out of 70 elderly who reported non-affordability as a barrier, a higher percentage (67.1%) reported to be females. Among individuals (n=55) who want to get operated when cataract will be in mature stage, the percentage of both the sexes were found to be almost equal.

Major barriers reported in this study for second eye surgery were, waiting for cataract to get mature (36.9%) followed by corrected vision in the other eye (24.6%) and non-affordability (23%). Other reasons for the delay were, no trust in surgery (fear of complication, 7.7%), not sure when to for next surgery (3.1%) and no one to escort in 4.6%. The reporting of major barriers for 2nd surgery was more among females, 9 out of 15 who stated non-affordability were females and 13 out of 24 were females who were found waiting for cataract maturation for the second surgery.

Table 1: Distribution of barriers for the 1st cataract surgery with sex.

Barrier	Sex of interviewe	Sex of interviewee	
	Male (%)	Female (%)	Total (%)
Not aware	39 (35.8)	53 (31.5)	92 (33.2)
Can't afford treatment	23 (21.1)	47 (27.9)	70 (25.3)
Can see with other eye	5 (4.6)	2 (1.2)	7 (2.5)
Not aware of place of treatment	2 (1.8)	2 (1.2)	4 (1.4)
God's wish	2 (1.8)	5 (3.0)	7 (2.5)
No trust in treatment	3 (2.7)	13 (7.7)	16 (5.8)
Not sure when to take treatment	4 (3.7)	9 (5.4)	13 (4.7)
No escort to treatment	4 (3.7)	9 (5.4)	13 (4.7)
Waiting for it to get mature	27 (24.8)	28 (16.7)	55 (19.9)
Total	109 (100.0)	168 (100.0)	277 (100.0)

Table: 2 Distribution of barriers for the 2nd cataract surgery with sex.

Barrier	Sex of interviewee		Total (0/)
	Male (%)	Female (%)	Total (%)
Can't afford treatment	6 (19.4)	9 (26.4)	15 (23.0)
Can see with other eye	9 (29.0)	7 (20.6)	16 (24.6)
No trust in treatment	3 (9.6)	2 (5.9)	5 (7.7)
Not sure when to take treatment	1 (3.3)	1 (2.9)	2 (3.1)
No escort to treatment	1 (3.3)	2 (5.9)	3 (4.6)
Waiting for it to get mature	11 (35.4)	13 (38.3)	24 (36.9)
Total	31 (100.0)	34 (100.0)	65 (100.0)

Table 3: Analysis of factors associated with delay in cataract surgery.

	Delay period			
	<6 months N (%)	6-12 months N (%)	>12 months N (%)	Total (%)
1. Area				
Rural	22 (30.1)	11 (15.1)	40 (54.8)	73 (100)
Urban	18 (38.3)	14 (29.8)	15 (31.9)	47 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=6.810 df=2 p=0.033				
2. Age				
60year-69year	30 (39.5)	21 (27.6)	25 (32.9)	76 (100)
70year-79year	8 (27.6)	2 (6.9)	19 (65.5)	29 (100)
80 year and above	2 (13.3)	2 (13.3)	11 (73.3)	15 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=15.444 df=4 p=0.004				
3. Sex				
Male	27 (45.0)	13 (21.7)	20 (33.3)	60 (100)
Female	13 (21.7)	12 (20.0)	35 (58.3)	60 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=9.031 df=2 p=0.011				
4. Religion				
Muslim	23 (35.9)	16 (25.0)	25 (39.1)	64 (100)
Hindu	17 (30.4)	9 (16.1)	30 (53.6)	56 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=2.794 df=2 p=0.247				
5. Education				
Illiterate	12 (16.2)	16 (21.6)	46 (62.2)	74 (100)
Primary	13 (61.9)	3 (14.3)	5 (23.8)	21 (100)
High school & above	15 (60.0)	6 (24.0)	4 (16.0)	25 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=28.937 df=4 p< 0.001				

6. Earning status in family				
Earning member	15 (42.9)	7 (20.0)	13 (37.1)	35 (100)
Non-earning member	25 (29.4)	18 (21.2)	42 (49.4)	85 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=2.175 df=2 p=0.337				
7. Family type				
Nuclear	22 (37.9)	12 (20.7)	24 (41.4)	58 (100)
Joint	18 (29.0)	13 (21.0)	31 (50.0)	62 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=1.199 df=2 p=0.549				
8. SLI				
Low	7 (21.9)	2 (6.2)	23 (71.9)	32 (100)
Medium	19 (35.8)	14 (26.4)	20 (37.7)	53 (100)
High	14 (40.0)	9 (25.7)	12 (34.3)	35 (100)
Total	40 (33.3)	25 (20.8)	55 (45.8)	120 (100)
χ2=12.799 df=4 p=0.012				

Factors associated with delay in seeking surgical care.

The association of the delay period came out to be significant (p=0.033) with area as more than 12 month delay was reported among 54.8% rural residents compared to 31.9% urban. With age the delay found to increase significantly as 73.3% of elderly in the age group 80 year and above had time lapse of more than 12 month compared to age group 60-69 years (32.9%) (p=0.004).

Sex of the elderly, education, and SLI (standard of living index) also found to increase the delay significantly. Delay period was reported higher among females (p=0.001). Among illiterate more than 12 month delay was reported in 62.2% (p<0.001). Among the families with low SLI more than 12 month delay was reported in 71.9% (p=0.012) elderly compared to 31.6% among families with high standard of living index.

As far as religion, earning status of elderly and family type was concerned, they didn't seem to significantly affect the delay time since cataract diagnosis was made and they were advised for surgery.

DISCUSSION

Major barriers reported in the study were lack of awareness (33.2%), not able to afford treatment (25.3%), waiting for the cataract to get mature (19.9%). For second eye surgery major barriers reported were, waiting period for maturation (36.9%) followed by corrected vision in the other eye (24.6%) and non-affordability (23%).

Bettadapura et al reported "No one to accompany" and "Waiting for maturity" to be the major barriers (27.2% each). ¹⁴ Barriers related to patient attitude like (ability to manage routine work, cataract not mature, could see clearly with the other eye, busy with work), than to issues of service delivery or cost and affordability (insufficient family income) were found in majority by Dhaliwal and

Gupta. 15 Bhagwan et al reported that 70.69% cases wanted operation only when able to see nothing. 16 Rabiu reported the main barriers for seeking cataract surgery were cost of the service (61%) and better vision in the other eye (18%).9 Saikumar et al reported lack of escort, fear of surgery, socioeconomic reasons, adverse media reports of failures of surgery and surgery not needed to be the main barriers.¹⁷ Studies done in adjacent regions also found similar reasons for not taking surgical care as Yin et al reported lack of knowledge about cataract and concerns about the quality of local services as barriers¹⁸ and Snellingen et al in their study in nepal found economic (48%) and logistical (44.8%) constraints followed by fear of surgery (33.3%) and lack of time (18.8%) to be the most frequent reasons for not accepting surgery. 19 Vaidyanathan et al reported that 24% of people bilaterally blind and 33% of those unilaterally blind, found waiting for cataract to get mature. Second barrier they found (21.6% of the bilaterally blind) was "no one to accompany" and "Fear of operation" in 12.3% of the bilaterally blind population as a barrier. 11 In our study the proportion of females was higher in almost all the reported barriers. Males mentioned waiting for cataract to get mature more than females while females (24.9%) stated "no one to accompany" nearly twice as frequently as males (14.2%) in other study. 11 Addressal of barriers reported in the present study planning and policy making could improve utilization of services and cataract surgery uptake. However even when surgery is free and transport facility is available, cataract acceptance rates are low as indicated in a population-based data from India. 15

The time duration (delay) to seek cataract surgery since diagnosis been made, found significantly longer with rural area (p=0.033), age 80 years and above (p=0.004), female sex of the elderly (p=0.001), and low SLI (p=0.012). Delay period reported shorter among elderly having education of high school and above (p<0.001).

Other study reported statistically significant direct association with age, monthly income, residence, distance

from hospital (p<0.05, all comparisons) and inverse association with educational status. Although, the percentage of women delaying cataract surgery was higher than men, it was not statistically significant (p>0.05). 20

CONCLUSION

The findings of this study are similar to other regions of the country and adjacent developing countries. Lack of awareness, not able to afford treatment, waiting for the cataract to get mature were the major barriers for first surgery and waiting period for maturation, corrected vision in the other eye (24.6%) and non-affordability for the second surgery. Further expansion and strengthening of the surgical outreach programme and effective community-oriented eye health education should be undertaken to overcome the barriers.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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