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### Quality of life and barriers to undergo cataract surgery

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#### Abstract

Cataract is the major cause of blindness and visual impairment in most cases worldwide. Measuring the QOL of patients with Cataract and assessing the Barriers to undergo Cataract surgery among patients will highlight the importance of the vision related needs of elderly population, which in turn will be an eye opener for the health care professionals to focus on the vision needs of the elderly.

**Aim:** The study aims to assess the Quality of life and the barriers to undergo cataract surgery.

**Objectives:** 1. Assess the Quality of Life among patients with Cataract. 2. Assess the barriers to undergo cataract surgery among patients with Cataract. 3. Find association between Quality of life and barriers with the selected demographic variables.

**Methods:** Descriptive non experimental research design was used. The conceptual framework was based on Roy's adaptation model. A total of 100 patients with cataract advised for surgery attending OPD in DRR Eye care and Oculoplasty Hospital, Chennai were selected by purposive sampling technique. The investigator collected data using interview technique. The Quality of Life was measured using Indian Vision Function Questionnaire (IVFQ)-33 and barriers was measured using checklist. The data was analyzed using descriptive statistics (frequency distribution, mean and standard deviation) and inferential statistics (chi-square test).

**Results:** The overall quality of life revealed that 84(84%) had good quality of life and 16(16%) had moderate quality of life. The mean score of quality of life was  $59.36 \pm 10.81$  with minimum score of 41.0 and maximum score of 92.0. With regard to barriers, all 100(100%) had mild level of barrier to undergo cataract surgery among patients with cataract and the mean score of barriers was  $2.77 \pm 1.29$  with minimum score of 0 and maximum score of 7.0. The demographic variable occupation ( $\chi^2=10.361$ ,  $p=0.035$ ) had shown statistically significant association with quality of life at  $p<0.05$  level. The demographic variables glaucoma ( $\chi^2=10.714$ ,  $p=0.0001$ ) and time taken to decide for surgery from when it is advised ( $\chi^2=6.356$ ,  $p=0.044$ ) had shown statistically significant association with mean score of barriers to undergo cataract surgery at  $p<0.001$  and  $p<0.05$  level respectively.

**Conclusion:** Overall, majority of the participants had experienced good quality of life but quality of life score was less in visual functioning aspects. Certain areas such as fear of cataract surgery, cataract not matured, were able to see clearly through the other eye, old age, cost of surgery, busy with work, insufficient family income and no caregivers to look after were expressed as barriers to undergo surgery. Understanding Quality of Life and the reasons for delayed treatment will help Nurses to initiate intervention to promote utilization of eye care services.

**Keywords:** Cataract, quality of life, barriers

#### Introduction

Cataract is the major cause of blindness and visual impairment in more cases worldwide. In 1998, it was evaluated that 20 million people were blind due to cataract. (Muhammad. N *et al.*, 2017) [25]. More than 1 billion people worldwide were living with vision impairment as they don't care the need for conditions like far and near sightedness, glaucoma and cataract. (Hashemi. H *et al.*, 2020) [14]. A Cataract is an opacity in the lens of the eye that may cause a loss of visual acuity. Vision is diminished because the light rays are unable to get to the retina through the clouded lens. (Linda S. Williams and Paula D. Hopper, 2015).

In developing countries, cataract surgery is the major cause of blindness. According to the World Health Report of 1981, 19.34 million people are bilaterally blind (less than

3/60 in the better eye) due to age-related cataract. This accounted for 43% of all blindness.

#### Need for the study

- With the purpose of reducing blindness, India was the first country in the world to initiate the National Programme for Control of Blindness in 1976. India is committed to reduce the burden of preventable blindness by 2020 by implementing the Vision 2020 strategies. The "Right to Sight" India was created in May 2004 as an NGO confederation parallel to the international organisation to organize and consolidate the activities of various sectors and organisations towards the national plan of action to achieve the goals of Vision 2020 in India.

- Measuring the QOL of patients with Cataract and assessing the Barriers to undergo Cataract surgery among patients will highlight the importance of the vision related needs of elderly population, which in turn will be an eye opener for the health care professionals to focus on the vision needs of the elderly.

#### **Aim of the study**

The study aims to assess the Quality of life and the barriers to undergo cataract surgery among patients with Cataract

#### **Statement of the problem**

A study to assess the Quality of Life and the Barriers to undergo Cataract surgery among patients attending OPD in a selected hospital.

#### **Objectives**

The objectives of the study were to

- assess the Quality of Life among patients with Cataract
- assess the barriers to undergo cataract surgery among patients with Cataract
- find association between Quality of life and barriers with the selected demographic variables

#### **Hypothesis**

- RH<sub>1</sub> – There will be a significant association between Quality of life and Barriers with the selected demographic variable

#### **Materials and Methods**

##### **Research design**

Non experimental descriptive research design was used to assess the Quality of Life of cataract patients and the Barriers to undergo cataract surgery

##### **Research variables**

Variables include the Quality of Life of patients with cataract and Barriers to undergo cataract surgery  
Demographic variables included age, gender, marital status, community, education, occupation, socioeconomic status, clinical variables including eye history and co-morbidities

##### **Setting of the study**

The study was conducted at DRR Eye care and Oculoplasty Hospital in Karayanchavadi, Chennai. This hospital was established in the year 2003. It is known to provide top services in the following categories as Opticians, Ophthalmologists, Eye clinics, Eye surgeon doctors. The OPD functions from 8 am to 8 pm on Monday to Saturday. Approximately 100 – 120 patients attend OPD every day and around 10 – 15 patients with cataract visit OPD per day.

##### **Population**

###### **Target population**

The target population of this study involves patients with mature/immature cataract

###### **Accessible population**

The patients with Cataract attending OPD in in DRR Eye care and Oculoplasty Hospital in Karayanchavadi, Chennai.

##### **Sample**

The study sample included the patients with Cataract who

were attending OPD in DRR Eye care and Oculoplasty Hospital in Karayanchavadi, Chennai and those who met the inclusion criteria

##### **Sample size**

Sample size consisted of 100 patients with cataract attending OPD in DRR Eye care and Oculoplasty Hospital in Karayanchavadi, Chennai.

##### **Sampling technique**

Purposive sampling technique was used to select the samples for the study.

##### **Criteria for selection of samples**

###### **Inclusion Criteria**

- The patients with mature and immature cataract.
- The patients with cataract above 45 years.
- The patients diagnosed with cataract who is advised for cataract surgery.

###### **Exclusion Criteria**

- Patients who are not fit for surgical procedure.
- Patients are not willing to participate in the study.

##### **Instruments**

###### **Description of the tool**

The tool was developed and standardized from extensive review of literature, internet research and discussion with experts. The tool consisted of three sections

Section A – Demographic Variables

Section B – Indian Vision Function Questionnaire 33 - To assess the Quality of Life of patients with Cataract

Section C – Checklist - To assess the Barriers to undergo cataract surgery.

###### **Section-A**

Socio demographic and Clinical variables

Sociodemographic variables consisted of Age, Gender, Marital status, Community, Education, Occupation, Socio economic status of family.

Clinical variables consisted of Eye history such as - Previous cataract surgery, Glaucoma, Refractive errors, Initial symptoms started in the eye and time taken to decide for surgery from when it is advised and co-morbidities.

###### **Section-B**

Quality of Life – Indian Vision Function Questionnaire 33

The Vision Function Questionnaire consisted of 33 items,

- General functioning – 21 items (5 point likert scale)
- Psychosocial impact - 5 items (4 point likert scale)
- Visual symptoms - 7 items (4 point likert scale)

###### **Section -C –**

Checklist consists of 21 questions to assess the barriers to undergo cataract surgery.

This was categorized as,

- Attitude and Belief (11 items)
- Financial and Logistics (4 items)
- Social and other commitments (6 items) and at the end, an any other option was given for free response.

The percentage of each barrier and subscale barrier was calculated.

**Ethical considerations**

Ethical clearance was obtained from IEC of A.C.S Medical College and Hospital (No.295/2021/IEC/ACSMCH Dt.10.08.2021). Informed consent was obtained from the participants. The subjects selected for the study were assured for the confidentiality of the information provided to the investigator.

**Data collection procedure**

Formal permission was obtained from the concerned authorities of DRR Eye care and Oculoplasty Hospital in Karayanchavadi, Chennai. The participants were selected using purposive sampling technique. Written informed

consent was obtained. Data collection period was from 12.11.2021 to 12.12.2021. Each day 5 to 8 samples were selected and the data is collected regarding demographic variables, the level of Quality of Life of cataract patients by Indian Vision Function Questionnaire (IVFQ) – 33 and the Barriers to undergo cataract surgery with Checklist by Interview method among the patients attending OPD. After data collection, pamphlet on Cataract surgery was distributed to all participants.

**Results**

**Section A:** Description of the socio-demographic variables among patients with Cataract.

**Table 1:** Frequency and Percentage distribution of demographic variables of patients with Cataract. N = 100

Demographic Variables	Frequency	Percentage
<b>Age</b>		
45 – 55 years	30	30.0
56 – 65 years	43	43.0
>65 years	27	27.0
<b>Gender</b>		
Male	33	33.0
Female	67	67.0
<b>Marital status</b>		
Single	8	8.0
Married	61	61.0
Widow	31	31.0
<b>Community</b>		
Semi urban	5	5.0
Urban	95	95.0
<b>Education</b>		
Illiterate	24	24.0
Primary school level	57	57.0
Secondary school level	13	13.0
Graduate	6	6.0
<b>Occupation</b>		
Unemployment	50	50.0
Private	26	26.0
Government	9	9.0
Daily wages	9	9.0
Retired	6	6.0
<b>Comorbidities – Eye History</b>		
<b>Previous cataract surgery</b>		
Yes	32	32.0
No	68	68.0
<b>Glaucoma</b>		
Yes	2	2.0
No	98	98.0
<b>Refractive error</b>		
Yes	51	51.0
No	49	49.0

Table 1: continued.

Demographic Variables	Frequency	Percentage
<b>Medical history</b>		
<b>Diabetes</b>		
Yes	42	42.0
No	58	58.0
<b>Hypertension</b>		
Yes	41	41.0
No	59	59.0
<b>Any other</b>		
CAD	5	5.0

Thyroid	5	5.0
CKD	1	1.0
MI	1	1.0
Nil	88	88.0
<b>Initial symptoms started in the eye</b>		
<6 months	54	54.0
7 – 12 months	21	21.0
>1 year	25	25.0
<b>Time taken to decide for surgery from when it is advised</b>		
1 – 3 months	54	54.0
4 – 6 months	25	25.0
>6 months	21	21.0

The table 1 depicts that most of the patients 43(43%) were aged between 56 – 65 years, 67(67%) were female, 61(61%) were married, 95(95%) belonged to urban community, 57(57%) had primary school level of education, 50(50%) were unemployed, 64(64%) belonged to lower middle socioeconomic status, 68(68%) had not previously undergone cataract surgery, only (2)2% have glaucoma, 51(51%) had refractive error, 58(58%) had no diabetes,

59(59%) had no hypertension, 88(88%) had no other medical history, 54(54%) had symptoms started <6 months in the eye and 54(54%) had taken 1 – 3 months to decide for surgery from when it has been advised.

**Section B:** Assessment of the Quality of Life among patients with Cataract.

**Table 2:** Frequency and Percentage distribution of level of quality of life among patients with Cataract. N = 100

Quality of life	Good (≤50%)		Moderate (51 – 75%)		Low (>75%)	
	f	%	f	%	f	%
General functioning	87	87.0	13	13.0	0	0
Psychosocial impact	81	81.0	19	19.0	0	0
Visual symptoms	50	50.0	49	49.0	1	1.0
Overall	84	84.0	16	16.0	0	0

The table 2 shows that with respect to the domain general functioning, 87(87%) had good quality of life and 13(13%) had moderate quality of life.

With regard to psychosocial impact, 81(81%) had good quality of life and 19(19%) had moderate quality of life.

Regarding visual symptoms, 50(50%) had good quality of life, 49(49%) had moderate quality of life and 1(1%) had poor quality of life.

The overall quality of life revealed that 84(84%) had good quality of life and 16(16%) had moderate quality of life.

surgery among patients with Cataract.

**Table 3:** Frequency and Percentage distribution of level of barriers to undergo cataract surgery among patients with Cataract. N = 100

Barriers	f	%
Mild (≤50%)	100	100.0

The table 3 depicts that all 100(100%) had mild level of barrier to undergo cataract surgery among patients with cataract.

**Section C:** Assessment of Barriers to undergo Cataract

**Table 4:** Frequency and Percentage distribution of item wise barriers to undergo Cataract surgery among patients with Cataract. N=100

S. No.	Barriers	Yes		No		NA	
		f	%	f	%	f	%
<b>Attitude and Belief</b>							
1	Could manage to do daily routine work	10	10.0	90	90.0	-	-
2	Cataract was not matured	15	15.0	85	85.0	-	-
3	Could see clearly with the other eye	32	32.0	68	68.0	-	-
4	Being female	-	-	67	67.0	33	33.0
5	Fear of surgery	24	24.0	76	76.0	-	-
6	Old age	16	16.0	84	84.0	-	-
7	It was God’s will – Fate	-	-	100	100.0	-	-
8	Fear that surgery could lead to loss of eyesight	16	16.0	84	84.0	-	-
9	Fear that surgery will lead to other complications	25	25.0	75	75.0	-	-
10	Fear that surgery could lead to death	-	-	100	100.0	-	-
11	Felt that surgery was not necessary	17	17.0	83	83.0	-	-
<b>Financial and Logistics</b>							
12	Worry about cost of surgery	43	43.0	57	57.0	-	-
13	Insufficient family income	26	26.0	74	74.0	-	-
14	Lack of transport to hospital	2	2.0	98	98.0	-	-
15	Eye care services unavailable	3	3.0	97	97.0	-	-

Social and other commitments						
16	Busy with work	17	17.0	83	83.0	- -
17	Not knowing another person who had undergone cataract surgery	2	2.0	98	98.0	- -
18	Caregiver not available	26	26.0	74	74.0	- -
19	Distance to Hospital from home	2	2.0	98	98.0	- -
20	Unaware of treatment	3	3.0	97	97.0	- -
21	Lack of trust in health care service	3	3.0	97	97.0	- -

The table 4 shows the barriers to undergo cataract surgery which states that 10(10%) had managed to do daily routine work, 15(15%) had cataract not matured, 32(32%) were able to see clearly through the other eye, 24(24%) had the fear of surgery, 16(16%) were old age, 16(16%) feared that surgery could lead to loss of eyesight, 25(25%) feared that the surgery would lead to other complications, 17(17%) had felt that surgery was not necessary, 43(43%) had worried about the cost of surgery, 26(26%) had insufficient family income, 2(2%) had lack of transportation to the hospital, 3(3%) were non availability of eye care services, 17(17%) were busy with work, 2(2%) had the reason of not knowing another person who had undergone cataract surgery, 26(26%) had no caregivers to look after, 2(2%) had the hospital far away from their home, 3(3%) were unaware of treatment and had lack of trust in health care services respectively

**Table 5:** Assessment of Quality of life and barriers to undergo cataract surgery among patients with Cataract. N = 100

Variables	Quality of Life	Barriers
Minimum Score	41.0	0
Maximum Score	92.0	7.0
Mean	59.36	2.77
S.D	10.81	1.29

The table shows that the mean score of quality of life was 59.36±10.81 with minimum score of 41.0 and maximum score of 92.0.

The table also shows that the mean score of barriers was 2.77±1.29 with minimum score of 0 and maximum score of 7.0.

**Discussion**

**The first objective of the study was to assess the Quality of Life among patients with Cataract.**

Present study findings revealed that, frequency and percentage distribution of Quality of Life among patients with Cataract shows that with respect to the domain

- General functioning, 87(87%) had good quality of life.
- Psychosocial impact, 81(81%) had good quality of life.
- Visual symptoms, 50(50%) had good quality of life.
- The overall quality of life revealed that 84(84%) had good quality of life.

These findings are contradictory with Seema Butt Bandhu *et al.*, (2016) [1] in a study on impact of cataract on the Quality of Life of rural patients in India. Preoperatively and three months after cataract surgery, Indians were surveyed about their Quality of life. After cataract surgery, 90% patients expected to be economically productive. Thus, the quality of life was decreased across all the domains before surgery.

**The second objective of the study was to assess the Barriers to undergo Cataract surgery among patients**

**with Cataract.**

Present study findings revealed that, frequency and percentage distribution of Barriers to undergo Cataract surgery among patients with Cataract shows that, 15(15%) had cataract not matured, 32(32%) were able to see clearly through the other eye, 24(24%) had the fear of surgery, 16(16%) were old age, 16(16%) feared that surgery could lead to loss of eyesight, 25(25%) feared that the surgery would lead to other complications, 17(17%) had felt that surgery was not necessary, 43(43%) had worried about the cost of surgery, 26(26%) had insufficient family income, 17(17%) were busy with work, 26(26%) had no caregivers to look after, 2(2%) had the hospital far away from their home respectively. Overall it was concluded that all 100(100%) had mild level of barrier to undergo cataract surgery among patients with cataract.

This result is consistent - Bizuneh *et al.*, (2021) [5] on Barriers to Cataract Surgery Utilization among Cataract Patients Attending Surgical Outreach Sites in Ethiopia. The study results as most reported barriers were waiting until cataract becomes mature (18.7%), fear of surgery complications (16.7%), far from eye health institution (16.4%) and lack of income/cost for surgery (11.5%).

**The third objective of the study was to find association between Quality of Life and barriers with the selected demographic variables.**

Present study findings revealed that, glaucoma ( $\chi^2=10.714$ ,  $p=0.0001$ ) and time taken to decide for surgery from when it is advised ( $\chi^2=6.356$ ,  $p=0.044$ ) had shown statistically significant association with level of quality of life at  $p<0.001$  and  $p<0.05$  level respectively.

This result was supported by Rashmi Jain *et al.*, (2020) conducted a study on visual function and quality of life amongst patients with cataract attending Ophthalmology camps in a coastal districts in Southern India. Age, gender, and socioeconomic status had no statistically significant relationship with VF & QOL score. As the visual acuity deteriorates owing to cataract, the visual function and quality of life scores worsen.

It is also observed that the demographic variable occupation ( $\chi^2=10.361$ ,  $p=0.035$ ) had shown statistically significant association with mean score of barriers to undergo cataract surgery at  $p<0.05$  level.

These findings are consistent with a study by Bizuneh *et al.*, (2021) [5] on Barriers to Cataract surgery utilization among Cataract patients attending surgical outreach sites in Ethiopia for the association of Occupation with Barriers and contradictory for the association of Gender and age with the Barrier.

Hence, hypothesis (RH<sub>1</sub>) is partially accepted.

**Conclusion**

In the present study, the overall quality of life revealed that

84(84%) had good quality of life and 16(16%) had moderate quality of life. Thus, it is concluded that quality of life is good on the aspects of general functioning and psychosocial impact, whereas in visual symptoms it is decreased. In Barriers, the overall barrier seems to be mild ( $\leq 50\%$ ). Understanding Quality of Life and the reasons for delayed treatment will help Nurses to initiate intervention to promote utilization of eye care services.

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