

Awareness regarding Cataract among the middle adults aged patients attending ophthalmology OPD at Teaching Hospital, Birgunj, Madhesh Province, Nepal

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Abstract

Introduction: A cataract is the clouding of the eye's lens, causing blurred vision and is a leading cause of blindness worldwide. Health education helps prevent visual impairment, so assessing awareness is important. This study aims to evaluate cataract awareness among middle-aged adults..

Methods: A descriptive cross-sectional research design was adopted for this study. The study setting was initially chosen using convenience sampling, followed by purposive sampling to select 100 participants. Data were gathered through a structured interview using a researcher-developed questionnaire between 26/12/2024 and 17/03/2025. The collected data were analysed using descriptive statistical methods with IBM SPSS Statistics (version 16).

Result: The study found that 58% of the 100 participants demonstrated adequate awareness, while 42% had an inadequate level of awareness regarding cataracts. Specifically, regarding the respondents' ages with a range of 40 to 60 years. The overall distribution of awareness scores reflected a median score of 25 within a raw score range of 18 to 31. High recognition values were observed for specific symptoms and risk factors, such as 99% of respondents correctly identifying reduction of vision as a symptom and 86% recognizing increasing age as a primary risk factor

Conclusion: The study shows that over half of the participants have adequate awareness of cataracts, but a significant proportion (42%) still lack awareness among patients attending the ophthalmology OPD at National Medical College & Teaching Hospital, Nepal.

Keywords: Adult, Awareness, Blindness, Cataract, Visual Impairment

Introduction

The eye is the primary organ responsible for vision. It is a delicate and highly specialized sensory structure that is vulnerable to a wide range of disorders, many of which can result in reduced visual ability. Major causes of visual impairment are linked to aging, including cataract, glaucoma, refractive errors and macular degeneration.¹

A cataract refers to the cloudy vision caused by the

opacification of eye's lens. It is the one of the leading causes of visual impairment and avoidable blindness worldwide basically associated with older age. In other cases, cataracts may be present at birth, develop after eye trauma, or occur due to inflammation or systemic diseases such as diabetes, secondary causes of glaucoma. The condition may also arise from prolonged steroid use or exposure to certain types of radiation.²

Cataract symptoms are typically painless and include

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blurred vision, dim or dull perception of surroundings (similar to wearing dirty glasses), and scattering of light. Affected individuals often experience decreased contrast sensitivity, increased sensitivity to glare, reduced visual acuity, double vision, and changes in colour perception. As the lens ages, it absorbs more blue light, leading to a yellow-brown discoloration (brunescence) and reduced transmission of light.¹

If left untreated, cataract can progress to severe visual impairment or complete blindness. Cataract surgery is a highly effective and cost-efficient intervention that can successfully restore vision. Based on their cause, cataracts are broadly categorized into age-related, congenital, traumatic, secondary, and drug-induced types, with age-related cataract being the most common.³

Cataract has a profound impact on quality of life and remains a major public health concern in both developed and developing nations. World Health Organization (WHO) reported Globally, approximately 36 million people are blind, and more than 12 million of these cases are due to cataract, a figure projected to rise to 13.5 million by 2020. Notably, over 90% of disability-adjusted life years lost due to cataract occur in developing countries.⁴

Worldwide, at least 2.2 billion people suffer from near or distance vision impairment, and nearly half of these cases could have been prevented or remain untreated. Among these individuals, approximately 94 million are affected by cataract.²

Rapid Assessment of Avoidable Blindness (RAAB) survey (2021) conducted in Nepal also reported that cataract was the main causes of blindness in the country from fifty and above age groups. Cataracts were the leading cause, responsible for about 65% of cases, followed by corneal opacity (6.4%), glaucoma (5.8%), and age-related macular degeneration (5.3%). The total number of affected adults remains high around 60,000 people aged 50 and older due to population growth and aging. These findings highlight that, despite significant progress, cataracts remain the largest preventable cause of blindness, emphasizing the ongoing need for accessible eye care, surgical treatment, and preventive strategies.⁵ Between 2018 and 2021, Nepal carried out a nationwide RAAB survey to assess avoidable blindness among people aged 50 and above, found that 1.1% were blind in both eyes, while about 20.7% had some form of vision impairment. When applied to the whole population in Nepal, the estimated national blindness rate in 2021 was 0.28%, continuing a long-term decline. Women were slightly more affected than men (1.3% vs. 0.9%), and Lumbini Province had the highest prevalence at 1.8%.⁶

Numerous studies confirm that cataract remains a significant health issue in developing countries. While cataract is an inevitable part of the aging process,

insufficient awareness about the condition and its treatment continues to be a major barrier to reducing cataract-related blindness. Therefore, it is essential to assess the current level of awareness about cataract among the middle-aged population.

Methods

A descriptive cross-sectional study was designed to measure awareness of cataract among the middle-aged population (40 to 60 Years) in a community. The study was conducted at the Ophthalmic Out-Patient Department (OPD) in National Medical College & Teaching Hospital, Birgunj, Nepal. A 752 bedded Tertiary Hospital. The study population comprised all middle-aged patients suffering from cataract attending the eye OPD at NMCTH.

A convenience non-probability sampling technique was employed. The sample size was calculated using Cochran's formula, resulting in a minimum of 91 with 10 percent of allowable error ($10\%=0.1$), to ensure sufficient representation, rounded up to a final sample size of 100. Inclusive criteria of the study are those patients with cataracts, attending the eye OPD, and willing to participate, while those with known psychiatric or hearing disabilities were excluded.

Data was collected using a structured interview technique with a researcher-developed questionnaire. The tools had two parts: Part I covered socio-demographic information and Part II assessed awareness regarding cataract. The maximum awareness score was 36, with scores of ≥ 25 indicating adequate awareness and < 25 indicating inadequate awareness. The questionnaire was initially developed in English and then translated into the Bhojpuri language with expert opinion for comprehensibility. Instrument validity was maintained through literature review and expert consultation. A pre-test was conducted on 10% ($n=10$) of the sample size, which were subsequently excluded from the main data collection.

Ethical approval for the study was granted by the Institutional Review Committee of National Medical College & Teaching Hospital (Ref. F-NMC/704/080-081/). Written informed consent was secured from all participants after explaining the study's purpose and assuring privacy and confidentiality. Data collection took approximately 15-30 minutes per respondent. Data were checked for completeness, consistency, and accuracy before entry. The analysis was performed using SPSS VERSION 23, employing descriptive statistical methods such as frequency, percentage, mean, median, and standard deviation to analyze and interpret the findings based on the study objectives.

Result

This result presents the analysis and interpretation of data on cataract awareness among middle-aged patients visiting the ophthalmology outpatient department of National Medical College & Teaching Hospital. The data were analysed and interpreted based on research objectives and presented in different tables. Table 1 & 2 shows socio-demographic data and table 3 -9 shows awareness regarding cataract and table 10 shows the level of awareness regarding cataract.

Table 1: Respondents' Socio-demographic Characteristics
n=100

Characteristics	Frequency	Percentage
Age (in completed years)		
40-45	46	46.0
46-50	7	7.0
51-55	27	27.0
56-60	20	20.0
(Mean ± SD: 48.51±7.05) Range: 40-60 years		
Sex		
Female	52	52.0
Male	48	48.0
Religion		
Hinduism	97	97.0
Islam	2	2.0
Buddhism	1	1.0
Ethnicity		
Brahmin/Chhetri	68	68.0
Janjati	23	23.0
Dalit	7	7.0
Muslim	2	2.0
Education		
No education	26	26.0
Primary	17	17.0
Some secondary	15	15.0
SLC and above	42	42.0
Occupation		
Agriculture	33	33.0
Business	28	28.0
House-maker	23	23.0
Labour	16	16.0
Economic status		
Sufficient(up to 6 months)	98	98.0
Insufficient(up to 6 months)	2	2.0

Table 1 shows that the respondents had a mean age of 48.56 years, with ages ranging from 40 to 60 years. Nearly half of the respondents (46%) were in the 40-45-year age group, followed by 27% in the 51-55-year age group. Similarly, more than half of the respondents (52%) were female and 48% were male. Regarding religion, almost all the respondents (97%) followed Hinduism followed by (2%) Islam and (1%) Buddhism respectively. Regarding ethnicity, the majority of the respondents (68%) were Brahmin/Chhetri followed by Janjati (23%). Similarly, educational

status of respondents, 6% had no education and 17% had Primary, 15% had higher secondary and 42% had SLC and above education. According to the occupation of the respondents, 33% of the respondents were farmers, 28% were business, 23% were house- makers and 16% were labor as their occupations. Regarding economic status, all most all the respondents' (98%) income was sufficient for six months.

Table 2: Respondents' History of Cataract
n=100

Variables	Frequency	Percentage
Family History of Cataract		
Yes	25	25.0
No	75	75.0
Personal History of Cataract		
Yes	34	34.0
No	66	66.0

Table 2 represents n=100 respondents established a clear distinction between the prevalence of family and personal cataract histories. A quarter (25%; n=25) of the cohort reported a family history of the condition, leaving the majority (75%; n=75) with no recorded family link. However, the prevalence of personal history was notably higher, affecting 34% (n=34) of the respondents, compared to the 66% (n=66) who had no personal diagnosis. This observed pattern indicates that the proportion of individuals with a personal history of cataract significantly exceeds those reporting a family history in this population

Table 3: Respondents' Awareness on Cataract
n=100

Variables	Frequency	Percentage
Meaning of Cataract		
Blindness	35	35.0
Infection of eye	22	22.0
Itching of eyes	26	26.0
The opacity of lens#	17	17.0
Cataract is		
Non- Communicable disease #	91	91.0
Communicable disease	9	9.0
The common age of cataract presentation		
After 40 years #	50	50.0
At any age	46	46.0
Before 40 years	4	4.0

#Correct response

Table 3 presents a quantitative summary of survey findings on public perception and knowledge of Cataract, structured by Variables, their response Frequency, and corresponding Percentage. It analyzes three distinct aspects: the Meaning of Cataract, where “the opacity of lens” is the most frequent correct answer (35.0%); whether Cataract is a Communicable or Non-Communicable

disease, with a strong majority correctly identifying it as Non-Communicable disease (91.0%); and the common age of cataract presentation, with most respondents suggesting After 40 years (50.0%). Overall, the data indicates a reasonable level of accurate public awareness, particularly regarding the disease's classification and common age of onset, while revealing some variation in the specific understanding of its pathophysiology.

Table 4: Respondents' Awareness on Risk factors of Cataract

n=100

Variables	Frequency	Percentage
Risk Factors*		
Increasing age	86	86.0
Diabetes	72	72.0
Hypertension	71	71.0
Direct trauma to the eyes	70	70.0
Dehydration	65	65.0
Excessive exposure to sunlight	60	60.0
Malnutrition	58	58.0
Smoking	51	51.0
Obesity	36	36.0
Genetics	28	28.0

*Multiple responses

This table summarizes the results 100 respondents reveals varied awareness regarding cataract risk factors. Increasing age is the most recognized risk factor, cited by 86% of respondents, followed closely by chronic conditions like diabetes 72 % and hypertension 71%, and Direct trauma to the eyes 70%. Over half the group also recognizes dehydration 65% and excessive exposure to sunlight 60%, while awareness is moderate for malnutrition 58% and smoking 51%. However, factors such as Obesity 36% and genetics 28% are the least recognized, highlighting a need for improved public health education on these specific risk areas.

Table 5: Respondents' Awareness regarding Symptoms of Cataract

n=100

Variables	Frequency	Percentage
Symptoms of Cataract		
Reduction of vision		
Yes #	99	99.0
No	1	1.0
Seeing haloes around light		
Yes #	86	86.0

No	14	14.0
Double vision in a single eye		
Yes #	64	64.0
No	36	36.0
Redness of eye		
Yes	63	63.0
No #	37	37.0
Increased tear production		
Yes	74	74.0
No #	26	26.0

#Correct response

This table summarizes the awareness of cataract Symptoms among 100 respondents, highlighting a high level of recognition for the most common sign. Virtually all respondents 99% correctly identified reduction of vision as a symptom of cataract, demonstrating near-universal awareness of this key feature. Other common symptoms also show significant recognition, with 86% of respondents aware of seeing haloes around light and 64% knowing about double vision in a single eye. Increased tear production is cited as a symptom by 74 % of the group, and redness of eye by 63%.

Table 6: Respondents' Awareness on Treatment and Complications of Cataract

n=100

Variables	Frequency	Percentage
A cataract is a treatable condition		
Yes#	98	98.0
No	2	2.0
Cataract is treated		
When it affects vision and daily life#	44	44.0
25	25.0	
When there is pain	23	23.0
When there is an eye infection	8	8.0
When eye camp arrives		
A cataract is treated by		
Surgery#	70	70.0
Medicine	30	30.0
Blindness caused by cataract is reversible		
Yes#	86	86.0
No	14	14.0
Cataract surgery is very painful		
Yes	51	51.0
No#	49	49.0
The worst effect of cataract is		
Blindness#	77	77.0
Reduction of vision	16	16.0
Cosmetic problem	4	4.0
No worst vision	3	3.0

#Correct response

Table no. 6 represents the respondents' awareness regarding treatment and complications of cataract. In regards to the treatment of cataract, the majority of the respondents' (98%) responded cataract as a treatable condition, and 44% responded as cataract is treated when

it affects vision and daily life. 70% responded to surgery as the treatment of cataract, 86% responded blindness caused by cataract as reversible, 49% responded cataract surgery is not very painful and 77% responded to blindness as the worst effect of cataract.

Table 7: Respondents' Awareness on Care after Cataract surgery

n=100

Variables	Frequency	Percentage
Home care after Cataract surgery		
Avoid rubbing and scratching of eyes	98	98.0
Taking a complete course of medicine	97	97.0
Wearing dark sunglasses	95	95.0
Use of eye shield	90	90.0
Do not participate in strenuous exercise	82	82.0
Do not submerge your head underwater	77	77.0

*multiple responses

Table 7 indicate a very high level of public knowledge regarding necessary postoperative home care. The most widely known instructions are to avoid rubbing and scratching of eyes 98% and taking a complete course of medicine 97%. Almost all respondents are also aware of the need for wearing dark sunglasses 95% and using an eye shield 90%. Awareness remains high for restrictions on physical activity, with 82.0% knowing to avoid strenuous exercise. The least recognized, yet still widely known, instruction is to not submerge the head underwater 77%. Overall, the findings suggest that essential post-operative care instructions for cataract surgery are effectively communicated and well-understood by the majority of the population surveyed.

Table 8: Respondents' Awareness on Prevention from Early onset of Cataract

n=100

Variables	Frequency	Percentage
Prevention from early-onset*		
Wear sunglasses	99	99.0
Healthy diet	97	97.0
Avoid prolonged sun exposure	97	97.0
Quit smoking	95	95.0
Regular eye examination	88	88.0

* Multiple response

Table no. 8 represents respondents' awareness regarding prevention from the early onset of cataract. In regards to awareness regarding prevention from the early onset of cataract, 99% responded wearing sunglasses, 97%

responded healthy diet and avoiding prolonged sun exposure prevents from the early onset of cataract.

Table 9: Respondents' Source of Information regarding cataract care

n= 100

Variables	Frequency	Percentage
Source of information		
Relatives/ Family	67	67.0
Friends/ peers	62	62.0
Mass media	22	22.0
Health workers	18	18.0

Table 9 represent the respondents' source of information regarding cataract, among all respondents, the majority of the respondent (67%) got information about cataract from relatives/ family, 62% from friends/ peers, 22% from mass media, and 18% from health workers respectively.

Table 10: Level of Awareness regarding Cataract

n=100

Level of Awareness	Frequency	Percentage	Median	Range
Adequate awareness	58	58.0	25	18-31
Inadequate awareness	42	42.0		

The results in Table 10, assessing the overall level of awareness regarding Cataract among the 100 respondents, indicate that the majority possesses adequate knowledge. Specifically, 58 individuals, or 58%, were found to have adequate awareness, while 42 individuals (42%) fell into the inadequate awareness category. The overall distribution of knowledge has a median score of 25 (presumably out of a maximum score not explicitly stated), and the raw scores ranged from 18 to 31. This suggests that while a majority of the sample is reasonably informed about cataracts, a significant proportion (over two-fifths) still lacks sufficient knowledge.

Discussion

Regarding the meaning of Cataract, 17% said it's an opacity of the lens. The findings of the study done in Nepal revealed that 7.5% had defined cataract as the opacity of the lens which is contradictory to the findings of this study due to the difference in sample size, population setting and time duration taken for the study.⁷ The findings of the study done in Saudi Arabia revealed that 27.6% of the respondents defined cataract as the opacity of the lens.⁸

In this study, increasing age is identified as the risk factor for cataract (86%) followed by diabetes (72%) and hypertension (71%). The findings of the study done in

Lahore, Pakistan revealed the risk factor of cataract as increasing age (83.5%).⁹

In this study regarding symptoms of cataract, 99% responded with a reduction of vision as a symptom of cataract. The findings of the study done in Southern Ethiopia revealed a reduction of vision as a symptom of cataract 70.3% which is contradictory to the findings of this present study due to difference in population setting and sample size.¹⁰

In regards to the treatment of cataract, 70% responded surgery is the treatment of cataract, and 86% responded blindness caused by cataract is reversible. A similar study conducted in Lahore, Pakistan revealed Cataract is treated by surgery (85.6%) and 79.3% revealed blindness caused by Cataract is reversible.⁹ The findings of the study done in northern Ethiopia revealed that 59.1% said blindness caused by cataract is reversible.¹¹ In this study, 44% of the respondents responded as cataract is treated when it affects vision and daily life. The findings of the study done in Saudi Arabia revealed that 34.1% responded as cataract is treated when it affects vision and daily life.⁸

Regarding the respondents' source of information regarding cataract, among all the respondents, the majority of the respondent (67%) got information about cataract from relatives/ family, 62% from friends/ peers, 22% from mass media, and 18% from health workers respectively.

In this study, out of 100 respondents, more than half of the respondents (58%) had an adequate level of awareness and 42% had an inadequate level of awareness regarding cataract among middle-aged adults. This finding is similar to the study done in Arba Minch Zuria Woreda, Southern Ethiopia which showed the level of awareness as 54.9%.¹⁰ The findings of the study done in Lahore, Pakistan revealed the level of awareness as 75.2%. This finding is contradictory to the findings of the present study due to the difference in the setting of the study.⁹ Similarly, the findings of the study carried out in the Hilly regions of Nepal revealed the level of awareness as 74.6% which is contradictory to the findings of the present study because of the difference in sample size, area coverage, and time duration taken for the present study.⁷

In this study, 91% of respondents correctly identified cataract as a non-communicable disease. A similar study in India reported 88% awareness, showing comparable findings, possibly due to increasing eye-health education programs.¹² Similarly, 98% of respondents knew that cataract is treatable. A study in Nigeria also reported high awareness (93%) that cataract can be treated surgically.¹³ Family members and relatives were the main source of information (67%) in the present study. A similar study in Bangladesh reported 64%, highlighting the important

role of informal social networks in health information sharing.¹⁴

Conclusion

This study shows that awareness of cataract among middle-aged adults was moderate overall. Most respondents were between 40 and 55 years of age, with slightly more females than males. A higher proportion had sufficient economic status and basic education, which may have influenced awareness levels. While only a few reported a family history of cataract, more than one-third had a personal history of the condition. Many participants correctly identified cataract as a non-communicable disease occurring mainly after 40 years of age. Increasing age, diabetes, hypertension, and eye trauma were widely recognized as risk factors. Reduced vision and seeing haloes around light were the most commonly known symptoms.

Most respondents were aware that cataract is treatable and that surgery is the main treatment option. Knowledge about post-operative care and preventive measures was very high. However, most information was obtained from family and friends rather than health workers. Overall, 58% had adequate awareness, while 42% still lacked sufficient knowledge. This highlights the need for stronger health education and community-based awareness programs.

Limitations of the study

This study was conducted only at National Medical College and Teaching Hospital, which limits the ability to generalize the findings to other hospitals or broader populations

Implications of the study

This finding of the study might provide a source of reference for further researcher.

The study might be helpful to the health personnel to plan different health program about awareness regarding cataract.

Recommendations

A similar study can be conducted on a large sample by using randomized sampling technique, so that findings can be generalized.

Information books and manual can also be prepared and distributed in the community about prevention from cataract.

A study can be carried out to measure association between demographic variables with awareness among middle aged population.

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