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Perceived barriers to cataract surgery among individuals aged 50 and older in Nepal: A population-based cross-sectional survey

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Background

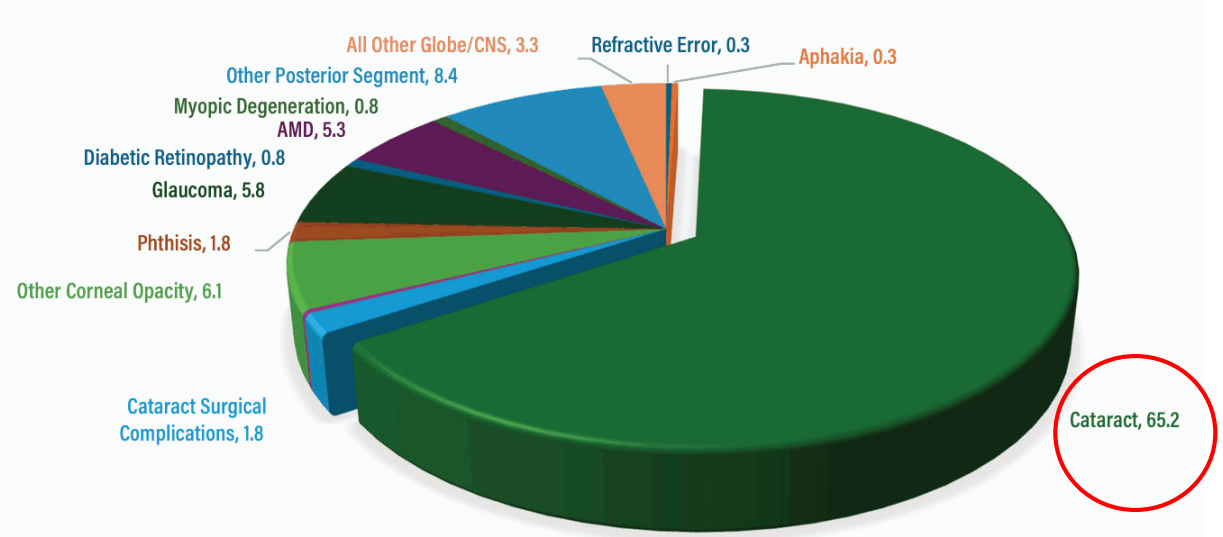
- Nepal blindness survey 1981.

- Survey had revealed that,
  - 0.84% people were bilaterally blind
  - 80% of the blindness were avoidable
  - Cataract and Trachoma main cause of blindness and VI
  - Blindness was more in female and rural setting.

- Nepal become the first country in SEA to eliminate trachoma as public health problem in 2018.

- Bilateral blindness was reduced to 0.34% (RAAB Survey 2012) and was further reduced to 0.28% (RAAB survey 2021).

- Cataract (65.2%) was still leading cause of blindness followed by corneal opacity, glaucoma, ARMD, DR and retinal diseases.



- Cataract surgery is the most cost-effective public health initiative to address avoidable blindness.

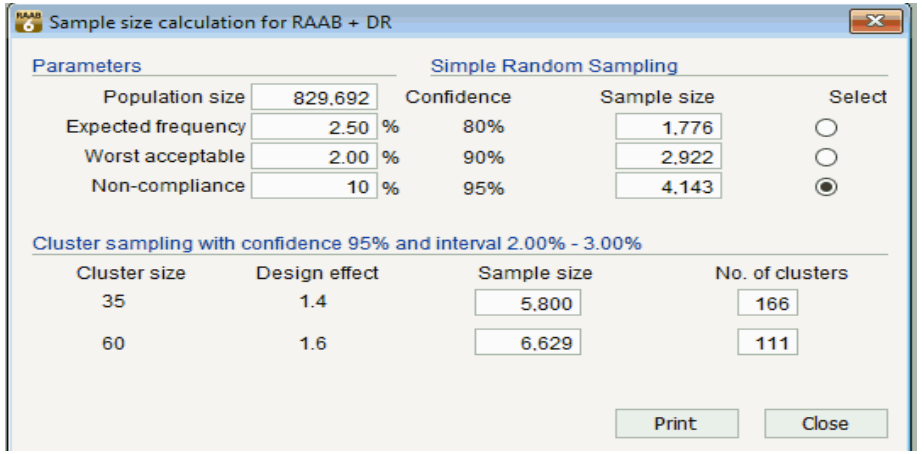
- Studies in Nepal have also identified 'high cost' 'fear of surgery' 'distance' and 'lack of awareness' as prominent barriers to cataract surgery, leading to low uptake of surgical service.

Objective

As part of RAAB survey 2021, present study aimed,

- To identify the key barriers to cataract surgery among individuals aged 50 and older with severe visual impairment and blind due to cataract in Nepal.

Methods



Survey design and sampling technique:

A population-based quantitative cross-sectional RAAB survey using, multistage cluster random sampling, was conducted across all provinces of Nepal between 2019 and 2021.

Sample size:

The sample size (n=33,414 from 956 cluster) was calculated using the RAAB7 software with parameters of 95% CI, 20% allowable error, 10% non-response rate and 1.4 design effect where the cluster size was 35.

Survey population:

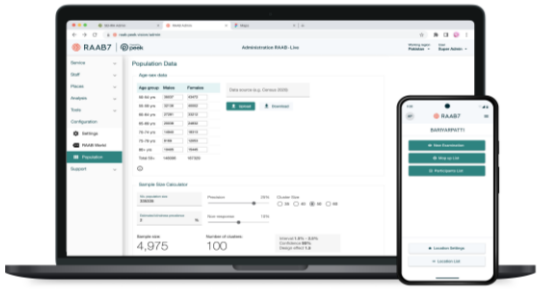
- Individuals aged 50 years or older residing in the same cluster for at least six months were enrolled in the survey.

Ophthalmic evaluation:

- Visual acuity assessments, anterior segment exams, and fundus evaluations were performed using standardized protocols of RAAB survey at HH doorstep by the trained team led by an ophthalmologist.
- All the bilateral blind due to cataract (BCVA <3/60) and severe visual impairment (BCVA <6/60) in better eye were further interviewed using a pretested questionnaire with seven known barriers.

Data management and statistical analysis:

- Barrier-related survey data were captured through a digitized structured questionnaire using tablets equipped with the mRAAB7 mobile application.
- The collected data were synced to cloud server and imported into the RAAB7 software for analysis.



Ethical considerations:

- Written informed consent was obtained prior to data collection and ocular examination.
- Approval from Department of Health Services and the Nepal Health Research Council was taken and adhered to the principles outlined in the Declaration of Helsinki.
- Additionally, appropriate remedial actions were taken to address any eye health-related issues identified during survey.

(n=718)

Results

Demographic profile of participants

- Total participants enrolled: 33,228
- Total examined: 32,565
- Bilateral blind due to cataracts/SVI: 718

Nearly two-thirds of participants, 447 (62.3%), were female

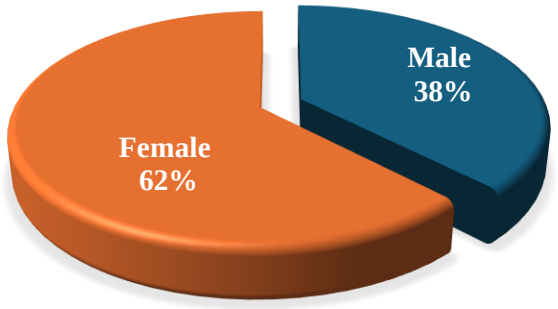


Fig 1: Gender of participants

About 40% (297, 41.4%) of participants were in 50-59 age group

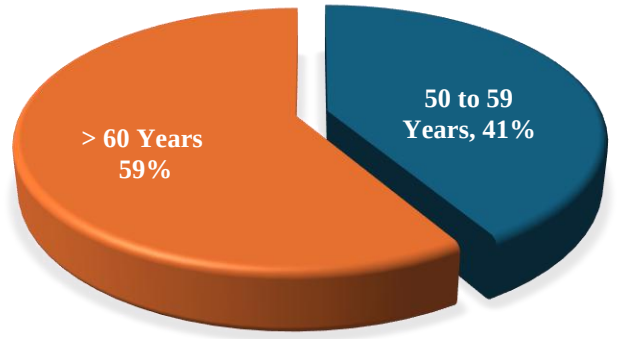


Fig 2: Age group of participants

Lumbini accounted for one-third (234, 32.6%) of the survey participants, while Madhesh accounted for one-fourth (169, 23.5%), both province were from the densely populated plains region.

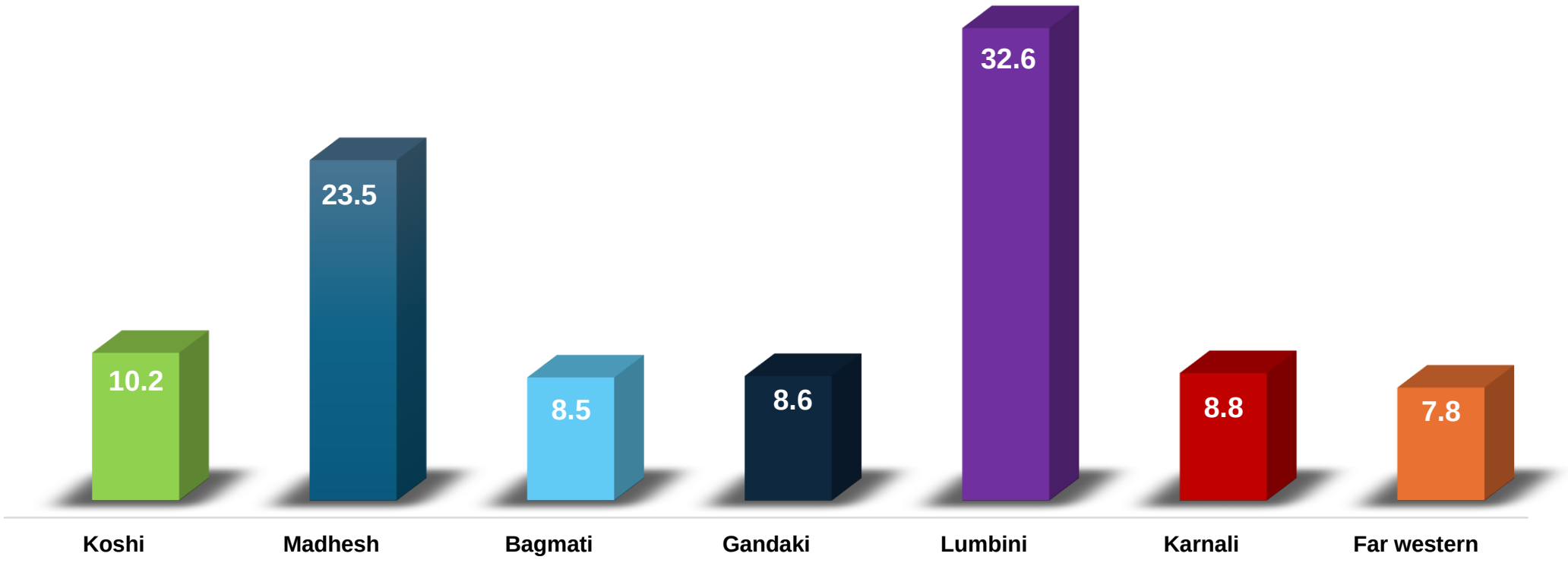


Fig 3: Province wise distribution (%)

Prominent barriers to cataract surgery in Nepal (National) (n=718)

Among the study population, the major barriers perceived were, "need not felt" (237; 33%), “cost of surgery” (218; 30%), “lack of access” (93; 13%), “fear of surgery” (88; 12%) and “lack of accompany” (40; 6%) etc.

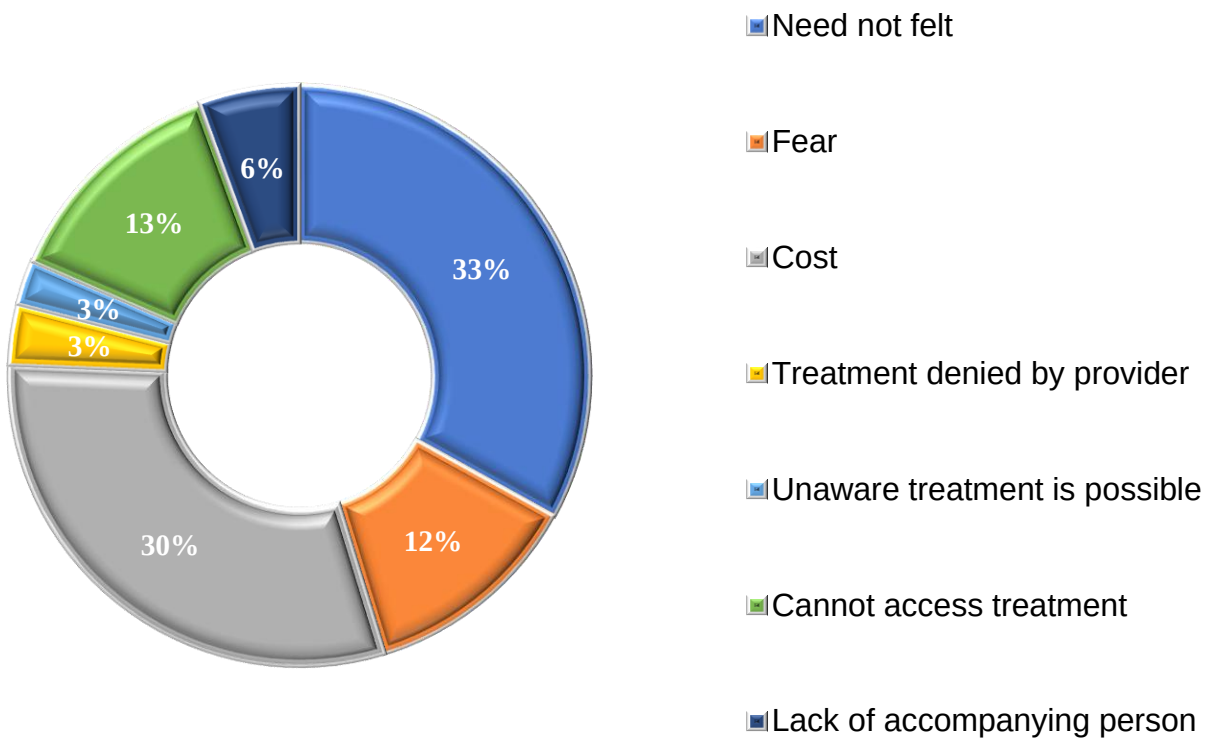


Fig 4: Prominent barriers of cataract surgery in Nepal

Gender wise perceived barriers to cataract surgery in Nepal (n=718)

‘Cost of surgery’ and ‘felt no need’ were the major barrier equally in both the gender.

The third most cited barrier was ‘limited access to treatment’, followed by ‘fear of cataract surgery’

Table 1: Gender wise barriers to cataract surgery in Nepal

Barriers/Gender	Male		Female		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Felt no need	92	33.9	145	32.4	237	33.0
Fear	28	10.3	60	13.4	88	12.1
Cost	87	32.1	131	29.3	218	30.4
Treatment Denied	6	2.2	18	4.0	24	3.3
Unaware of treatment possible	9	3.3	9	2.0	18	2.5
Cannot access treatment	36	13.3	57	12.8	93	13.0
Local reasons (Lack of accompany)	13	4.8	27	6.0	40	5.6
Total	271	100	447	100	718	100

Province wise perceived barriers to cataract surgery in Nepal (n=718)

- ‘Cost’ was a perceived barrier in all provinces except Gandaki, where ‘no felt need’ was the primary concern. Nearly half of participants in Madhesh and Lumbini ‘felt no need’ for the surgery.
- In Madhesh and Bagmati, one in four participants ‘feared of surgery’.
- In Karnali, ‘limited access to surgery’ and ‘cost’ were the most significant barriers.

Table 2: Province wise perceived barriers to cataract surgery in Nepal

Barriers/Province	Koshi	Madhesh	Bagmati	Gandaki	Lumbini	Karnali	Far Western	Total
No need felt	16 (21.9%)	84 (49.7%)	10 (16.4%)	17 (27.4%)	96 (41.0%)	4 (6.3%)	10 (17.9%)	237 (33.0%)
Fear	7 (9.6%)	41 (24.3%)	17 (27.9%)	5 (8.1%)	6 (2.6%)	1 (1.6%)	11 (19.6%)	88 (12.1%)
Cost	21 (28.8%)	37 (21.9%)	13 (21.3%)	9 (14.5%)	84 (35.9%)	25 (39.7%)	29 (51.8%)	218 (30.4%)
Treatment denied	2 (2.7%)	7 (4.1%)	5 (8.2%)	7 (11.3%)	0 (0.0%)	2 (3.2%)	1 (1.8%)	24 (3.3%)
Unaware of treatment possible	3 (4.1%)	0 (0.0%)	4 (6.6%)	5 (8.1%)	2 (0.9%)	1 (1.6%)	3 (5.4%)	18 (2.5%)
Cannot access treatment	7 (9.6%)	0 (0.0%)	6 (9.8%)	8 (12.9%)	46 (19.7%)	24 (38.1%)	2 (3.6%)	93 (13.0%)
Local reasons (Lack of accompany person)	17 (23.3%)	0 (0.0%)	6 (9.8%)	11 (17.7%)	0 (0.0%)	6 (9.5%)	0 (0.0%)	40 (5.6%)
Total	73 (100%)	169 (100%)	61 (100%)	62 (100%)	234 (100%)	63 (100%)	56 (100%)	718 (100%)

Barriers to cataract surgeries in Nepal from different studies.

Multiple studies done in Nepal and around have yielded the similar key barriers to cataract surgery uptake.

Table 3: Barriers to cataract surgeries in Nepal in different studies

Authors	Year	Population	Main barriers
Snellingen[7]	1998	decliners of cataract surgery	Cost (48%), logistic (45%), fear (33%)
Sneg S[8]	2021	Morang and Sunsari districts of Nepal	High cost, lack of awareness, female gender
Gurang R[9]	2007	Cataract blind women in screening camp	Low visual needs in urban and Lack of access in rural participants
Ansari[10]	2022	Govt hospital, Koshi	High cost, lack of awareness, long distances
Karn R[11]	2020	Non-acceptors in Eastern Nepal	Nobody to accompany, systemic illness, busy, high cost
Yuddha[12]	2010	Unoperated cataract blind at Gaur Eye Hospital	Decisional role and lack of awareness
Pradhan S[6]	2017	RAAB study in n Narayani Zone	Plains: no need, high cost ,Hills: high cost, fear of surgery
Das T[13]	2018	Southeast Asia region	Lack of accessibility, high cost

3 GOOD HEALTH AND WELL-BEING

Eye health is key to ensuring good health, mental health and wellbeing.

11 SUSTAINABLE CITIES AND COMMUNITIES

Eye health is critical to reducing road traffic deaths and injuries

2 ZERO HUNGER

Improved eye health can increase household income which in turn reduces hunger

Poor eye health increases
the risk of mortality
up to 2.6 times

Unoperated cataract can increase the chance of a motor vehicle accident by
2.5 times

Free high quality cataract surgery can increase household income:
46% of household incomes moved up an income bracket

IAPB forecast

Key Takeaways

- **Addressing Key Barriers** is very important to improve cataract surgical coverage.
- **Implement Provincial Strategies** to overcome regional challenges.
- **Provide Financial Support** through health insurance, local government subsidies, and cross-subsidy models.
- **Raise Eye Health Awareness** to reduce fear and highlight service availability & importance of good vision.
- **Conduct Further Research** to understand why people are reluctant to cataract surgery despite its affordability and safety.

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Dedicated to

Prof. Dr. Ram Prasad Pokhrel

Father of Eye Health Services in Nepal

Half the world will be Short Sighted by 2050- WHO

THANK YOU

Mr. Ranjan Shah

Program Manager at Nepal Netra Jyoti Sangh since 2016

Managing multiple eye health project in Nepal

Also, member of IRC NNJS

Focal person for the National Level Population based Survey like RAAB and RARE etc.