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# Impact Assessment of Tata Capital's “Akhand Jyoti Eye Hospital Intervention, in Bihar”

An Executive Summary

28th March, 2024



# Akhand Jyoti Eye Hospital focuses on restoring the vision of patients blinded by cataracts through surgeries, aiming to restore dignity, instil hope, and enhance livelihood for individuals



**Mission:** To spearhead in Bihar, the elimination of curable blindness by 2026.



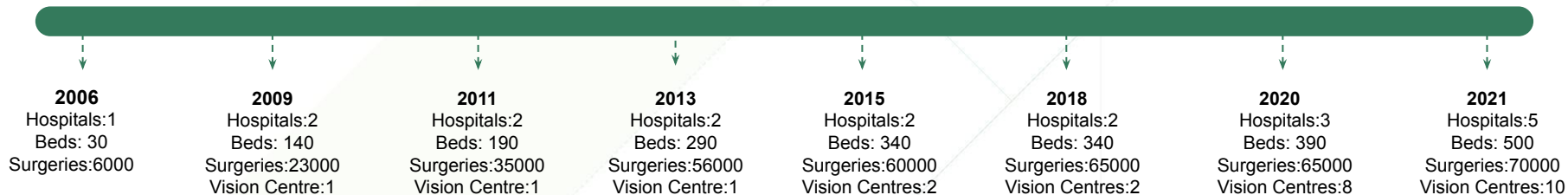
**Vision:** To help eliminate curable blindness by providing in low income regions of India, affordable, accessible, sustainable, quality and curative preventive eye care services, and empower women to achieve this.



## Blindness Elimination Programme - 'Swasth Drishti Abhiyan'

- Akhand Jyoti Eye Hospital works towards eliminating curable blindness by providing free cataract surgeries to economically disadvantaged visually impaired patients residing in rural areas of Bihar and Eastern Uttar Pradesh.
- Akhand Jyoti's team conducts eye camps in rural areas to identify blind patients. They go door-to-door in villages to raise awareness, transport the identified patients to Akhand Jyoti hospitals, provide cataract surgery, and arrange for their transportation back to their respective places after the surgery.
- 80% of sight-restoring surgeries that Akhand jyoti does are completely free for the poor.
- The purpose of the programme is to provide equal opportunity, alleviate poverty and enhance social capital in low-income geographies.

## Milestones



# The program follows a unique outreach model and ensures last-mile accessibility of quality eye care services for underserved communities

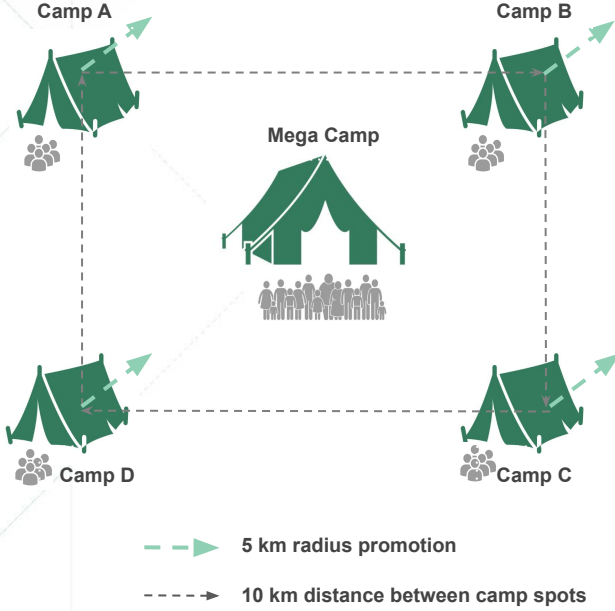
The Akhand Jyoti team organizes on-ground awareness drives on eye care and screening camps across gram panchayats and villages with an objective of covering far-to-reach communities. In a few instances, these screening camps are organized based on invitations by the panchayat or community leaders, but in most cases, the awareness drive for eye-screening camps is conducted in blocks where they have not established a presence yet.

## For organizing Screening Camps, Akhand Jyoti follows a “10-ka-Dabba” approach

Three to four days before the screening camps, the on-ground team distributes informational pamphlets, conducts auto-miking campaigns, and includes home visits as part of the awareness drive.

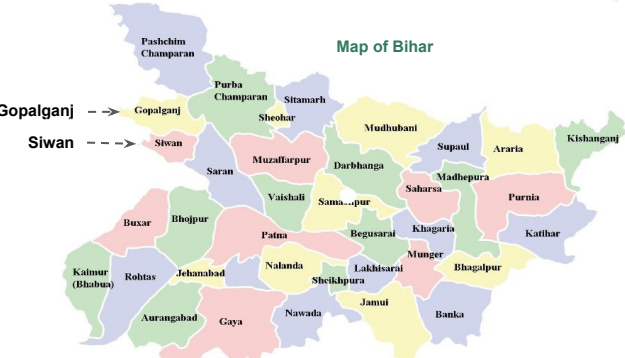
- After the awareness drive, Screening **Camp A** is organized at a village level. Community members are expected to reach the camps on their own. The Akhand Jyoti team extends transportation assistance on a case-to-case basis.
- After Screening Camp A, the Akhand Jyoti team moves **10 km east** to organize **Camp B**, after 10 days **Camp C** is organized, and finally **Camp D**, therefore, forming a Quadrant.
- Each camp is organized for a day within a village. In few cases, the maximum distance between the camp and nearby villages is between 2-3 kms.
- During peak seasons, the camp sees a footfall of 100 participants, while during lean seasons, it is around 60. Each camp is organized at a gap of 10 days.

- Patients from Camp A, after undergoing cataract surgery in the hospital, are invited to Camp B for post-surgery follow-ups.
- This process continues with patients from Camp B moving to Camp C and patients from Camp C proceeding to Camp D for post surgery follow-ups.
- The patients must attend two required follow-up appointments after surgery, the first, scheduled between 7-10 days that aims to assess potential eye complications; and the second follow up is after 30 days to assess their eye-refraction.
- **These patients coming for their follow-ups, serve as brand ambassadors**, motivating others by sharing their experiences with those undergoing initial eye screenings, thereby significantly influencing surgery acceptance rates.

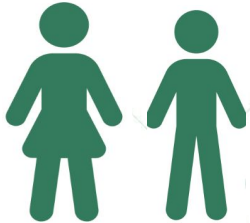


Following the conclusion of the four camps, a one-day Mega Camp is organized 7-10 days later at a location, nearly equidistant to the four camps. 150-200 community members are expected to participate in the Mega Camp. The objective is to reach community members within a 25-40 km radius who might have missed any of the initial camps.

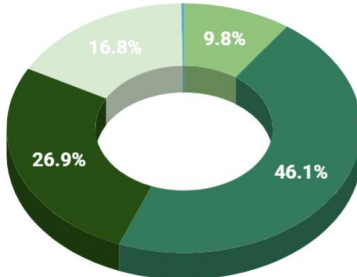
# Sattva Consulting conducted an impact assessment study of the program with a sample of the population that benefited from the services provided by Akhand Jyoti



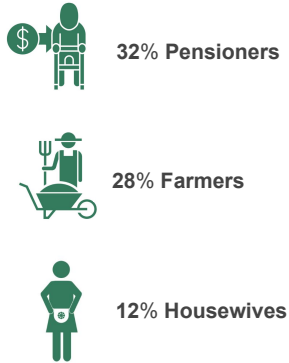
93.5%<sup>9</sup> population of **Gopalganj** district and 94.5%<sup>10</sup> population of **Siwan** district live in **rural areas** or villages



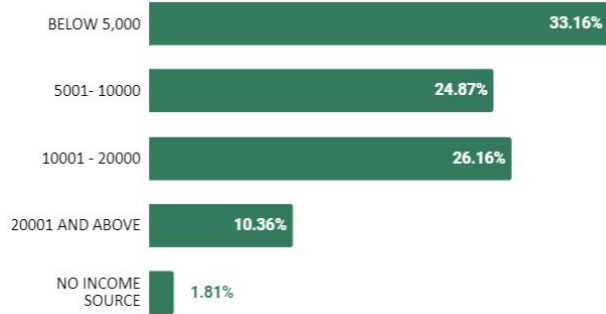
Out of the total respondents, **52%** are **Females** and **48%** are **Males**, with a **median age of 65**



**70%** of respondents have **No Formal Education**

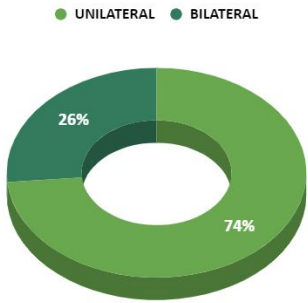


**Occupation of respondents (n=386)**



While, 3.62 % of the respondents stated that they did not know their monthly household income, **58%** of respondents lived in **households (HHs) with monthly incomes less than INR 10,000**, before the surgery. The provision of free surgery is helping prevent catastrophic health expenditures.

**Type of Cataract (n=386)**



Patients with bilateral cataract have a lower quality of life and worse mental health than those with unilateral cataract.<sup>13</sup>

The **Economic Survey 2021-22**<sup>11</sup>, and the **Ministry of Agriculture and Farmers Welfare**<sup>12</sup> stated as on March 2023, that the average monthly income per agricultural household in the country stood at **INR 10,218 in 2019** as against INR 6,426 in 2014.

## Incentives, such as free transportation, hospital accommodation, and meals, along with a shorter wait time for surgery, have encouraged beneficiaries to seek complete treatment post-diagnosis

The surveyed villages in Gopalganj and Siwan are about 100-120 km from Akhand Jyoti Eye Hospital in Mastichak. Although district hospitals are on average 35-40 km away from these villages, community members prefer undergoing surgeries at the Akhand Jyoti Hospital. This preference is attributed to:

- **Free transportation:** Akhand Jyoti team's provision of free transportation to and from the hospital.
- **Shorter waiting time for surgeries:** Less than 10 days at Akhand Jyoti Hospital compared to considerably longer waiting periods (1-2 months) in government hospitals.
- **Medical personnel:** The availability of a higher number of experienced ophthalmologists at Akhand Jyoti Eye Hospital.

Our qualitative insights shed light on respondents' experiences during their visit to the hospital for eye surgery. It was observed that they were provided a free overnight stay before the operation and they received regular meals during their stay, including porridge, khichdi, bread, chapati, biscuits, and tea.



**94%** of the respondents used the bus services provided by Akhand Jyoti to travel to the hospital



**99%** reported that they were provided overnight stay at the hospital



**98%** reported that they received regular meals at the hospital



**96%** reported that they were provided medicines at the hospital during their stay

Respondents reported an average waiting time of **one week for cataract surgeries** after diagnosis, with **99%** being satisfied to very satisfied with the promptness of the surgery scheduling post-diagnosis.

*"They looked into my eye through a torch instead of any machine and they told me that there is cataract in your left eye and you need to undergo surgery. Later they gave me an appointment to undergo surgery after 6 days." - Male Beneficiary, 60 years old.*

### Respondents' feedback highlights



**98%** were satisfied to very satisfied with the results of the surgery



**98%** were satisfied to very satisfied with the effectiveness of the medicines



**99%** were satisfied to very satisfied with the comfort of stay and quality of meals



**99%** were satisfied to very satisfied with the care provided by the hospital staff

From the qualitative insights, it was observed that the respondents were very happy with the result of the surgery. They mentioned feeling pleased as they could now see everything clearly.

**Sattva team's observation:** It was observed that a few patients paid between INR 300 and INR 600 to the bus driver to take them to the base hospital in Mastichak for free eye surgery. We later found out that these patients were transported to the hospital for surgery by buses that were not operated by Akhand Jyoti but arranged locally by influential individuals who also organise a few screening camps in specific areas. While the bus services provided by Akhand Jyoti are free of cost for the patients, the bus fare for those arranged by local influential people is divided among the patients and they pay the transporter. Since the community assumes services such as eyecamp and surgery is being provided by Akhand Jyoti, clear communication from the team and support from their transporters to reach the patients will help address such grievances raised.

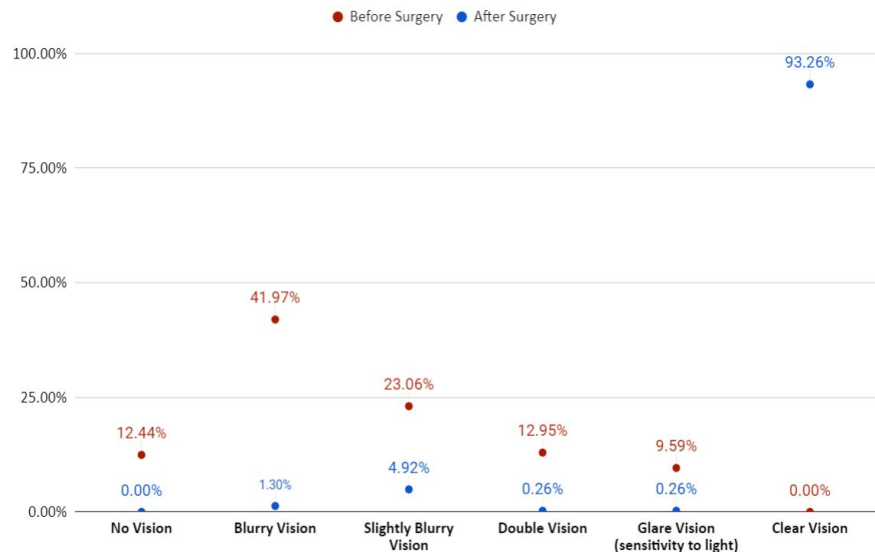
*"I was discharged and when I went home and opened my blindfold, I could see everything very clearly and I was very happy about this. For this I thank Akhand Jyoti again and again." - Male Beneficiary, 55 years old.*



# The surgeries recorded a high success rate, with 93% of patients who reported having 'blurry, double, glare or no vision' achieving 'clear vision'

Cataract surgery is associated with significant improvements in cognitive functions<sup>18</sup>, vision-related quality of life<sup>19</sup> and a reduction in depressive symptoms. Given that a significant proportion of Akhand Jyoti beneficiaries are aged 65 and above, there exists an elevated susceptibility to functional decline. This risk is attributed to factors such as absence of a robust support system, or instances of neglect.

Vision before and after surgery (n=386)



The surgeries performed were highly successful as **93%** of the respondents reported **clear vision** following surgery.

*"My lifestyle has improved a lot after eye surgery. It has been 3 months since my surgery and even after 3 months there is no problem in my eye, there is no watering nor any stinging in the eyes and it looks absolutely clear and that is why I am very happy."* - **Female Beneficiary, 60 years old.**



**92%** of the respondents reported facing no complications after the surgery.



However, among the remaining **8%** (32 respondents) who reported facing complications, 78% complained of watery eyes, 9% complained of a burning sensation, another 9% complained of redness in the eye, citing an infection, and one respondent mentioned that he had clear vision post-surgery, but now his vision has become blurry.



Of the 32 respondents, **25 reported having clear vision following recovery from complications**, while 4 experienced slightly blurry vision, 2 had blurry vision, and 1 reported a combination of slight blurriness and glare.



Additionally, **1%** (4 respondents) between the age of 40-79 reported an issue of cataract recurrence. All four had their eyes operated on in the past six months, and they haven't undergone another surgery or received treatment yet.

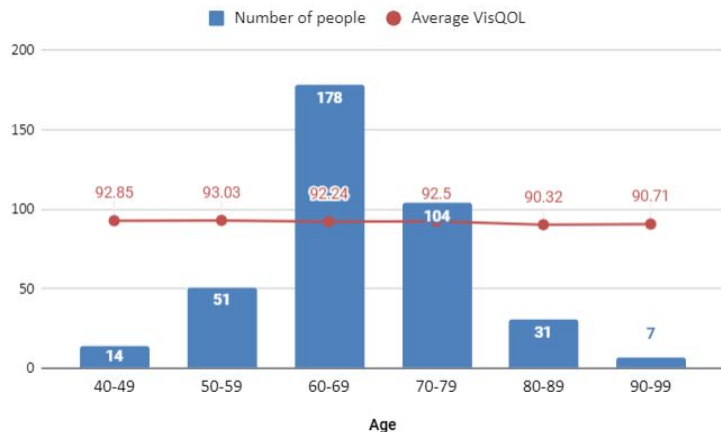
Following surgery, a total of **7%** (26 respondents) reported experiencing unclear vision. This group comprises both individuals who encountered complications after surgery and did recover from them, as well as those who did not have any complications.



According to National Blindness & Visual Impairment Survey by the National Programme for Control of Blindness & Visual Impairment (NPCB&VI), the overall rate of complications associated with cataract surgery for population aged ≥ 50 years in India is 7.2%.<sup>16</sup> It is important to note, few of these symptoms are common after cataract surgery and it takes around four to six weeks to fully heal.<sup>17</sup>

# Over 94% of the patients experienced an improved quality of life and were able to function independently, thereby leading a life with dignity within the community

Vision Quality of Life (VisQOL) a multi-attribute instrument designed to assess the impact of visual impairment on various aspects, including the risk of injury, coping mechanisms, social relationships and organizing assistance.<sup>21</sup> The objective is to understand individuals' abilities to lead productive and fulfilling lives in their social context, supported by fulfillment of roles, and engagement in daily activities. **Higher overall combined scores indicate greater impact and better quality of life.**



Only one respondent was in the age category, "below 40 years". Overall respondents scored '92' on the AQoL-7D (Vision)<sup>20</sup> questionnaire on quality of life after the Cataract Surgery. The correction of vision led to an enhanced quality of life, and helped the aged population to lead a life of dignity and independence.

From the qualitative insights it can be observed that, respondents have experienced numerous positive lifestyle changes following the surgery, such as - feeling confident in performing their daily activities and interacting with other members of the community.

Following surgery, respondents share the transformations in their quality of life (n=386). They expressed -



98%

Post surgery vision has no effect on their ability/does not make it difficult at all to cope up with the **demands of their life**



96%

Post surgery vision allows them to **organize any assistance** they may need without any difficulty



94%

Post surgery vision makes having **friendships** easier for them



97%

Post surgery vision has no effect on their ability/ does not make it difficult to fulfill the **roles** they would like to fulfill in life (e.g.family roles, work roles, community roles)



93%

Post surgery vision has **improved their confidence** to join in everyday activities



88%

It is most **unlikely** they will **injure** themselves because of their post surgery vision

*"After the surgery, my lifestyle has undergone significant positive changes. I can now work in the fields and I will be able to cover my household expenses with the grains produced. Moreover, after the surgery, I have gained a lot of confidence to handle my tasks independently." - Male Beneficiary, 70 years old.*

# The ability to perform daily tasks independently has significantly reduced the burden on primary caregivers in the family and 95% of the caregivers have now returned to their regular routine



HelpAge India conducted a research study and published a National Report in 2019<sup>22</sup>, stating that daughter-in-laws and daughters spend the most time as caregivers for the elderly in households across India. The study further stated that the majority of these caregivers feel angry, embarrassed, and a sense of strain when they are with the elderly for whom they are caring. This sense of helplessness significantly contributes to instances of neglect and potential abuse towards the elderly.

## Before Surgery

**46% (180) of the respondents stated that they had someone from the family looking after them and they relied on them for carrying out day-to-day activities before their surgery.** 67% of these caregivers were women, majority being the respondents' daughter-in-law.



### Impact on Caregiver's Employment

Out of 180 caregivers, 23 (13%) experienced an impact on their employment as they had to take care of their family member:

- 8% caregivers took excessive leave from their place of employment.
- 4% caregivers received pay cuts due to the frequent leaves they took from their work.
- 1% caregivers quit their work or stopped working.



### Impact on Caregiver's Education

Out of 180 caregivers, 21 (12%) had their education impacted as they had to take care of their family member:

- 10% of the caregivers had to take frequent leaves from school.
- 1% mentioned that they were unable to perform well in school and received low-grades.
- 1% stated, they had to drop out from their school.

## Post Surgery

**53% (206) of all respondents did not require a caregiver before the surgery.** After the surgery, **98% (201) of them reported not needing** any assistance or support, while the remaining **2% (5) respondents** stated that they would seldom require help to carry out day-to-day activities even after the surgery.

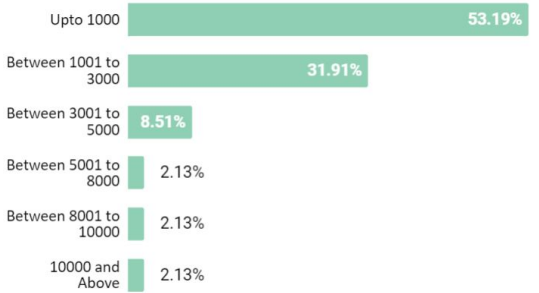
**95% (171) of all caregivers returned to their normal routine,** encompassing those who had either left work, were irregular at work and school, or had to drop out. Among those who returned to their normal routine, 86 (**50%**) caregivers were of respondents from the 60-69 age category and 44 (**26%**) caregivers were of respondents from the 70-79 age category. 5% (9) caregivers, decided to not return to their old routines and spend time with their family.

*"I used to bathe him and take him up the stairs to the bathroom, but after the operation everything is clearly visible to Grandfather, because I see him reading newspapers after the surgery and doing all the work himself. Now I just I put drops of medicine in grandfather's eyes, he does all the other work himself." - Male Caregiver, 35 years old.*

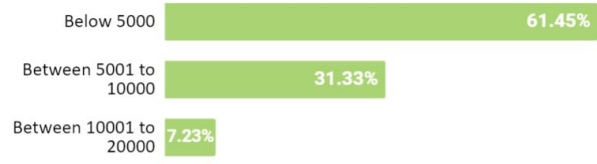


# Post-surgery, 26% of caregivers have started actively contributing to the household income, and are now complemented by recovered patients who have also entered the workforce

Primary caregiver's contribution to HH income (n=47)



Respondent employment income (n=83)



Post-surgery employment roles (n=83)



**Post-surgery primary caregivers begin contributing to household financial stability**

- There has been a notable alleviation in the burden faced by primary caregivers post-cataract surgery.
- Out of the 180 caregivers, 47 (26%) began contributing to household income with an average monthly income of **INR 2,436**.
- Among the 47, 26 (55%) cared for respondents aged 60-69, and 8 (17%) cared for those aged 70-79
- Out of the 47 primary caregivers, 8 (17%) primary caregivers' contribution to the household income has resulted in an increase beyond the pre-surgery monthly household income.

**Broader impact on individual's livelihoods and economic independence**

- Out of the 386 respondents, 83 (21%) **engaged in paid employment** after cataract surgery.
- Among them 83, 43 (52%) respondents are from the 60-69 age category, and 23 (25%) are from the 70-79 age category.
- Among all respondents employed post-surgery, 96% stated that improved vision post-surgery aided in obtaining employment.
- Out of the 83 respondents, 21 (25%) experienced an increase in earnings beyond their pre-surgery monthly income level.

From the qualitative insights, it is observed that a few respondents mentioned an improvement in their livelihood alternatives after the surgery. However, some respondents, considering their age, expressed that they no longer need to work, and they reported minimal improvement in the employment situation in their area.

*"After the surgery, when I started seeing properly I started engaging in fishing and earning income by selling milk from cows and buffaloes. Hence I now earn INR 6000-7000 per month." - Male Beneficiary, 60 years old.*

# Post-surgery, few respondents have transitioned into different roles while majority continues to remain uninvolved in paid employment, consistent with their pre-surgery status

Not engaged in paid employment (n=303)



66%

Old Age



53%

Do not need to work



41%

Pensioner



17%

Experiencing other health issues



9%

Not advised due to recent surgery



2%

Not much work is available



1%

Others:  
(Too cold to work, unclear vision)

- The respondents' decision to not engage in paid employment was influenced by a mix of factors: old age or not needing to work or underlying health conditions hindering their ability to work.
- 41% (125) of the respondents are pensioners and are not engaged in paid employment. However, out of the 83 respondents currently employed, 7 pensioners have stated that they are now self-employed farmers and have started earning post-surgery.
- 15% (46) respondents who are housewives have not engaged in paid employment.
- Considering that pensioners and housewives are not working, **44% (132)** respondents refrained from returning to work. Among these 132 respondents, 45% are aged 60-69, and 23% are aged 70-79.
- Before surgery, out of the 83 respondents who were farmers and reported earning individual income, 45 did not engage in paid employment following surgery. Among these 45 respondents, 51% are aged 60-69, 26% are aged 70-79, and 16% are aged 80-99.

*"I am above 70 years of age, hence I do not need to work. I only stay at home and do my work like: bathing, washing, eating, etc." - Male Beneficiary, 76 years old.*

*"At present the doctor has forbidden me from working for one to two months, but after a few days I will start going to the fields." - Male Beneficiary, 60 years old.*

*"There is not much change in the employment situation after the surgery because there is a lot of employment shortage in Bihar." - Male Beneficiary, 60 years old.*

## About Sattva

Sattva ([www.sattva.co.in](http://www.sattva.co.in)) is a social impact strategy consulting and implementation firm. Sattva works closely at the intersection of business and impact, with multiple stakeholders including non-profits, social enterprises, corporations and the social investing ecosystem. Sattva's work spans multiple states in India, multiple countries in Africa and South Asia, on the ground, and Sattva has engaged with leading organizations across the globe through its practice in a strategic advisory, realizing operational outcomes, CSR knowledge assessments, and co-creation of sustainable models. Sattva works to realize inclusive developmental goals across themes in emerging markets, including education, skill development and livelihoods, health care and sanitation, digital and financial inclusion, energy access and environment, among others. Sattva has offices in Bangalore, Mumbai and Delhi.

The impact assessment study was conducted by the Impact Measurement and Advisory team at Sattva. The team comprised:

Project Advisor: Bobbymon George

Project Lead: Ambika Jugran

Project Consultant: Snehank Shekhar

If you would like to collaborate with Sattva, kindly contact [impact@sattva.co.in](mailto:impact@sattva.co.in)

[www.sattva.co.in](http://www.sattva.co.in)

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# Impact Assessment of Tata Capital's "Akhand Jyoti Eye Hospital Intervention, in Bihar"

Detailed Insights Deck

28th March, 2024



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# Scope and Approach

# Background : Tata Capital and Akhand Jyoti Eye Hospital



Tata Capital has been working towards developing programs to help individuals shape a better future for themselves. Through its CSR initiatives, Tata Capital envisions creating shared value for the community at large, aligning with the Tata Group's core purpose. The organization aims to improve the lives of communities, especially socially and economically underprivileged communities, by making a long-term, measurable, and positive impact through its community projects.

Tata Capital has partnered with organizations dedicated to providing a better life to the less privileged and has undertaken initiatives in the healthcare space. The organization supports non-profit organizations and trusts that offer quality and sustainable solutions to those in need. Tata Capital believes in helping individuals unlock their true potential.

The Akhand Jyoti Eye Hospital is a unit of Yugrishi Shriram Sharma Acharya Charitable Trust. Conducting over 90,000 surgeries annually, it stands as the largest eye hospital in Eastern India. The hospital's service vision is to eradicate curable blindness in low-income regions by offering affordable, accessible, sustainable, and quality curative and preventive eye care services, aiming to empower women in achieving this goal. Akhand Jyoti Eye Hospital is dedicated to restoring the vision of cataract patients through surgery. These surgeries not only restore the person's sight but also their dignity, hope, and livelihood.

## The Partnership



Tata Capital has been associated with Akhand Jyoti Eye Hospital since 2019. Through this partnership, it aims to eradicate curable blindness by providing a holistic end-to-end eye care solution to rural communities with a three-pronged approach: building awareness about regular eye check-ups, conducting screening camps to identify refractive errors and other eye-related diseases, and providing corrective treatment through surgeries for the identified individuals, leading to the Gift of Vision.



# Approach and Methodology for the Impact Evaluation



## Objectives of the Assessment

1. To assess the change in the quality of life of beneficiaries who underwent the surgery
2. To capture any change in beneficiaries' dependency, productivity, and household income post-surgery
3. To assess the rigor of implementation on the ground to achieve the intended results

## Methodology



Sattva conducted the study over a period of 12 weeks. The study incorporated a descriptive cross-sectional design from a retrospective lens where data was collected from beneficiaries to provide a snapshot of the outcome. Sattva followed a mixed-method approach, collecting data using quantitative surveys and qualitative interviews with primary and secondary stakeholders. This helped gather valuable impact related insights from a 360-degree perspective across the stakeholders involved and was fundamental in providing recommendations for program.

## Framework for Impact Evaluation



Sattva based the research indicators and areas of inquiry on the OECD DAC\* framework. The framework focused on assessing Relevance, Coherence, Effectiveness and Impact of the program. The assessment followed a four phased approach consisting of Design, Data collection, Analysis, and Reporting. Sattva worked closely with the Tata Capital team to align on the indicators for the study.

\*Organization for Economic Cooperation and Development's (OECD) Development Assistance Committee (DAC)

# Stakeholders surveyed for the study



## Program Beneficiaries

Stakeholder	Survey (In-person)	Qualitative Interactions (In-person)
Patients (Past six months)	<b>386</b> (374 target)	10 (IDIs)
Primary Caregivers	-	3 (IDIs)
Village Head/Panchayat Members	-	2 (IDIs)
Community Members	-	1 (FGD**) : 3 to 4 people



## Program Team

Stakeholder	Qualitative Interactions (In-person)
Akhand Jyoti Program Team	1 (IDI*)
Akhand Jyoti Field Team	2 (IDIs)
Doctors	2 (IDIs)

\*In-depth Interview

\*\* Focus Group Discussion

## Key Hypotheses for the study

The Akhand Jyoti intervention exists on the premise that cataracts are a prevalent occurrence and are treatable.

Individuals who receive counseling before surgery are more likely to agree or be willing to proceed with the surgical intervention.

Post-surgery, individuals not only achieve clear vision but also demonstrate the capability to manage life's demands and exhibit confidence in participating in everyday activities.





# Executive Summary

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# Empowering Sight, Transforming Lives: Akhand Jyoti Eye Hospitals' crucial role in bridging Cataract Care gaps for marginalized communities in Bihar

Akhand Jyoti Eye Hospital works towards eliminating curable blindness by providing free cataract surgeries to economically disadvantaged and visually impaired patients residing in rural areas of Bihar and Eastern Uttar Pradesh. With over 4.3 million individuals suffering from visual impairment and limited access to surgeries in Bihar, the program is crucial in providing essential eye care services, countering the significant gap in Cataract Surgical Coverage (CSC) rates and contributing to the prevention of avoidable blindness in the region.



## Accessibility - bridging gap in providing quality eye care services

Awareness campaigns, screening camps, and the provision of free transportation facilities to and from the hospital have been transformative in **enhancing last-mile accessibility to eye care services and free cataract surgeries** for marginalized communities, especially the elderly population.



## Surgery Result - successful surgeries lead to high patient satisfaction

The seamless patient journey at Akhand Jyoti Eye Hospital is attributed to the support provided by the medical team. Successful surgical interventions have resulted in **clear vision for 93% of the patients**, leading to post-surgery experiences ranging from satisfactory to very satisfactory.



## Quality of Life - leading a life of dignity and independence

Following the surgery, patients are capable of independently performing daily tasks, meeting the demands of their lives, and fostering friendships. They have achieved a remarkable score of **92** on the Vision: Quality of Life instrument, further highlighting their enhanced sense of self-reliance and self-sufficiency post surgery.



## Community Participation - social interaction with community members

The improved visual capabilities of individuals after surgery have increased their social interactions and resulted in **90% of the respondents participating** in community-led activities.



## Employment - enhancing livelihood opportunities

Clear vision after surgery has opened avenues for gainful employment for some, **empowering them economically** as they engage in paid work.



# Background & Program Overview

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# Cataract remains a leading cause of blindness for India. In Bihar, cataract is responsible for 83% of the blindness as less than half the population has access to surgical coverage



## Spotlight on Blindness & Visual Impairment (VI) : Global & National View

The largest number of blind and visually impaired people reside in South Asia (11.7 and 61.2 million, respectively), **with majority being in India (8.8 million and 47.7 million).**<sup>1</sup>

In India, **blindness and visual impairment (VI) continues to be a major public health problem** and there are significant disparities in the prevalence and its causes across different regions in the country.<sup>2</sup>

Despite availability of cost-effective interventions to eliminate blindness caused by **cataract**, it still remains the leading cause of blindness in India at **66.2%**, followed by corneal opacity (CO) (8.2%), cataract surgical complications (7.2%), posterior segment disorders (5.9%), and glaucoma (5.5%). The proportion of **blindness and visual impairment that is due to avoidable cases are 92.9% and 97.4%** respectively. A rising trend in the prevalence of blindness has been observed with increasing age of participants. The prevalence increased from 0.45% in 50-59 years to 4.11% in 70-79 years and 11.62% in those aged  $\geq 80$  years.<sup>3</sup>



## Blindness & Visual Impairment (VI) : Bihar Perspective

The Indian Journal of Ophthalmology has published a study aiming to understand the prevalence and causes of avoidable blindness and visual impairment in Siwan district of Bihar, predominantly a rural area. This was the first study conducted in Bihar that used the Rapid Assessment of Avoidable Blindness (RAAB) 6 methodology, helping identifying the following:

- The prevalence of blindness was higher among the person aged  $\geq 80$  years, at 15.2%, while prevalence of blindness and visual impairment in adults aged 50 years and above was 2.2 and 23.6%.<sup>2</sup>
- Untreated cataract was the leading cause of blindness, in approximately three-quarters of individuals (72.9%) and another 7.1% were blind due to complications after cataract surgery.<sup>2</sup>

# Limited healthcare infrastructure, a shortage of skilled medical professionals, and low per capita income create barriers to accessing eye care facilities emphasizing the need for urgent solutions



## Need for addressing Bihar's Blindness Backlog

Research conducted by the Borgen Project, that is dedicated to engaging the public in efforts to reduce global poverty, states that:

- As of 2021, Bihar has over 4.3 million visually impaired and 7,00,000 blind<sup>5</sup>
- Over 1,00,000 additional people become blind each year due to aging, and cataract is responsible for 83% of the blindness<sup>5</sup>
- Extremely low Cataract Surgical Coverage (CSC) rate - More than half the population does not have access to cataract surgeries<sup>5</sup>
- Specialists are able to perform only 1,41,000 corrective eye surgeries per annum<sup>5</sup>
- Few hospitals and eye clinics in Bihar that provide comprehensive eye care to the people



- Lowest per capita income levels<sup>6</sup> make it extremely difficult to avail the existing healthcare services



- Shortage of skilled medical professionals, especially in rural areas and inconsistent medical standards add to the challenges of curing the blindness<sup>5</sup>



- Inadequate healthcare infrastructure facilities to treat the blind people and those with severely impaired vision
- The existing facilities are not easily accessible<sup>5</sup>

Given these barriers, Bihar lacks the essential human resources and infrastructure to independently tackle the prevalence of cataracts and other eye conditions.

"Poor infrastructure means patients cannot easily reach eye care centres and it hinders eye care providers from easily reaching the visually impaired in rural areas"

## World Health Organization (WHO) Recommends



In the public health sector in India, only community health centers (CHCs) and above have the necessary resources to conduct eye surgeries. The World Health Organization recommends a population to ophthalmologist ratio of **1:100,000**, in India the distribution varies from **1:25,000** in some urban pockets to **1: 250,000** and below in semi-urban and rural areas.<sup>4</sup>

To address this healthcare infrastructure gap, **Bihar requires 1040 eye surgeons in total to meet this demand for its population of 10,40,99,452 (Census 2011)**



# Akhand Jyoti Eye Hospital focuses on restoring the vision of patients blinded by cataracts through surgeries, aiming to restore dignity, instil hope, and enhance livelihood for individuals



**Mission:** To spearhead in Bihar, the elimination of curable blindness by 2026.



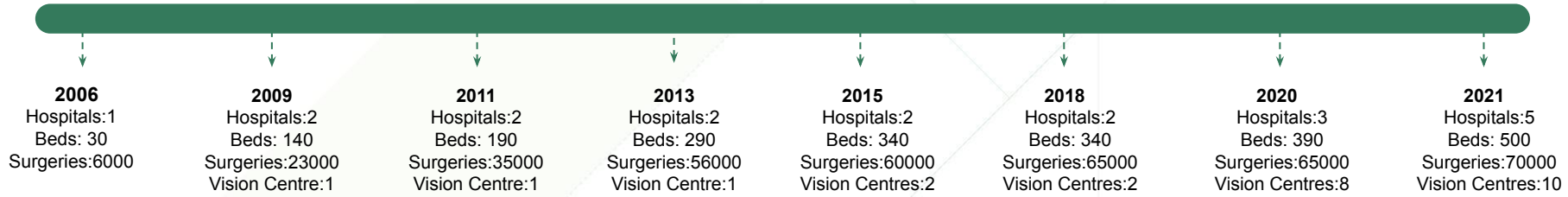
**Vision:** To help eliminate curable blindness by providing in low income regions of India, affordable, accessible, sustainable, quality and curative preventive eye care services, and empower women to achieve this.



## Blindness Elimination Programme - 'Swasth Drishti Abhiyan'

- Akhand Jyoti Eye Hospital works towards eliminating curable blindness by providing free cataract surgeries to economically disadvantaged visually impaired patients residing in rural areas of Bihar and Eastern Uttar Pradesh.
- Akhand Jyoti's team conducts eye camps in rural areas to identify blind patients. They go door-to-door in villages to raise awareness, transport the identified patients to Akhand Jyoti hospitals, provide cataract surgery, and arrange for their transportation back to their respective places after the surgery.
- 80% of sight-restoring surgeries that Akhand jyoti does are completely free for the poor.
- The purpose of the programme is to provide equal opportunity, alleviate poverty and enhance social capital in low-income geographies.

### Milestones



# The eyecare program offered by Akhand Jyoti aligns with international and national goals and objectives related to access to quality care, as well as promoting good health and well-being



1 NO POVERTY



5 GENDER EQUALITY



10 REDUCED INEQUALITIES



Akhand Jyoti Eye Care intervention contributes to the realization of **Goal 5** by **ensuring equality of access to care**. It also supports **Goals 1 and 10** by reducing dependency and enabling patients to return to their livelihood activities after surgery.

3 GOOD HEALTH AND WELL-BEING



The Akhand Jyoti intervention directly contributes to **Goal 3, Target 3.8**, within the **Good Health and Well-Being SDG**, by improving access to quality essential and affordable healthcare services to underserved communities.



Though not associated with the National Programme for Control of Blindness & Vision Impairment (NPCB&VI), **Akhand Jyoti** contributes to its mission by bridging the gap in healthcare delivery through its primary vision centers & outreach camps in Gopalganj and Siwan districts by specifically targeting underserved communities.

The **Akhand Jyoti** program is aligned to the following national targets for blindness and cataract in India:

- By conducting upto **90,000 surgeries**<sup>7</sup> annually, the intervention is working towards reducing the backlog of avoidable blindness
- Working towards reducing the prevalence of blindness from **1% to 0.25% by 2025**<sup>8</sup>

Government schemes providing access to cataract surgeries through partial or full insurance coverage:

- Rashtriya Swasthya Bima Yojana (RSBY)
- Ayushman Bharat - Health & Wellness Centers (AB-HWCs)



# Akhand Jyoti follows a unique outreach model and ensures last-mile accessibility of quality eye care services for underserved communities

The Akhand Jyoti team organizes on-ground awareness drives on eye care and screening camps across gram panchayats and villages with an objective of covering far-to-reach communities. In a few instances, these screening camps are organized based on invitations by the panchayat or community leaders, but in most cases, the awareness drive for eye-screening camps is conducted in blocks where they have not established a presence yet.

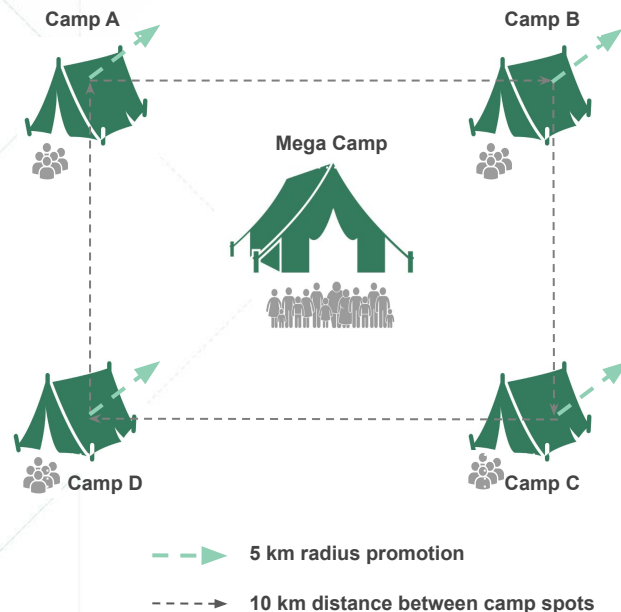
## For organizing Screening Camps, Akhand Jyoti follows a “10-ka-Dabba” approach

Three to four days before the screening camps, the on-ground team distributes informational pamphlets, conducts auto-miking campaigns, and includes home visits as part of the awareness drive.

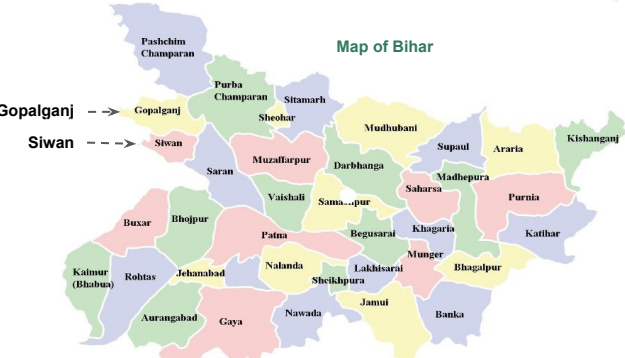
- After the awareness drive, Screening **Camp A** is organized at a village level. Community members are expected to reach the camps on their own. The Akhand Jyoti team extends transportation assistance on a case-to-case basis.
- After Screening Camp A, the Akhand Jyoti team moves **10 km east** to organize **Camp B**, after 10 days **Camp C** is organized, and finally **Camp D**, therefore, forming a Quadrant.
- Each camp is organized for a day within a village. In few cases, the maximum distance between the camp and nearby villages is between 2-3 kms.
- During peak seasons, the camp sees a footfall of 100 participants, while during lean seasons, it is around 60. Each camp is organized at a gap of 10 days.

- Patients from Camp A, after undergoing cataract surgery in the hospital, are invited to Camp B for post-surgery follow-ups.
- This process continues with patients from Camp B moving to Camp C and patients from Camp C proceeding to Camp D for post surgery follow-ups.
- The patients must attend two required follow-up appointments after surgery, the first, scheduled between 7-10 days that aims to assess potential eye complications; and the second follow up is after 30 days to assess their eye-refraction.
- **These patients coming for their follow-ups, serve as brand ambassadors**, motivating others by sharing their experiences with those undergoing initial eye screenings, thereby significantly influencing surgery acceptance rates.

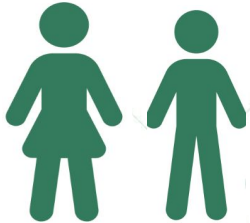
Following the conclusion of the four camps, a one-day **Mega Camp** is organized 7-10 days later at a location, nearly equidistant to the four camps. 150-200 community members are expected to participate in the Mega Camp. The objective is to reach community members within a 25-40 km radius who might have missed any of the initial camps.



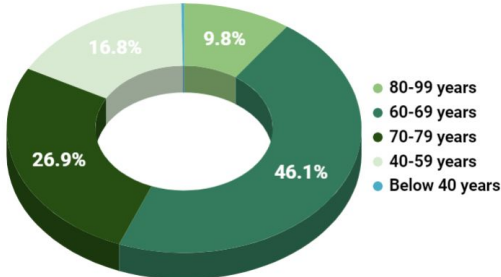
# The surveyed beneficiaries had a slightly balanced representation of male and female, largely above the age of 60 with a significant population belonging to low income households



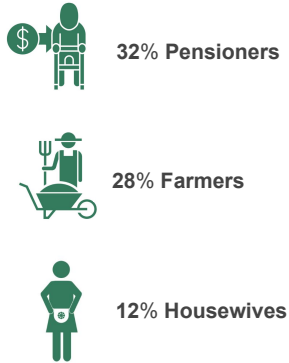
93.5%<sup>9</sup> population of **Gopalganj** district and 94.5%<sup>10</sup> population of **Siwan** district live in **rural areas** or villages



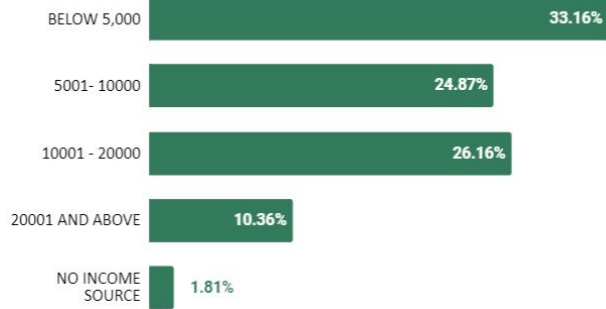
Out of the total respondents, **52%** are **Females** and **48%** are **Males**, with a **median age of 65**



**70%** of respondents have **No Formal Education**

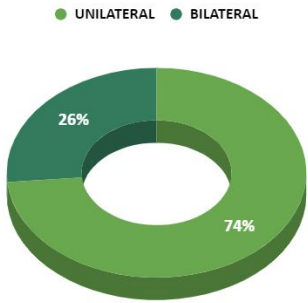


**Occupation of respondents (n=386)**



While, 3.62 % of the respondents stated that they did not know their monthly household income, **58%** of respondents lived in **households (HHs) with monthly incomes less than INR 10,000**, before the surgery. The provision of free surgery is helping prevent catastrophic health expenditures.

**Type of Cataract (n=386)**



Patients with bilateral cataract have a lower quality of life and worse mental health than those with unilateral cataract.<sup>13</sup>

The **Economic Survey 2021-22**<sup>11</sup>, and the **Ministry of Agriculture and Farmers Welfare**<sup>12</sup> stated as on March 2023, that the average monthly income per agricultural household in the country stood at **INR 10,218 in 2019** as against INR 6,426 in 2014.



# IMPACT INSIGHTS



# The Program ensures adequate awareness is provided before the camps are set up. Sharing the procedure and benefits of the surgery during diagnosis at the camps built trust among the patients



According to National Family Health Survey (NFHS) 5, **70%** and **60%** of the senior citizens and women respectively find healthcare facilities largely inaccessible. Studies suggest that factors such as lack of education, cultural beliefs and misconceptions further contribute to the disparity in surgical uptake.<sup>14</sup>



There are myths and apprehensions in rural areas that make it difficult to convince patients for surgery. While interacting with the program stakeholders, Sattva observed misconceptions regarding the ideal season for surgery, with a common belief that it should be performed in winter. As a result the surgical uptake during winters was usually higher in comparison to other seasons.

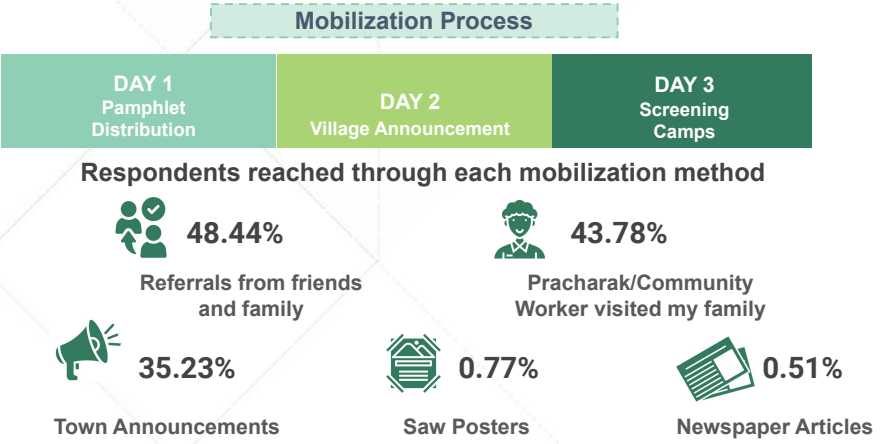


Mobilization for check-up/screening at camps set up by Akhand Jyoti is led by its **Pracharaks**. Leveraging the trust gained from being part of the same community, Pracharaks effectively encourage the community members to participate.



During the camps, beneficiaries undergo thorough screening and counseling, providing accurate eye-health information and dispelling myths through targeted communication. This builds trust, facilitating an effective healthcare journey. Following the diagnosis, they receive a surgery date, undergo postoperative counseling and are also scheduled for two mandatory follow-up appointments.

*"Akhand Jyoti camps are organized in nearby panchayats and people go for treatment. It is only because of Akhand Jyoti that there is a lot of awareness among the people." - Panchayat Member, 52 years old.*



**Awareness campaigns resulted in 100% of the respondents agreeing to the surgery, immediately after diagnosis.** The respondents' decision to undergo surgery was influenced by a mix of factors. 83% agreed because the surgery was free, 66% agreed because they trusted the hospital's name, 57% agreed because the program team assured them that the surgery was safe and useful, and 39% agreed because their friends/family members got their surgeries here.

**94% of individuals reported receiving counselling before the surgery.** As part of the counselling they received a range of suggestions and advice. 86% of respondents stated that the surgical procedure was explained to them, 62% mentioned that they were informed about the benefits of the surgery, while 32% stated that the risks of surgery were explained to them during counseling.




**102** respondents reported having **bilateral cataract** but only had one eye operated on. Among those with bilateral cataracts, **93** respondents reported that the Akhand Jyoti medical team recommended undergoing surgery on only one eye at a time.


## Incentives, such as free transportation, hospital accommodation, and meals, along with a shorter wait time for surgery, have encouraged beneficiaries to seek complete treatment post-diagnosis


The surveyed villages in Gopalganj and Siwan are about 100-120 km from Akhand Jyoti Eye Hospital in Mastichak. Although district hospitals are on average 35-40 km away from these villages, community members prefer undergoing surgeries at the Akhand Jyoti Hospital. This preference is attributed to:


- **Free transportation:** Akhand Jyoti team's provision of free transportation to and from the hospital.
- **Shorter waiting time for surgeries:** Less than 10 days at Akhand Jyoti Hospital compared to considerably longer waiting periods (1-2 months) in government hospitals.
- **Medical personnel:** The availability of a higher number of experienced ophthalmologists at Akhand Jyoti Eye Hospital.

Our qualitative insights shed light on respondents' experiences during their visit to the hospital for eye surgery. It was observed that they were provided a free overnight stay before the operation and they received regular meals during their stay, including porridge, khichdi, bread, chapati, biscuits, and tea.

 **94%** of the respondents used the bus services provided by Akhand Jyoti to travel to the hospital

 **99%** reported that they were provided overnight stay at the hospital


 **98%** reported that they received regular meals at the hospital


 **96%** reported that they were provided medicines at the hospital during their stay


Respondents reported an average waiting time of **one week for cataract surgeries** after diagnosis, with **99%** being satisfied to very satisfied with the promptness of the surgery scheduling post-diagnosis.


*"They looked into my eye through a torch instead of any machine and they told me that there is cataract in your left eye and you need to undergo surgery. Later they gave me an appointment to undergo surgery after 6 days." - Male Beneficiary, 60 years old.*

### Respondents' feedback highlights

 **98%** were satisfied to very satisfied with the results of the surgery

 **98%** were satisfied to very satisfied with the effectiveness of the medicines

 **99%** were satisfied to very satisfied with the comfort of stay and quality of meals

 **99%** were satisfied to very satisfied with the care provided by the hospital staff

From the qualitative insights, it was observed that the respondents were very happy with the result of the surgery. They mentioned feeling pleased as they could now see everything clearly.

**Sattva team's observation:** It was observed that a few patients paid between INR 300 and INR 600 to the bus driver to take them to the base hospital in Mastichak for free eye surgery. We later found out that these patients were transported to the hospital for surgery by buses that were not operated by Akhand Jyoti but arranged locally by influential individuals who also organise a few screening camps in specific areas. While the bus services provided by Akhand Jyoti are free of cost for the patients, the bus fare for those arranged by local influential people is divided among the patients and they pay the transporter. Since the community assumes services such as eyecamp and surgery is being provided by Akhand Jyoti, clear communication from the team and support from their transporters to reach the patients will help address such grievances raised.

*"I was discharged and when I went home and opened my blindfold, I could see everything very clearly and I was very happy about this. For this I thank Akhand Jyoti again and again." - Male Beneficiary, 55 years old.*



# Provision of post-operative care and counselling to the beneficiaries reduced potential complications post surgery with 77% of the patients resuming their normal routine within two-three weeks of being treated

Common complications for manual small-incision cataract (MSICS) include inflammation, dislocation of artificial lens and retinal detachment. According to a study published in the Journal of Clinical Ophthalmology, proper post-operative care has the ability to reduce the overall risk of severe complications after cataract surgery to up to 0.5% in the one-year postoperative period.<sup>15</sup>

## Post-Operative Counselling and Care



**Akhand Jyoti provides free treatment in case of any complications.** Additionally, patients receive postoperative counseling, along with a strict medical regimen. Two compulsory check-ups/follow-ups are scheduled after 7 and 30 days of the surgery.



**90%** of the respondents who underwent surgery reported receiving postoperative counseling, during which they were provided with explanations of the activities to follow for post-surgery care, and given follow-up appointment dates. **98%** of the respondents were satisfied to very satisfied with the quality and comprehensiveness of the counseling received before and after the surgery.

As part of the post-operative counselling received by the patients, they were guided and informed on the regular procedures and steps to follow as part of their daily eye care routine. Respondents mentioned that post surgery, they:



**99%**

used eye drops regularly



**98%**

used dark glasses



**95%**

ensured good hygiene practices



**95%**

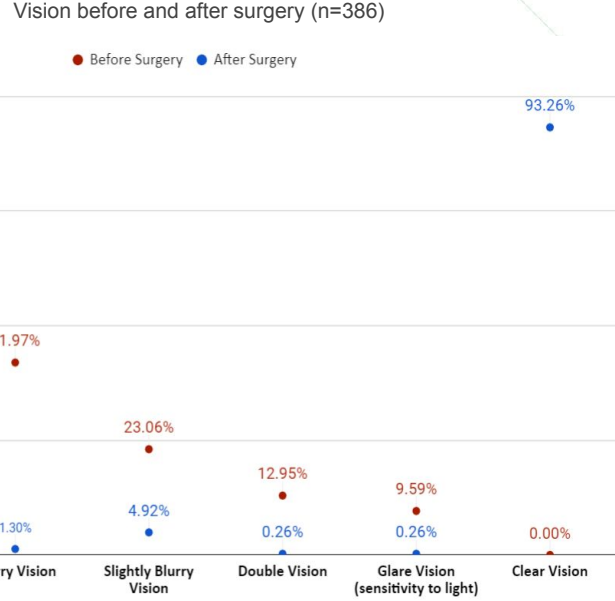
took the prescribed medication

Our qualitative findings emphasize the respondents' capability to resume their usual activities after surgery. They reported engaging in various tasks, including shopping in village markets, cycling, tending to agricultural fields, handling household chores and expenses, attending school, and reading books.

*"I have received some eye drops from Akhand Jyoti and the doctor has advised me to protect my eyes from smoke and dust, for this he has also given me black glasses."*  
- Female Beneficiary, 60 years old.

# The surgeries recorded a high success rate, with 93% of patients who reported having 'blurry, double, glare or no vision' achieving 'clear vision'

Cataract surgery is associated with significant improvements in cognitive functions<sup>18</sup>, vision-related quality of life<sup>19</sup> and a reduction in depressive symptoms. Given that a significant proportion of Akhand Jyoti beneficiaries are aged 65 and above, there exists an elevated susceptibility to functional decline. This risk is attributed to factors such as absence of a robust support system, or instances of neglect.



The surgeries performed were highly successful as **93%** of the respondents reported **clear vision** following surgery.



**92%** of the respondents reported facing no complications after the surgery.



However, among the remaining **8%** (32 respondents) who reported facing complications, 78% complained of watery eyes, 9% complained of a burning sensation, another 9% complained of redness in the eye, citing an infection, and one respondent mentioned that he had clear vision post-surgery, but now his vision has become blurry.



Of the 32 respondents, **25 reported having clear vision following recovery from complications**, while 4 experienced slightly blurry vision, 2 had blurry vision, and 1 reported a combination of slight blurriness and glare.



Additionally, **1%** (4 respondents) between the age of 40-79 reported an issue of cataract recurrence. All four had their eyes operated on in the past six months, and they haven't undergone another surgery or received treatment yet.

Following surgery, a total of **7%** (26 respondents) reported experiencing unclear vision. This group comprises both individuals who encountered complications after surgery and did recover from them, as well as those who did not have any complications.

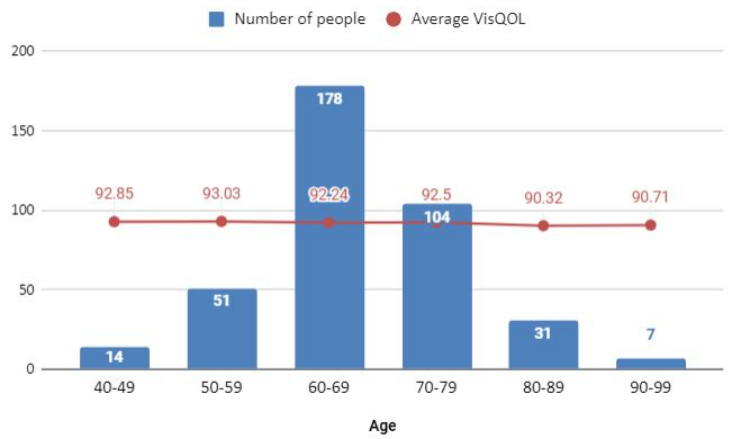


According to National Blindness & Visual Impairment Survey by the National Programme for Control of Blindness & Visual Impairment (NPCB&VI), the overall rate of complications associated with cataract surgery for population aged  $\geq 50$  years in India is 7.2%.<sup>16</sup> It is important to note, few of these symptoms are common after cataract surgery and it takes around four to six weeks to fully heal.<sup>17</sup>

*"My lifestyle has improved a lot after eye surgery. It has been 3 months since my surgery and even after 3 months there is no problem in my eye, there is no watering nor any stinging in the eyes and it looks absolutely clear and that is why I am very happy."* - **Female Beneficiary, 60 years old.**

# Over 94% of the patients experienced an improved quality of life and were able to function independently, thereby leading a life with dignity within the community

Vision Quality of Life (VisQOL) a multi-attribute instrument designed to assess the impact of visual impairment on various aspects, including the risk of injury, coping mechanisms, social relationships and organizing assistance.<sup>21</sup> The objective is to understand individuals' abilities to lead productive and fulfilling lives in their social context, supported by fulfillment of roles, and engagement in daily activities. **Higher overall combined scores indicate greater impact and better quality of life.**



Only one respondent was in the age category, "below 40 years". Overall respondents scored '92' on the AQoL-7D (Vision)<sup>20</sup> questionnaire on quality of life after the Cataract Surgery. The correction of vision led to an enhanced quality of life, and helped the aged population to lead a life of dignity and independence.

From the qualitative insights it can be observed that, respondents have experienced numerous positive lifestyle changes following the surgery, such as - feeling confident in performing their daily activities and interacting with other members of the community.

Following surgery, respondents share the transformations in their quality of life (n=386). They expressed -



98%

Post surgery vision has no effect on their ability/does not make it difficult at all to cope up with the **demands of their life**



96%

Post surgery vision allows them to **organize any assistance** they may need without any difficulty



94%

Post surgery vision makes having **friendships** easier for them



97%

Post surgery vision has no effect on their ability/ does not make it difficult to fulfill the **roles** they would like to fulfill in life (e.g.family roles, work roles, community roles)



93%

Post surgery vision has **improved their confidence** to join in everyday activities




88%

It is most **unlikely** they will **injure** themselves because of their post surgery vision


*"After the surgery, my lifestyle has undergone significant positive changes. I can now work in the fields and I will be able to cover my household expenses with the grains produced. Moreover, after the surgery, I have gained a lot of confidence to handle my tasks independently." - Male Beneficiary, 70 years old.*


# As a result of successful surgery, respondents were able to perform a large number of tasks at home and in the community independently which increased their confidence and happiness quotient


After surgery, in addition to the changes in the quality of life that respondents experienced, they are now able to independently perform most tasks, thereby reducing their dependency on caregivers. The list below indicates the activities that respondents can now perform post surgery (n=386).


 **99%** feed themselves


 **93%** travel independently

 **98%** use the toilet themselves

 **90%** climb stairs themselves

 **97%** dress themselves

 **75%** manage day-to-day household transactions on their own


 **95%** bathe themselves

Our qualitative findings emphasize the respondents' capability to perform daily tasks on their own, and significantly reducing the burden on the caregivers. Unless absolutely necessary, the respondents prefer doing their tasks on their own.

*"After the cataract surgery, he can now see everything clearly, so he does all the work himself. That's why I don't have much work left. Now I am happier than before." - Female Caregiver, 63 years old.*

*"There has been a lot of change in my lifestyle after the surgery. I can see well and do all my work well. The best thing is that I am able to run my house and manage the household expenses." - Male Beneficiary, 52 years old.*

*"There have been a lot of changes in lifestyle after surgery. Now I can easily do my own work like bathing, washing clothes, walking on the road." - Male Beneficiary, 76 years old.*

 After the surgery, **90% of respondents witnessed an uplift in community participation**, marking a 12% increase before and after the surgery procedure.

# The ability to perform daily tasks independently has significantly reduced the burden on primary caregivers in the family and 95% of the caregivers have now returned to their regular routine



HelpAge India conducted a research study and published a National Report in 2019<sup>22</sup>, stating that daughter-in-laws and daughters spend the most time as caregivers for the elderly in households across India. The study further stated that the majority of these caregivers feel angry, embarrassed, and a sense of strain when they are with the elderly for whom they are caring. This sense of helplessness significantly contributes to instances of neglect and potential abuse towards the elderly.

## Before Surgery

**46% (180) of the respondents stated that they had someone from the family looking after them and they relied on them for carrying out day-to-day activities before their surgery.** 67% of these caregivers were women, majority being the respondents' daughter-in-law.



### Impact on Caregiver's Employment

Out of 180 caregivers, 23 (13%) experienced an impact on their employment as they had to take care of their family member:

- 8% caregivers took excessive leave from their place of employment.
- 4% caregivers received pay cuts due to the frequent leaves they took from their work.
- 1% caregivers quit their work or stopped working.



### Impact on Caregiver's Education

Out of 180 caregivers, 21 (12%) had their education impacted as they had to take care of their family member:

- 10% of the caregivers had to take frequent leaves from school.
- 1% mentioned that they were unable to perform well in school and received low-grades.
- 1% stated, they had to drop out from their school.

## Post Surgery

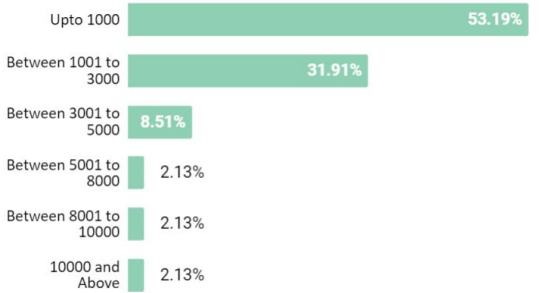
**53% (206)** of all respondents did not require a caregiver before the surgery. After the surgery, **98% (201)** of them reported **not needing** any assistance or support, while the remaining **2% (5)** respondents stated that they would seldom require help to carry out day-to-day activities even after the surgery.

**95% (171)** of all caregivers returned to their normal routine, encompassing those who had either left work, were irregular at work and school, or had to drop out. Among those who returned to their normal routine, 86 (**50%**) caregivers were of respondents from the 60-69 age category and 44 (**26%**) caregivers were of respondents from the 70-79 age category. 5% (9) caregivers, decided to not return to their old routines and spend time with their family.

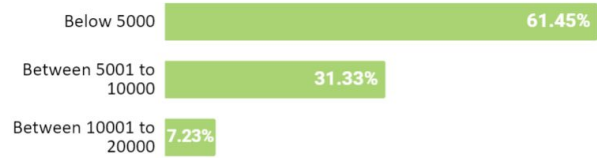
*"I used to bathe him and take him up the stairs to the bathroom, but after the operation everything is clearly visible to Grandfather, because I see him reading newspapers after the surgery and doing all the work himself. Now I just I put drops of medicine in grandfather's eyes, he does all the other work himself." - Male Caregiver, 35 years old.*

# Post-surgery, 26% of caregivers have started actively contributing to the household income, and are now complemented by recovered patients who have also entered the workforce

Primary caregiver's contribution to HH income (n=47)



Respondent employment income (n=83)



Post-surgery employment roles (n=83)



**Post-surgery primary caregivers begin contributing to household financial stability**

- There has been a notable alleviation in the burden faced by primary caregivers post-cataract surgery.
- Out of the 180 caregivers, 47 (26%) began contributing to household income with an average monthly income of **INR 2,436**.
- Among the 47, 26 (55%) cared for respondents aged 60-69, and 8 (17%) cared for those aged 70-79
- Out of the 47 primary caregivers, 8 (17%) primary caregivers' contribution to the household income has resulted in an increase beyond the pre-surgery monthly household income.

**Broader impact on individual's livelihoods and economic independence**

- Out of the 386 respondents, 83 (21%) **engaged in paid employment** after cataract surgery.
- Among them 83, 43 (52%) respondents are from the 60-69 age category, and 23 (25%) are from the 70-79 age category.
- Among all respondents employed post-surgery, 96% stated that improved vision post-surgery aided in obtaining employment.
- Out of the 83 respondents, 21 (25%) experienced an increase in earnings beyond their pre-surgery monthly income level.

From the qualitative insights, it is observed that a few respondents mentioned an improvement in their livelihood alternatives after the surgery. However, some respondents, considering their age, expressed that they no longer need to work, and they reported minimal improvement in the employment situation in their area.

*"After the surgery, when I started seeing properly I started engaging in fishing and earning income by selling milk from cows and buffaloes. Hence I now earn INR 6000-7000 per month." - Male Beneficiary, 60 years old.*



# Post-surgery, few respondents have transitioned into different roles while majority continues to remain uninvolved in paid employment, consistent with their pre-surgery status

Not engaged in paid employment (n=303)



66%

Old Age



53%

Do not need to work



41%

Pensioner



17%

Experiencing other health issues



9%

Not advised due to recent surgery



2%

Not much work is available



1%

Others:  
(Too cold to work, unclear vision)

- The respondents' decision to not engage in paid employment was influenced by a mix of factors: old age or not needing to work or underlying health conditions hindering their ability to work.
- 41% (125) of the respondents are pensioners and are not engaged in paid employment. However, out of the 83 respondents currently employed, 7 pensioners have stated that they are now self-employed farmers and have started earning post-surgery.
- 15% (46) respondents who are housewives have not engaged in paid employment.
- Considering that pensioners and housewives are not working, **44% (132)** respondents refrained from returning to work. Among these 132 respondents, 45% are aged 60-69, and 23% are aged 70-79.
- Before surgery, out of the 83 respondents who were farmers and reported earning individual income, 45 did not engage in paid employment following surgery. Among these 45 respondents, 51% are aged 60-69, 26% are aged 70-79, and 16% are aged 80-99.

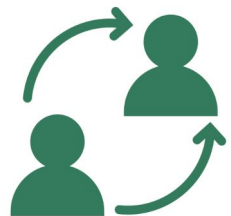
*"I am above 70 years of age, hence I do not need to work. I only stay at home and do my work like: bathing, washing, eating, etc." - Male Beneficiary, 76 years old.*

*"At present the doctor has forbidden me from working for one to two months, but after a few days I will start going to the fields." - Male Beneficiary, 60 years old.*

*"There is not much change in the employment situation after the surgery because there is a lot of employment shortage in Bihar." - Male Beneficiary, 60 years old.*



# The unanimous sentiment among program respondents stands as a powerful testament to the enduring benefits perceived by the community



99%

respondents are **“likely to highly likely”** refer this program to a friend/relative in their community who needs cataract surgery



100%

respondents feel that the **program should be continued** and people should be benefited from it

*“My livelihood options have become better after the surgery because earlier I was not able to do wood cutting work, but now I can easily cut wood using the machine and can also grow some grains through farming.” - Male Beneficiary, 52 years old*

*“There has been a good change in lifestyle after the surgery, I can go to school, read books and even play with other kids.” - Male Beneficiary, 12 years old*

*“Many people are benefiting from the program run by Akhand Jyoti and their lives have improved a lot after the treatment of cataract. People are no longer dependent on others for their living. People are most worried about the tasks of their daily life, but after the treatment of cataract, even old people are able to do their work on their own because the biggest problem of cataract is faced by people above 60 years of age. Hence Akhand Jyoti has come as a boon for the old people. We want this program to continue forever so that there remains light in the lives of the people.” - Community Member.*

# They key findings of the study validate the hypotheses

## Hypotheses

The Akhand Jyoti intervention exists on the premise that cataracts are a prevalent occurrence and are treatable



Individuals who receive counseling before surgery are more likely to agree or be willing to proceed with the surgical intervention



Post-surgery, individuals not only achieve clear vision but also demonstrate the capability to manage life's demands and exhibit confidence in participating in everyday activities.



## Findings that validate the Hypotheses

74% of respondents were diagnosed with unilateral cataract, while 26% were diagnosed with bilateral cataract. Overall, the majority of respondents (93%) achieved clear vision following successful cataract surgery.

Positive correlation : Pearson chi-squared test ( $P=0.000$ ) between individuals who received counseling before surgery and their subsequent agreement or willingness to proceed with the surgical intervention.

93% respondents achieved clear vision post surgery and are able to demonstrate the capability to manage life's demands and exhibit confidence in participating in everyday activities.



# Recommendations (Program Level)

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# Cataract awareness campaigns could be introduced during summers, addressing the misconceptions and distributing the caseload

Challenges/Observations	Recommendations
<p>Misconceptions about cataracts still persist causing many beneficiaries to postpone surgeries in the summer. This, in turn, contributes to a significant caseload during the winter months.</p> <p><i>"Despite booking a certain number of patients, the actual turnout is often significantly lower in summers. Around x - 50 in winter, but in summer it's around x-150 or similar." - Doctor, Akhand Jyoti, Mastichak</i></p> <p>Misconstrued perceptions or ideas regarding cataract stems from a low literacy rate among the beneficiaries. Akhand Jyoti addresses most of these awareness concerns through their mobilization and counseling sessions, with an effort to educate patients on the importance of eye care. A more nuanced awareness campaign involving various stakeholders such as panchayat members, and community youth can engage young people in the community to take ownership of the cause.</p>	<ul style="list-style-type: none"><li>• The Akhand Jyoti team may design and implement awareness campaigns from April to July to address the widespread misconceptions associated with cataract surgery.</li><li>• Initiating awareness campaigns in villages, schools, and colleges across the district, the content of the campaign can be crafted following the "<a href="#">Training Manual on Eye Care for Community Health Officers</a>" published by the Ministry of Health and Family Welfare, under the National Health Mission, specifically referring to <b>Chapter 5: Overview and Management of Cataracts</b>.</li><li>• Organizing an event to commemorate Cataract Awareness Month in June, featuring success stories through community events in chosen villages. Students, as volunteers and change agents, can play a crucial role in planning and implementing activities.</li></ul> <p><b>Why should this help?</b></p> <ul style="list-style-type: none"><li>• In many Indian households, educated youth play a crucial role in supporting their parents and grandparents dispelling major misconceptions. By involving them in a small role, Akhand Jyoti can not only gain new program supporters but also enlist a group of educated young community mobilizers, complementing their existing pool of community pracharaks.</li><li>• The surgical workload will be distributed evenly, resulting in a reduced burden on the system during winters with an optimal utilization of hospital capacity in terms of resources.</li></ul>

# Introducing Mobile Health Clinic to bridge the gap between underserved communities and free cataract surgeries

Challenges/Observations	Recommendations
<p>Bihar is a large district with over 44,874 villages, spread across 38 districts, as per Census 2011.<sup>23</sup></p> <p>Presently, there are four Akhand Jyoti eye hospitals (secondary centers) in Bihar, a 300-bed tertiary center in Mastichak, and plans are underway for the Centre of Excellence, a 500-bed hospital in Mastichak, to commence its operations soon.</p> <p>However, due to poor road connectivity within villages and the associated transportation costs, these eye hospitals remain inaccessible to the majority of respondents. This lack of accessibility poses a significant barrier to individuals seeking eye care services, particularly those in rural areas</p> <p><i>"Despite the program's efforts in providing free cataract surgeries and increasing awareness about eye health, the demand for cataract surgeries continues to exceed the hospital's capacity. Additionally, the aging population in Bihar contributes to a steady influx of new cataract cases, offsetting any potential decrease resulting from the program's interventions." - Doctor, Akhand Jyoti, Mastichak</i></p> <p>Moreover, a majority of the program beneficiaries are aged over 60 and struggle with other comorbidities, adding to the challenge of their travel to the hospital.</p> <p>To address challenges related to access, Akhand Jyoti organizes camps in selected villages. However, to further extend reach to more vulnerable beneficiaries, <u><a href="#">a mobile clinic could travel to remote areas.</a></u></p>	<ul style="list-style-type: none"><li>• Doorstep services with a team of trained optometrists may be provided in remote villages to support the diagnosis of a small number of target people or those facing difficulty reaching screening camps.</li><li>• Community pracharaks (mobilizers) could support with identifying such areas</li></ul> <p>These mobile clinics are known to successfully reduce barriers in access to healthcare. They are popularly used by international organizations like <u><a href="#">UNICEF</a></u> and <u><a href="#">World Health Organization (WHO)</a></u>.</p> <p><b>Why should this help?</b></p> <ul style="list-style-type: none"><li>• Since the majority of beneficiaries are 60 years and older, and considering the lack of sufficient social support at home, particularly among elderly women facing mobility challenges, the implementation of mobile clinics will facilitate the extension of cataract surgical services to the most underprivileged and remote communities.</li><li>• Over time, this may lead to a decrease in the necessity to organize mega camps in villages with minimal cases of cataract.</li></ul> <p>Organizations with similar interventions: <u><a href="#">HelpAge India</a></u>, <u><a href="#">Tata Power</a></u> and <u><a href="#">Smile Foundation</a></u>.</p>



# Recommendations (Ecosystem Level)

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# Providing quality eye-care services through collaborative efforts



## Participating in government led eye camps and screening programs

Partnering with the National Programme for Control of Blindness & Vision Impairment (NPCB&VI), a flagship initiative by the Government of India, to conduct joint eye camps and screening initiatives in rural areas.

By leveraging the resources and infrastructure of both entities, these eye care programs can reach a larger population across geographies and identify individuals in need of eye care services.



## Supporting government-led capacity building initiatives

Contributing to capacity-building efforts under the NPCB&VI by empowering rural girls in villages where the government's flagship initiative operates. This endeavor involves integrating Akhand Jyoti's Football to Eyeball Programme into the government's ongoing eyecare personnel capacity-building initiatives. The Football to Eyeball Programme is an immersive six-year long capacity building and development program for rural girls.

Through their Football to Eyeball program, Akhand Jyoti not only empowers girls but also contributes to poverty reduction. By identifying opportunities for young girls in the geographies where NPCB&VI's flagship program operates and involving them in this program, Akhand Jyoti can actively support government-led capacity-building initiatives and nurture these girls into becoming catalysts for social change.

The overarching goal is to increase the participation of girls in the Football to Eyeball program. This approach yields a dual impact:

- 1) Expansion of eye care human resources: By nurturing a talent pool of trained optometrists, the program contributes to addressing the shortage of eyecare professionals in rural areas in the long run.
- 2) Empowerment of girls: By providing them with education, skills, and employment opportunities, girls are empowered to lead independent and fulfilling lives.



# Annexure

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## Key Research Questions - Impact

Sub-themes	Research Questions
<b>Short-term Impact</b>	The community is aware of what Cataract is and possible means of treatment?
	Did all the beneficiaries who were identified with Cataract get treatment?
	Do the participants use the transport services provided for them?
	Has the acceptance of Cataract Surgery in the community increased?
	Was the post-surgery counselling comprehensive and useful?
	Did the beneficiary follow post-surgery aftercare?
	What is the frequency of recurrence of Cataract in the operated eye?
	What is the rate of successful Cataract Surgeries in the program? (No. of surgeries done with minimal to zero complications)
<b>Medium-term Impact</b>	Has the surgery reduced dependency of the beneficiaries and improved their quality of life scores?
	Has the surgery improved caregiver's productivity and increased the household income?
	Has the surgery improved community participation of the beneficiaries?
	Has the surgery helped in improving the livelihood opportunities of the beneficiaries?

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