

Study on Knowledge, Attitude and Practices Regarding
Eye Health Care and Willingness to Pay for Spectacles
Among the Slums Population of Chandigarh

By

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. Harsheen Sethi**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **National Health Mission, U.T. Chandigarh** from February 19, 2016 to May 6, 2016.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

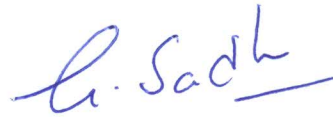
I wish her all success in all her future endeavors.



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This is to certify that Dr. Harsheen Sethi, MBA, Healthcare Management (MBA), IIHMR University, Jaipur has completed her 'Orientation Programme' under National Health Mission, U.T., Chandigarh w.e.f. 19th February 2016 to 6th May, 2016.

She aptly handled major responsibilities during this tenure. We found her to be hard working, productive and with good conceptual knowledge.

She was found to be punctual, positive and performance oriented. She has completed her projects with commitment and sincerity.

We at National Health Mission, Chandigarh wish her all success in her future endeavors.


Mission Director
National Health Mission, U.T
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **A Study on Knowledge, Attitude and Practices regarding Eye Health Care and Willingness to Pay for spectacles among the Slum Population in Chandigarh** and submitted by **Dr. Harsheen Sethi** Enrollment No **IIHMR-U/MBA-HM/2014-16/19-1552** under the supervision of **Dr. Goutam Sadhu** for award of MBA Hospital and Health Management of the University carried out during the period from **February 8, 2016 to April 30, 2016** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Harsheen Sethi

Dr. Harsheen Sethi

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I hope the time I have invested, has been useful in deriving some important health information regarding eye care demand and provision among the slum population in the Chandigarh.

Dr. Harsheen Sethi

LIST OF ABBREVIATIONS:

NHM	National Health Mission
NPCB	National Programme for Control of Blindness
CD	Civil Dispensary
WTP	Willingness to Pay
OPD	Outpatient Department
IPD	Inpatient Department
OOP	Out of Pocket
PPP	Public Private Partnership
ECHS	Ex-servicemen Contributory Health Scheme
ESIS	Employment State Insurance Scheme
CGHS	Central Government Health Scheme
SPSS	Statistical Package of Social Science
PIP	Program Implementation Plan
WHO	World Health Organisation
ROP	Record of Proceedings

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INTRODUCTION:

Visual impairment is a global public health problem. As per WHO 285 million people suffer from visual impairment, of which 39 million are blind. About 90 per cent of the world's visually impaired live in low-income countries. India accounts for the 12 million blind persons (1 percent), the majority of whom are aged over 50 years. Of the 12 million, 26 percent of children are suffering due to corneal disorder. Most of them live in the poorest parts of the country, with little or no access to even basic health care facilities. Globally, uncorrected refractive errors are the main cause of moderate and severe type of visual impairment; cataract remains the leading cause of blindness in middle-income and low-income countries. The number of people visually impaired from infectious diseases has reduced a lot in the last 20 years according to global estimates work and 80 per cent of all visual impairment can now be prevented or cured. (WHO, 2014). Globally, more than 80% of all blindness occurs in people above 50 years and 75% - 80% of all blindness is avoidable. This means that it can either be treated (refractive error, cataract, and uncorrected aphakia) or prevented (trachoma, corneal scarring, some causes of childhood blindness, onchocerciasis, and to a certain extent glaucoma and diabetic retinopathy).

Looking at the global distribution of avoidable blindness based on the population in each of the WHO regions, the prevalence rate of blindness are : South East Asian 28%, Western Pacific 26%, African 16.6%, Eastern Mediterranean 10%, the American 9.6%, and European 9.6%. In addition to uncorrected refractive errors, other six diseases or groups of diseases which have effective known strategies for their make up the targets of the WHO Global Initiative to Eliminate Avoidable Blindness, "VISION 2020: The Right to Sight", which aims to eliminate these causes as a public health problem by the year 2020. Cataract, onchocerciasis, and trachoma are the principal diseases for which world strategies and programmes have been developed. For glaucoma, diabetic retinopathy, uncorrected refractive errors, and childhood blindness (except for xerophthalmia), the development of screening and management strategies for use at the primary care level is ongoing at WHO. Globally the major causes of visual impairment are uncorrected refractive errors (myopia, hyperopia or astigmatism), 43 % un-operated cataract, 33% and glaucoma, 2%.

National Programme for Control of Blindness (NPCB) was launched in the year 1976 as a hundred percent centrally sponsored scheme with the goal to reduce the prevalence of blindness. However, despite all such efforts by the Government, prevalence of blindness is still high in India, especially among the poor population residing in urban slums and rural areas. One of the objectives of NPCB was “to enhance community awareness on eye care”. This could have been possible by laying adequate stress on preventive measures, but not much has been achieved in this context and is evident by the high prevalence rate which denotes failure to disseminate knowledge and convert knowledge to practice.

AIM:

To Study Knowledge, Attitude and Practices regarding Eye Health Care and Willingness to Pay for spectacles among the Slums population of Chandigarh.

RESEARCH QUESTIONS:

The key research questions are as follows:

1. What are the attitude and practices around eye care in slum dwelling communities:
What are the main reasons for consulting, where do patients go and why? What is the perceived advantage of each type of facility?
2. What are the various visual impairments and their causes in urban (poor) communities?
3. What is the willingness-to-pay (WTP) for spectacles among slum dwellers?
4. What are the characteristics of health providers delivering services to slum communities?

OBJECTIVES:

1. To assess the knowledge, attitude and practices related to eye health among slum-dwellers.
2. To assess the causes of avoidable blindness and visual impairment as per people's perception in slum population near Chandigarh.
3. To assess slum-dwellers capacity and willingness to pay for spectacles.
4. To collect information on health providers that are delivering eye care services to slum communities.

REVIEW OF LITERATURE:

According to NPCB Pilot Survey 2001-2002, the major blinding conditions in above 50 year population are Cataract (62.6%), uncorrected refractive errors (19.7%), corneal opacity (0.9%), Glaucoma (5.8%), Posterior segment disorder (4.7%) and surgical complications (1.2%), Posterior capsular Opacification (0.9%) and Others (4.1%)(1). In children of 5-15 years of age the visual impairment is 6.4% and major cause of which is refractive error (81.7%)(2). In one study by Padhya et al; 5,021 children of 8 urban clusters and 7,401 children of 28 rural clusters were chosen. The cluster-weighted prevalence of uncorrected refractive error in urban and rural children was 5.46% (95% CI, 5.44-5.48) and 2.63% (95% CI, 2.62-2.64), respectively. Hence, could be concluded, that the prevalence of uncorrected refractive error, especially myopia, was higher in urban children (3). According to another study in 2007 in 16 districts in India, cataract accounts for just less than 80% of blindness in the age group 50 years and above. The same study indicates that refractive error accounts for over 30% of visual impairment in that age group (4).

Most of the studies on eye healthcare have been conducted in the rural areas. Eye health in urban slums has been less delved due to the perception that service availability in urban areas is better than in rural areas. Despite the fact availability of eye care services is less problematic in urban areas; these services are not necessarily accessible, particularly for marginalized population such as urban slum dwellers and/or the urban poor. (3)

In a study conducted in 5150 subjects aged 40 years and older selected through a random cluster sampling technique from three districts in southern India (72.7%) of 5150 subjects

examined required eye care examinations. 35.5% people gave a history of previous eye examinations, primarily from a general hospital (58.7%). Increasing age and education were associated with increased utilisation of eye care services. Among the 3323 people who had never sought eye care, (27.4%) had felt the need to have an eye examination but did not do so. Only one third of individuals with vision impairment, cataracts, refractive errors, and glaucoma had previously utilised services (5).

In a study carried out in slums in Delhi as part of Sightsavers vision Delhi project, it was found that the prevalence of visual impairment was 11.4 percent and blindness prevalence was 1.2 percent among respondents aged 40+. Uncorrected refractive error was the leading cause of visual impairment (53.4 percent) followed by cataract (33.8 percent). Another study indicates that visual impairment in 2010 is a major health issue that is unequally distributed among the WHO regions; the preventable causes are as high as 80% of the total global burden. (6) Visual impairment was found to increase with age and illiteracy (Vashisth P. et al, 2015) (7-8).

In another study conducted in slums of Bangladesh it was found that the Health-seeking behaviour of the respondents was such that almost half (49%) of survey respondents self-reported an eye problem at the time of the survey. The most common complaints were poor vision (61.5%); allergy or infection (43.7%) and watery eyes (27.6%). The majority (75.9%) reported doing nothing when first experiencing the problem. Those who eventually sought care did so from specialist practitioners in government, private or NGO hospitals (78.1%). Around 38% sought no care at all; the main reasons being financial constraints (45%), not taking the problem seriously (31%) and lack of time (16%). Women and those with formal education were more likely to seek care ($p < 0.05$) (9)

Hence the study aims to assess the existence of various types of visual impairment and KAP among the residents of slums and contribute to the knowledge bank of the existing eye healthcare practices in the slums near Chandigarh.

RESEARCH METHODOLOGY:

Study Design: Descriptive, Cross-sectional study

Study Population: Slums in Chandigarh

Study Period: 3 months (February 2016- April 2016)

Sample Size: Assuming prevalence rate of refractive errors in city at 25.5% (10)

$$n = \frac{Z^2 pq}{e^2}$$

Where: Z=1.96

P (prevalence) = 0.255

q=1-p =1-0.25=0.75

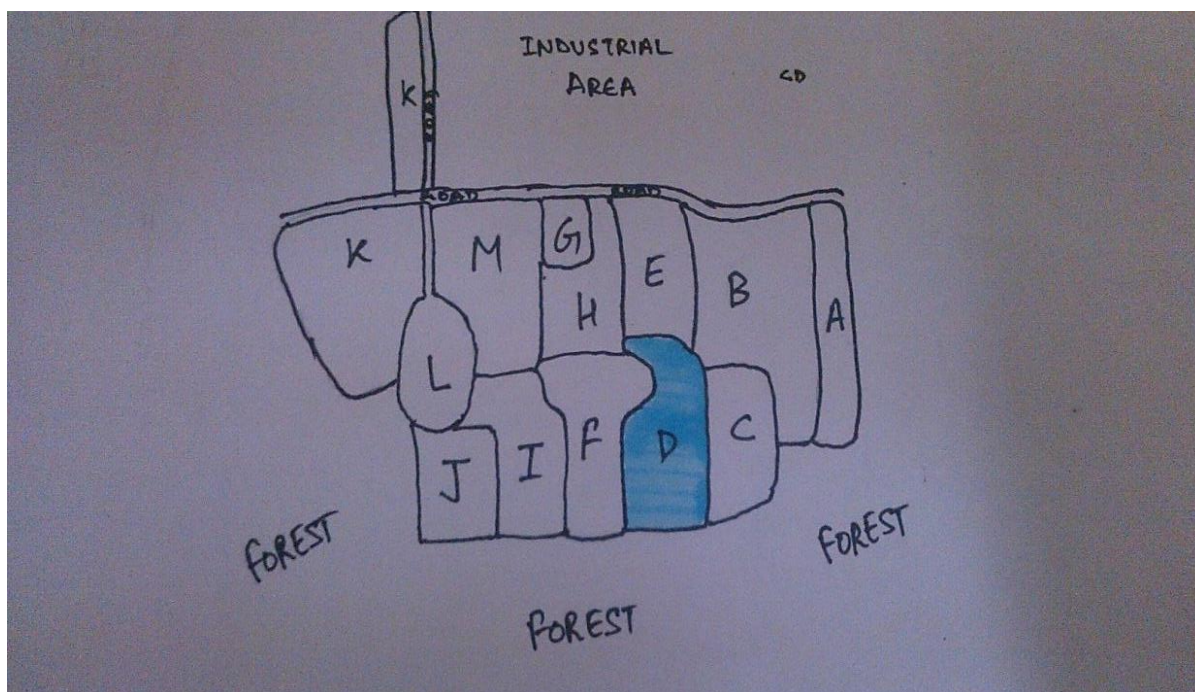
e (precision)= 0.05 and No response error= 10%

Size is calculated as = 292+29= 321

Sampling technique: Multistage Sampling Technique was adopted.

1. The slum was identified from a total of four major slums which were available till 2013 i.e. colony no. 5, Sector 52 (Janta colony, Nehru colony, Pandit colony, Adarsh Colony), Bapu Dham Colony and Colony no.4 (Industrial Area). Out of these three had been demolished and the residents have been rehabilitated to one bedroom apartments. Therefore, colony no. 4 with a population size of over 20,000 has been selected for data collection.
2. The selected slum has been divided into 12 blocks/segments as shown in the map 1, taken from its Civil Dispensary- CITCO. Each block/segment houses 300-350 households.
3. Lottery method was used to randomly choose a block/segment. (Block D)
4. Right hand rule was adopted to cover 321 households.

Map 1. Map showing various blocks/segments of Colony no. 4



Method of Data Collection:

Data collection for the household survey, facility were conducted in person using the following data collection tools:

- A pretested structured questionnaire for the household survey (Annexure I)
- A pretested structured Questionnaire for facility survey (Annexure II).

Household survey was done on the basis of availability of respondent preferably 18 years and above, from the selected households of Colony No.4, Chandigarh.

Facility survey was conducted in most popular public and private eye care providers randomly selected in the city preferably conducted with the facility owners/ staff of the facility. Other information pertaining to eye care providing facilities was collected using search engines from the websites of the facilities. The questionnaire formed the basis for collection of maximum information as possible.

Ethical Considerations:

The objectives of the study were explained to the respondents prior to interviews being conducted. Verbal consent was obtained from each respondent after clarifying the confidentiality and voluntary participation features of the study.

Similarly, staff or facility owners were explained about the study, and its objectives and verbal consent was sought before taking information on the facility as much as was possible and provided.

Data Entry and Analysis:

The data was entered and analyzed in SPSS version 16.0. Proportions of respondents on various variables were calculated at 95 percent Confidence Interval and Precision at 5 percent. Quantitative data was first analyzed by descriptive analysis and presented as frequency and percentage. In order to check significant associations between independent variables such as age, educational qualification, gender, marital status, with the dependent variables such as knowledge, health seeking behavior and willingness to pay; P value and Chi-square statistical analysis was used.

RESULTS:

Socio-Demographic and Economic Profile of Respondents:

TABLE 1.1 Socio-Demographic and Economic Profile of respondents in slum in Chandigarh. (N=321)

FEATURE	NUMBER (N)	PERCENTAGE (%)
1. GENDER		
Male	97	30.2
Female	224	69.8
Total	321	100.0
2. AGE		
18 TO 29 years	122	38
30 to 39 years	100	31.2
40 to 49 years	53	16.5
50 to 59 years	28	8.7
60 years and above	18	5.6
Total	321	100.0
3. EDUCATIONAL STATUS		
Illiterate	142	44.2
Below primary education	9	2.8
Primary education	36	11.2
Middle education	39	12.1
Secondary education	43	13.4
SSC/HSC equivalent	35	10.9
Graduate	15	4.7
Diploma/Certificate	12	0.6
4. RELIGION		
Hindu	295	91.9
Muslim	22	6.9
Others	4	1.2
Total	321	100.0

1.1 Table1.1 continued1.1

5. OCCUPATIONAL STATUS		
Salaried	48	15.0
Daily Laborer	28	8.7
Self employed	26	8.1
Not paid	219	68.2
Total	321	100.0
6. MONTHLY FAMILY INCOME		
Rs 5000 and Below	133	41.4
Rs 5000- Rs 10,000	165	51.4
Rs10,001- Rs 15,000	15	4.7
RS 15,001- Rs 20,000	5	1.6
Rs 20,000 and above	3	0.9
Total	321	100.0

As depicted in table 1.1, almost 70 percent of the respondents who participated in the survey (N=321) were female. The mean age of slum dwellers of Colony no. 4, was 34 (SD± 12) with around two-fifth (38 percent) in the age group of 18-29 years followed by one-third (31.2. percent) respondents in the age group of 30-39 years. Forty four percent of the respondents were illiterate with only 11 percent, 12 percent and 13 percent of the respondents having received primary, middle and secondary level education respectively. Majority (92 percent) of the respondents belonged to Hindu religion. More than two-third (68.2 percent) of the respondents, were not earning and were dependent on their spouses financially. The mean monthly household income was Rs 6,992 for the respondents.

Knowledge, Attitude and Practices regarding common Eye care problem(s):

Table 1.2 Awareness regarding eye health problem(s)/disease(s) among the respondents in slum in Chandigarh (N=321)

Knowledge Regarding Eye Health/ Disease	Number (N)	Percentage (%)
Yes	202	62.9
No	119	37.1
Total	321	100.0

Table 1.3 List of Most common eye health problem heard by respondents in slum in Chandigarh (N=202)

Most Common Eye Health Problem	Number (N)	Percentage (%)
Redness	25	12.4
Abnormal eye secretion	34	16.8
Blurred Vision	109	54.0
Pain	22	10.9
Itching	11	5.4
Others	1	0.5
Total	202	100.0

Table 1.2 shows major findings regarding awareness about eye health problem(s)/diseases(s), with less than two-third (62.9 percent) of the respondents stating as having knowledge of at least one eye problem/disease with blurred vision being the most common one (54 percent), followed by abnormal eye secretions (17 percent) and Redness (12 percent) as reflected in table 1.3.

Table 1.4 List of source of Information for the respondents who had heard about eye problem (s) in slum in Chandigarh. (N=202)

Source	Number (N)	Percentage (%)
Family/ Friends	144	71.3
Community Health Worker	20	9.9
Pamphlet/ brochure	1	0.5
TV/Radio	32	15.8
Newspaper	3	1.5
Other	2	1.0
Total	202	100.0

Table 1.4 enlists the main source of information for those who had heard about eye problem(s) as family or friends for 71.3 percent followed by TV/ Radio for 15.8 percent, with pamphlet and brochure being the least informative.

More than three-fourth (78 percent) of the respondents knew where to avail eye healthcare services when in need and 88 percent cited various government setups that provide eye healthcare services. Least was known about charitable clinics (one percent).

Table 1.5 Most probable causes of eye problem as perceived by respondents in the slum in Chandigarh (N=321)

Causes	Number (N)	Percentage (%)
Unhygienic Conditions	79	24.6
Unbalanced Diet	28	8.7
Age	65	20.2
Infection	33	10.3
Straining of eyes	43	13.4
Others	63	19.6
Don't Know	10	3.1
Total	321	100.0

As far as most probable cause of eye problem(s) was concerned, one-fourth (25 percent) agreed to unhygienic conditions to be the cause, followed by increasing age cited by one-

fifth (20 percent) of the respondents, straining of eyes by 13 percent and infection by 10 percent as shown in table 1.5 Around three percent did not know about the cause for the same. Eighty seven percent of the respondents were of the view that eye health problem(s) can be prevented by maintaining cleanliness, regular hand hygiene and balanced diet.

Health seeking behavior of the Respondents:

Around 98 percent of the respondents were willing to seek healthcare service when in need and 38 percent did feel the need to avail the eye care services and had visited some or the other provider within the past year (28.7 percent) as compared to 13.1 percent who visited within the past month. Of those who felt the need to seek consultation from an eye care service provider, less than one-third (29 percent) of the respondents did not go.

Table 1.6 Reasons for not visiting eye care facility by respondents who recently felt the need in slum in Chandigarh (N=35)

Reason for not visiting eye care facility	Number (N)	Percentage (%)
Wait and watch	8	22.9
No willing to pay	4	11.4
Other priorities for spending	6	17.1
Not legible to make decision	1	2.9
No one to accompany	6	17.1
No time	10	28.6
Total	35	100.0

Table 1.6 reflects the reasons as stated by respondents for not going as: no time to go for 28.6 percent, followed by 22.9 percent willing to wait and watch for the condition to progress, 17.1 percent having other priorities for spending money and 2.9 percent not legible to make decision.

Table 1.7 Most recent Service facility visited and most common reasons for choosing the eye care service provider by respondents who recently felt the need in slum in Chandigarh. (N=87)

Service Facility Visited	Number (N)	Percentage (%)
Government Facility	64	73.6
Private hospital	9	10.3
Charitable Clinic	4	4.6
Optical shop	2	2.3
Pharmacy	2	2.3
Other	6	6.9
Total	87	100.0
Reason for visiting	Number (N)	Percentage (%)
Nearness to house	19	21.8
Easy to access	5	5.7
Good attitude of provider	2	2.3
Less waiting time	3	3.4
Trustworthy and acquaintance	1	1.1
Availability of Medicine	3	3.4
Free or Low cost service	43	49.4
Good quality of care	10	11.5
Other	1	1.1
Total	87	100.0

Out of those 122 respondents, those who visited any facility, majority (74 percent) went to government hospital and least went to optical shop (around two percent) owing to availability of free or low cost service (49 percent), followed by nearness to house (22 percent). Least important factor while seeking service was acquaintances or trustworthiness of the provider (one percent) as shown in table 1.7

Table 1.8 Attitude and Behaviour towards preventive eye care among respondents of slum in Chandigarh.

Which one is more effective?	Number (N)	Percentage (%)
Preventive Care	265	82.6
Curative Care	56	17.4
Total	321	100.0
Follow Prevention	Number (N)	Percentage (%)
Yes	187	58.3
No	134	41.7
Total	321	100.0
Preventive Measures followed	Number (N)	Percentage (%)
Regular hand hygiene	29	15.5
Nutritious Diet	23	12.3
Cleanliness and Hygiene	113	60.4
Regular eye checkups	1	0.5
Corrective action at initial stage	13	7.0
Others	8	4.3
Total	187	100.0

In table 1.8, though it is shown that more than four-fifth (82.6 percent) of the respondents believed that preventive care was more effective than curative care, however only 58 percent followed at least one preventive measure. Further analysis shows, that out of the 187 respondents who followed preventive measures, around 60 percent tried to maintain cleanliness and hygiene and least went for preventive eye checkups (one percent).

Willingness and Capacity to pay:

Around 89 percent of the 321 respondents were willing to wear spectacles if need be arises. And for those willing to pay for the spectacles, mean paying capacity of 284 respondents was Rs 595, while 37 of them did not know how much they would pay depending on need and availability of funds.

Around 58 percent of the respondents stated that it would be somewhat difficult for them to pay for the treatment (spectacles in this case), and two-third (66 percent) of the respondents would have to arrange from their monthly income or reduce household consumption for some time for around one-fifth (19 percent) of the respondents or manage from their savings (nine percent). Only two percent said that they would have to borrow from lenders to pay.

For majority of the respondents (41 percent), their husbands were responsible for taking decision for spending money on their treatment and according to 99 percent they were sure, would be willing to pay for the treatment.

Significant Associations between Socio-Demographic and Economic Variables and Knowledge, Attitudes and Practices regarding Eye Health

The empirical data was subjected to Chi square Test of Association to investigate significant associations between socio-demographic and economic variables and Knowledge, Attitudes and Practices regarding Eye Health.

Table 1.9 Significant Association between few independent variables and knowledge about any eye health problem/disease.

Variable	Knowledge about any Eye Health Problem /Disease		p-value
	Yes	No	
Marital Status			0.000
Currently Married	162	103	
Widow/widower	0	7	
Divorced/Separated	2	0	
Single (Never Married)	38	9	
Educational Status			0.013
Illiterate	79	63	
Below Primary	4	5	
Primary	25	11	
Middle	22	17	
Secondary	30	13	
Higher Secondary	31	4	
Undergraduate	9	6	
Diploma/certificate	2	0	
Employment Status			
Salaried	28	20	

Table 1.9 Continued...

Variable	Knowledge about any Eye Health Problem /Disease		p-value
	Yes	No	
Daily Laborer	21	7	0.040
Self-Employed	22	4	
Not Paid	131	88	

Socio demographic variables like marital status, educational status, employment status, showed statistically significant association (at $p < 0.05$) with exposure to knowledge about any eye health problem / diseases. The p values at five percent level of significance are reflected in table 1.9

Table 1.10 Associations between few independent variables and recently felt need to avail eye health service.

Variable	Recently felt need to avail eye health service		p- value
	Yes	No	
Marital Status			0.046
Currently Married	105	160	
Widow/widower	5	2	
Divorced/Separated	1	1	
Single (Never Married)	11	36	
Age			0.000
18 TO 29 years	25	97	
30 to 39 years	37	63	
40 to 49 years	32	21	
50 to 59 years	17	11	
60 years and above	11	7	

Table 1.10 continued...

Variable	Recently felt need to avail eye health service		p- value
	Yes	No	
Monthly Income			0.05
Rs 5000 and Below	62	71	
Rs 5000- Rs 10,000	50	115	
Rs10,001- Rs 15,000	6	9	
RS 15,001- Rs 20,000	3	2	
Rs 20,000 and above	1	2	

Table 1.10, reflects the positive associations ($p < 0.05$) between certain independent factors such as age, marital status and income and the recently felt need to avail eye care service.

Similarly an approaching significance ($p = 0.053$) can be found between the increasing age of the respondent and theirs following of preventive measures for eye care.

Table 1.11 Association between gender and willingness to pay for preventive and corrective measures.

Variable	Willingness to pay for preventive and corrective measures.		p- value
	Yes	No	
Gender			0.032
Male	96	1	
Female	209	15	

Another significant association can be found between gender and the willingness to pay for preventive and corrective measures as shown in the table 1.11

Table 1.12 Association between monthly income and the decision makers' willingness to pay for treatment.

Variable	Decision maker willing to pay for the treatment		p- value
	Yes	No	
Monthly Income			0.008
Rs 5000 and Below	132	0	
Rs 5000- Rs 10,000	163	0	
Rs10,001- Rs 15,000	14	1	
RS 15,001- Rs 20,000	5	0	
Rs 20,000 and above	3	0	

Table 1.12 shows that one of the deterrent factors for the decision maker to be willing to pay for the treatment of respondent is family income and has been shown to be highly significant (0.008).

Healthcare Providers in Chandigarh:

Chandigarh is a small city of 114 square km area, divided into sectors and has a mix of public and private eye care providers in the city spread in different sectors.

Two main tertiary care hospitals in the city are Government Medical College and Hospital, Sector-32, and PGIMER that fall under the public ownership domain.

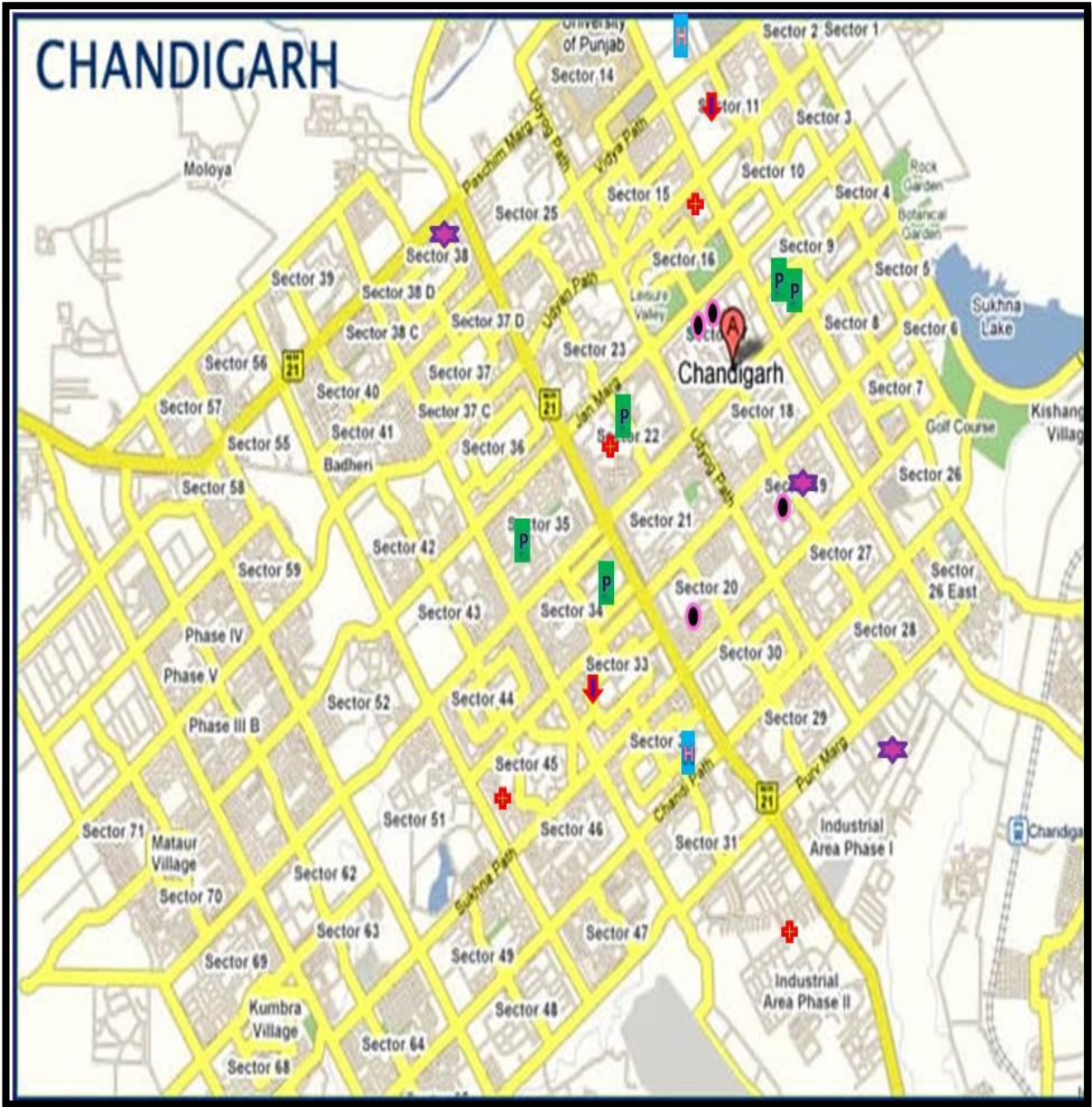
Secondary Hospitals are five in number where mostly OPD consultations and minor eye care procedures are carried.

26 Civil Dispensaries are functional, with referral services and only three providing refraction services. One CD, Sector-19 is exclusively devoted to School children, where under NPCB, spectacles are given to those in need, free of cost. From February 2016 onwards, around 500 spectacles have been distributed among school children although on an average 80 spectacles per month are provided.

A total fund of Rs 25 Lakhs was allocated in the ROP of 2015-16 to NPCB, whereas expenditure till Dec'15 was Rs 26.73 Lakhs. The major share of the budget is used for the up gradation and maintenance of facilities and rest is the remuneration of staff employed. Due to shortage of funds, free spectacles scheme for school children was discontinued and has resumed very recently. The proposed budget for 2016-2017 is Rs113.38 lakhs, under which most bills are to be covered for assistance for cataract surgery, free spectacles for children and old persons, reimbursements to eyeball donors and setting up eye donation centre.

Major private players are four in number, all operating for profit and located in central Chandigarh, located in adjacent sectors. All specialized services are provided and they do have provisions of free or low cost treatment for the needy. Half of them carry out fortnightly or monthly eye camps in slum or rural areas and sponsor few needy patients for the entire cost of treatment. Three fourth of them do provide services under government Healthcare plans (e.g CGHS/ ECHS/ESIS). All of them have tie-ups with TPAs or Private Health insurance. Major source of their facility income is from Patient fees (OOP expenditure). Most operate six days a week, both during morning hours and evening hours dealing with OPD Consults and surgeries daily. They have inbuilt or either outsourced optical shops and pharmacy in their centers. All are day care centers and do not have laboratory services. Most eye care centers, function with one ophthalmologist to a maximum of 11 in one of the centres. Minimum Consultation charges are Rs 400, although subsidized rates of Rs 100-200 are also provided for poor and needy. Minimum cost of Spectacles is Rs 250 and for Cataract Surgery is Rs 5000.

Map 2. Map of Chandigarh showing Public and Private eye care facilities.



Map source: www.topnews.in:

Key

	Civil Hospital
	Civil Dispensary
	Tertiary Healthcare centre
	Optical Shops with optometrist
	Specialized Private Eye care facility
	General Private Eye care facility

MAJOR FINDINGS:

- Around three-fifth (62.9 percent) of the respondents had heard about at least one eye care problem/disease.
- Most commonly heard eye problem was blurred vision in around 54 percent.
- More than two-third respondents (71.3 percent) got the information regarding eye care from their family/ friends
- Seventy eight percent knew where to avail eye care service and most popular was government setup in more than four-fifth of the respondents.
- Main reason for choosing eye care service at government facility was availability of free or low cost service for 49 percent.
- One-fourth (25 percent) of the respondents believed that unhygienic conditions cause eye problem(s)/disease(s).
- Of those who recently felt the need to seek consultation for eye care problem, 29 percent did not go, stating no time to visit the facility (29 percent).
- The mean paying capacity for 89 percent respondents willing to pay for corrective measure like a spectacle was Rs 595, making it somewhat difficult for more than half to arrange the money.
- Socio demographic variables like marital status, educational status, employment status, showed statistically significant association (at $p < 0.05$) with exposure to knowledge about any eye health problem / diseases.
- There is a positive association $p < 0.05$ seen between certain independent factors such as age, marital status and income and the recently felt need to avail eye care service
- It can also be seen that one of the deterrent factors for the decision maker to be willing to pay for the treatment of respondent is family income and has been shown to be highly significant (0.008).
- Government providers share the major burden of slum dwellers mainly due to easy accessibility and affordability.
- Private providers do organize camps as their social responsibility but sponsor a few patients only.

DISCUSSION:

As is evident from the above findings, majority of the slum dwellers are in their mid thirties and have migrated from nearby states in search of work. Majority of the females are illiterate and confined to home to do household chores, hence mostly dependent on their husbands for providing or approving them of seeking healthcare services. The monthly family income is an important decision making factor for willingness to seek healthcare services, be it eye or any other. Education is another limiting factor for creating self-awareness among masses, to seek healthcare service and not to procrastinate doing the same for their as well as their families benefit. An approaching significance can be seen with age and following of preventive measures.

As far as eye care service providers are concerned, government setups offering treatment at no or low cost, are most popular among slum dwellers. Private providers do provide sponsored services but for a handful of patients as part of their Social Responsibility activity. The government hospitals offering specialized eye care are although limited in number, with the burden ultimately lying on a two tertiary care, whereas private providers are many. There is a drastic difference between the rates of the services provided at public and private eye care service providers; hence affordability becomes an issue for slum dwellers while accessing/availing services at private players.

CONCLUSION:

This study provides a valuable insight into the demand and provision of eye healthcare services among slum-dwellers in Chandigarh. The study shows that there is somewhat a high proportion of awareness regarding ocular morbidities in slum population, and residents would benefit from affordable & accessible eye care services. Most of the respondents learn about various causes, preventions and treatments from their surroundings and are affected by their opinions. The demand for service is low and constrained by certain factors, such as knowledge and education, costs of services and prioritizing health over other issues. It is also clear that the lack of awareness and low priority given to eye care are important influential factors regarding health seeking behaviour of slum-dwellers. This study also shows that slum-dwellers are a homogeneous community, migrated in search for a livelihood. WTP for spectacles shows that slum-dwellers are willing to pay for the spectacles depending upon their economic condition and urgency for these. There is an unequal distribution of services among private and public setup. The high number of specialized eye care private for profit providers have an impact on access to eye healthcare services for the urban poor by decreasing affordability.

SUGGESTIONS:

In view of the results obtained from the study, it can be reasonably suggested that:

- More emphasis needs to be given to awareness campaigns and changing behaviour/attitudes in order to increase adoption of preventive measures and service uptake in case of need.
- A PPP between would prove to be beneficial to provide low cost treatment and spectacles for the urban poor and needs to be looked upon. However, a full proof mechanism is needed to identify the real needy and enable them to avail eye healthcare services. For this a wide array of different stakeholders directly and indirectly involved in providing eye care services would be needed.
- There is a need to assure that correct information reaches the masses and they should benefit from the services made available by public and private eye care providers equally. Robust campaigning needs to be undertaken, to bring in line the people's perception with the reality. For this involvement of community based organisations can prove helpful as they have an easy acceptability and access in the community.
- The WTP for spectacles shows the willingness of the community members to pay for their health based needs. Hence, a provision of corrective measures (e.g. spectacles) at bare minimum cost should be made available. But a mechanism to filter real needy from those misusing the services needs to be developed.
- Interventions at multiple levels would help in reaching out the neglected masses, this could be achieved with the help of NGOs and public, private facilities.
- Programmes and policies should such be framed keeping in mind the need and provision of eye care services available to masses. Separate budget heads to counter avoidable blindness will help such as provision of low cost corrective measures like spectacles for adults as well.
- At risk populations need to be taken special care of, such as regular check ups for diabetic, old aged, children and slum communities.

CHALLENGES:

There were various underlying challenges faced while conducting the study:

1. There had been some difficulties in accessing the survey participants. The households in the slum were mostly locked during day hours as the participants with jobs were away.
2. Interviewing respondents from randomly selected household was also a challenge, mainly because of their availability and /or gaining their consent to be interviewed.
3. Multiple visits had to be made to the slums for collection of data.
4. The survey was sometimes misinterpreted as a door to door eye care consultation.
5. The information from the private facilities was obtained only after long waiting hours due to rush in the setup and for someone to take aside some time for answering the questions.
6. It was difficult to convince the facility owners to provide complete information owing to their insecurities.

SNEAK PEAK IN THE COLONY NO. 4, CHANDIGARH







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ANNEXURE I

QUESTIONNAIRE FOR RAPID ASSESSMENT OF KAP REGARDING EYE HEALTHCARE

IDENTIFICATION

Household no. _____

Name of the Respondent _____

Address _____

Date of Interview ____/____/____ Day _____

Timings:

Start of Interview _____

End of Interview _____

INFORMED CONSENT:

Namaste, My name is Harsheen Sethi. I am a student of IIHMR University, Jaipur. As part of my curriculum I am conducting a survey related to eye healthcare. I would like to know the level of your Knowledge, attitude and practices related to eye healthcare. There is no benefit attached for your participation. The interview will take about 10-15 minutes. I assure you that the responses shall be kept confidential and will not be shared with anyone except for data analysis.

You can take part in the survey as per your own will. If you do not want to answer any question, you can refuse and you can end the interview any moment you wish to.

Do you need any further clarification?

May I begin with the interview?

Yes _____ (Begin asking the questions)

No _____ (Move to next household/respondent)

A.RESPONDENTS'S CHARACTERISTICS

S No.	Questions	Coding	Skip
A1	Gender of the respondent	Male ____ Female ____	
A2	What was your age at your last birthday?		
A3	Marital Status	a) Currently married b) Widow/widower c) Divorced/separated/deserted d) Never married	
A4	What is highest educational qualification attained?	a) Below primary b) Primary c) Middle d) Secondary e) Hr. secondary/sr. secondary	

		f) Graduate g) Post-graduate h) Diploma/Certificate i) Illiterate	
A5	What is your religion?	a) Hindu b) Muslim c) Sikh d) Christian e) Jain f) Buddhism g) Others	
A6	Caste	a) General b) SC c) ST d) OBC e) Others	
A7	What is your employment status?	a) Salaried b) Daily Labourer c) Self employed d) Not paid e) Contract f) Other	
A8	How much do you earn per month as an individual and as a household? (Indicate ranges)	Individual _____ Household _____	

B. KNOWLEDGE

S no.	Questions	Coding	Skip
B1	Have you heard of eye health problem(s) or eye disease(s)?	a) Yes b) No	Skip to B3
B2	What is most common eye health problem(s) have you heard of?	a) Redness b) Abnormal eye secretions c) Blurred vision d) Pain e) Itching f) Others_____	
B3	How did you come across information about eye health or eye disease(s)? (select just one)	a) Family/Friends b) Community Health worker c) Pamphlet/brochure d) TV/radio e) Newspaper f) Other_____	
B4	Do you know where to avail the health services in case of eye health issue with you or your family member?	a) Yes b) No	Skip to B5
B5	Where can you avail the services?	a) Government Medical college	

		b) Government Hospital c) Government Health Post d) Private Medical College e) Private Hospital f) NGO Hospital/Clinic g) Optical Shop h) Pharmacy i) Eye Camp j) Community Health worker k) Registered Medical practitioner l) Unqualified Health provider m) Other_____	
B6	What according to you is the most probable cause for preventable eye health issues?	a) Unhygienic conditions b) Unbalanced diet c) Age d) Infection e) Straining of eyes f) Others_____ g) Don't Know	
B7	Do you think the eye health issues can be prevented?	a) Yes b) No c) Don't Know	(if no then Skip to Section C)
B8	Can the underlying help prevent eye health problems? a) Maintaining cleanliness and hygiene b) Regular hand washing with soap and water c) Avoid rubbing eyes with dirty hands d) Nutritious diet	a)Yes c) Don't Know b)No a)Yes c) Don't Know b)No a)Yes c) Don't Know b)No a)Yes c) Don't Know b)No	

C. ATTITUDE:

S no.	Question	Coding	Skip
C1	Would you be willing to avail eye healthcare services when in need?	a)Yes b)No	Skip to C8
C2	Have you recently felt the need to avail the eye healthcare services?	a)Yes b)No	Skip to C7
C3	What was the main reason for availing services?	a) Red eye b) Pain in the eye c) Problem failed to resolve d) Problem perceived urgent e) Gradual change in vision f) Sudden change in vision g) Trauma/accident h) Others	
C4	When was the last time you availed the eye healthcare services?	a) Within past month b) Within past year	

		c) More than one year ago d) Don't remember e) Did not show	
C5	Where do you avail the services?	a) Government Medical college b) Government Hospital c) Government Health Post d) Private Medical College e) Private Hospital f) NGO Hospital/Clinic g) Optical Shop h) Pharmacy i) Eye Camp j) Community Health worker k) Registered Medical practitioner l) Unqualified Health provider m) Other	
C6	What was the main reason for choosing that provider? (mark only one)	a) Near my house b) Easy to access anytime c) Good attitude of provider d) Less waiting time e) Trust and acquaintances f) Medicine Availability g) Availability of free or low cost services h) Can pay later i) Quality of care j) Other	
C7	How did you find the services that you availed?	a) Satisfactory b) Dissatisfactory c) Delighted	
C8	Why did/would you not seek the services when in need?	a) Wait to see what happens b) Not willing to pay c) Other priorities for spending money d) Not my decision to make e) Need to work/earn money f) Don't know where to go g) Too far from home/work place h) No person to company i) Fear of examination j) Self-treatment k) No time l) Waiting for eye camp m) Others	
C9	Which one is more effective?	a) Preventive Care b) Curative Care	

D. PRACTICE AND WTP

S no.	Question	Coding	Skip
D1	Do you follow any preventive measures?	a) Yes b) No	Skip to D3
D2	Which preventive measures do you follow?	a) Regular hand hygiene b) Nutritious diet c) Cleanliness and Hygiene d) Regular eye checkups e) Corrective action at initial stage f) Others _____	
D3	Would you be willing to wear spectacles as a corrective measure to improve your vision?	a)Yes b) No c)Can't Say	
D4	Where would you prefer to go to seek eye healthcare services in case of a need?	a) Government Hospital/clinic/Health post b) NGO Hospital/ Clinic c) Private Hospital/ Clinic d) Doctor's Practice e) Optical Shop f) Pharmacy g) Eye Camp	
D5	Would you be willing to pay for preventive and corrective measures?	a) Yes b) No	
D6	What is the highest amount you are willing to pay for treatment (e.g spectacles)?	a)_____ INR b)Don't know	
D7	How difficult/easy would it be for you to pay that amount based on your income?	a) Very Easy b) Somewhat easy c) Somewhat difficult d) Very difficult e) Impossible	
D8	Which strategy would you use to cope with such expenditure if you had to pay that amount today?	a) Income from this month b) Savings c) Reduce consumption d) Borrow _____ from relatives/friends e) Borrow from lenders f) Sell household asset	
D9	Who is the decision maker in the family?	a) Self b) Husband c) Others _____	
D10	Would the decision maker be willing to pay for the treatment (e.g. spectacles)?	a) Yes b) No c) Don't know	

THANK YOU

ANNEXURE II

EYE HEALTHCARE FACILITY INFORMATION

FACILITY DETAILS (TO BE COMPLETED FOR ALL FACILITIES)	
Name of the facility:	
Postal address of the facility:	
House/plot#:	Road#:
Area Name:	
Postal Code:	
Type of Facility: ☐ Doctor's Chamber(s) ☐ Stand-alone Pharmacy ☐ Pharmacy with doctor's chamber(s) ☐ Stand-alone optic shop ☐ Optic shop with doctors's chamber(s) ☐ General clinic or hospital with eye health deptt. ☐ Specialized clinic or hospital (eye hospital) ☐ Medical college or teaching hospital/ tertiary care	Ownership ☐ Public ☐ Private (not for profit) ☐ Private (for profit) ☐ Other, specify _____
Service pattern: ☐ Daily Other: specify: _____ ☐ Weekly (number of days ____) ☐ Monthly (number of days ____) ☐ No fixed schedule	Operating hours (approx.)*: The timing may be approximated but aligned with the options ☐ 24 hours ☐ Morning (7am-1pm) ☐ Afternoon (1pm – 7pm) ☐ Evening (7pm – 12am) ☐ Night (12am-7am) ☐ Not applicable
Operating days:* ☐ All week ☐ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat ☐ Sun ☐ Variable	
Service provision*:	
☐ Outpatient services (OPD) ☐ Inpatient services (IPD) ☐ Surgery (OT) ☐ Screening and outreach services ☐ Pharmacy services ☐ Laboratory services	

EYE CARE SERVICES

1. PROVISION OF EYE CARE SERVICES:

OPHTHALMIC SERVICES	
Please indicate if the following ophthalmic sub-specialities are offered at the facility (tick boxes)*	
☐ Ophthalmic consultations ☐ Cataract services ☐ Optometry & low vision ☐ Glaucoma ☐ Cornea and refractive surgery	☐ Vitreo-retina & Uvea ☐ Oculoplasty ☐ Pediatric ophthalmology & Neuro ophthalmology ☐ Preventive ophthalmology & rehabilitation ☐ Eye bank/eye donation center
LIST OF SERVICES PROVIDED (BY CATEGORY) Please indicate which eye care services; pre-operative assessment and supporting investigations for eye patients are provide at facility (tick boxes)*	
Refractive error correction	
☐ Refraction ☐ Refractive surgery (laser)	☐ Spectacle/optical lens dispensing ☐ Spectacles/Lens finishing lab
Cataract surgeries:	
☐ Cataract surgery (Phacoemulsification) ☐ Cataract surgery (MSICS) ¹	☐ Paediatric cataract surgery ☐ Counseling (pre- & post- surgery) ☐ YAG laser capsulotomy
Other Surgeries	
Investigations & Imaging	

¹ MSICS: Manual Small Incision Cataract Surgery

2. FACILITY ACTIVITY (outputs)

ACTIVITY STATISTICS			
Please include facility outputs for a period of one year preceding the date of the survey (if possible). Please specify the exact period covered by the data.			
Statistics	Is this data collected by the hospital? (please tick box)	If yes, please indicate number here:	Period covered (months/years)
Outpatient			
No. of outpatient visits at hospital (total)	Yes ☐ No ☐		
No. of patients refracted	Yes ☐ No ☐		
No. of glasses dispensed	Yes ☐ No ☐		
Inpatient (OT)			
No. of surgeries performed (total)	Yes ☐ No ☐		
No. of cataract surgeries performed (total)	Yes ☐ No ☐		
No. of other surgeries performed (total)	Yes ☐ No ☐		
Inpatient (Ward)			
No. of hospital beds available (total)	Yes ☐ No ☐		
No. of hospital beds dedicated to eye patients	Yes ☐ No ☐		
No. of patients admitted in ward (total)	Yes ☐ No ☐		
No. of patients admitted in ward (Cataract only))	Yes ☐ No ☐		
No. of inpatient days of care (total)	Yes ☐ No ☐		
No. of bed days for admitted patients (cataract)	Yes ☐ No ☐		
Community screening & referrals			
No. of eye camps organized	Yes ☐ No ☐		
No. of schools visited	Yes ☐ No ☐		
Total number of days (eye camps)	Yes ☐ No ☐		
No. of patients screened (total)	Yes ☐ No ☐		
No. of refractive error patients referred	Yes ☐ No ☐		
No. of cataract patients referred	Yes ☐ No ☐		
No. of other patients referred	Yes ☐ No ☐		

3. HUMAN RESOURCES FOR EYE HEALTH (HReH)

This section aims to collect information on eye care staff working in the various eye department/units within the facility

EYE CARE STAFF INVENTORY

EYE HEALTH STAFF				
Please record all eye care specialist and paramedical staff working in the eye OPD, IPD and OT				
Staff category	No. of staff in this category (headcount)		No. of cumulative hours	
Medical officer/General Practitioner				
Ophthalmologist (posted as ophthalmologist)				
Ophthalmologist (posted as MO or others)				
Optometrist				
Ophthalmic assistants (OA)				
Paramedical Ophthalmic Assistants (PMOA)				
Ophthalmic nurse				
vision technician				
Optical fitter/Dispensing technicians				
Administrator				
Equipment/biomedical technician				
Eye bank Officers				
Spectacle sales				
Optical lab technician (manufacture)				
CATARACT SURGEONS				
Please provide details about staff performing cataract surgeries within the facility				
Surgeon's name (optional)	OPD (days per week)	OT (days/wk)	Admin tasks (days/wk)	Others (both clinical & non-clinical)

4. HEALTH FINANCING

This section aims to collect information on facility income sources and provisions made for poor patients

FACILITY INCOME SOURCES
What the different sources of facility income?*
☐ Patient fees (out-of-pocket expenditures) ☐ Government grants (central/state/district) ☐ Donations (NGO, private foundations, etc.) ☐ Health insurance schemes (public & private) ☐ Others, specify: _____
Are you providing services under any of these government health care plans?
☐ Rashtiya Swasthiya Bima Yojana (RSBY) [for below poverty line families] ☐ Central Government Health Scheme (CGHS) [for central government employees & families] ☐ Employment State Insurance Scheme (ESIS) [for regular employees and families] ☐ Universal Health Insurance Scheme (UHS) [for below poverty line families] ☐ State Health Insurance Programmes ² , specify: _____ ☐ Others, specify: _____
Are you working with any private health insurance or community health insurance schemes? Yes ☐ No ☐
If yes, please list companies/schemes here below:
PROVISION FOR POOR PATIENTS
Do you have any specific provisions for individuals who cannot afford to pay?*
☐ No specific provision ☐ Free services (for all patients) ☐ Free services (for indigent patients only) ☐ Reduced fees (third party sponsored, specify: _____) ☐ Reduced fees (cross-subsidies) ☐ Specific payment agreement (differed payment, by instalments, etc.) ☐ Micro-credit or loan facilities ☐ Others, specify: _____

* Multiple responses allowed

ANNEXES

Please also prepare collect the following information when visiting the health facility:

- ☐ Price list for all eye care services provided at facility (if available)
- ☐ Price range for spectacles sold within facility (if available)
