

To Assess the Impact of Existing Vision Centres on The
Population and Analyze Their Potential for Future
Expansion

By

Dipika Mondal

*Dissertation submitted in partial fulfillment of the requirements of the degree
MBA Hospital and Health Management*

Academic year, 2017-2019



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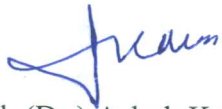
TO WHOMSOEVER MAY CONCERN

This is to certify that **Dipika Mondal**, student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at Sankara Eye Hospital, Coimbatore from 6th February to 5th May, 2019.

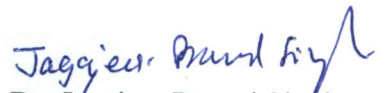
The Candidate has successfully carried out the study assigned to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

A handwritten signature in blue ink, appearing to read 'Ashok'.

Col. (Dr.) Ashok Kaushik
Dean (Academics and Students' Affairs)
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A handwritten signature in blue ink, appearing to read 'Jagajeet Prasad Singh'.

Dr. Jagajeet Prasad Singh
Associate Professor
The IIHMR University, Jaipur

15 May 2019



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INTERNSHIP COMPLETION CERTIFICATE

The certificate is awarded to

Dr. Dipika Mondal

In recognition of having successfully completed her
 Internship in the department of

Community Outreach

And has successfully completed her Project on

**“To Assess the Impact of Existing Vision Centres and Analyze their Potential for
 Future Expansion”**

Date: Feb 6th to May 5th, 2019

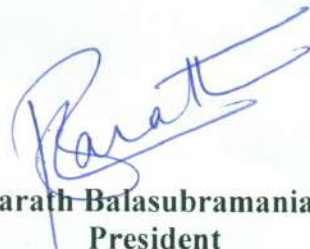
Organization: Sankara Eye Hospital, Coimbatore

She comes across as a committed, sincere & diligent person who has a
 strong drive and zeal for learning.

We wish her all the best for future endeavors.


Kowsik Krishnamoorthy
Manager
(Operations and Partner Relations)




Bharath Balasubramaniam
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled To assess the impact of existing Vision Centres on population and analyze their potential for future expansion and submitted by (Name) Dt. Dipika Mondal Enrollment No. IIHMR-U/01/2017-19/560 under the supervision of Dt. Jagajit Prasad Singh for award of MBA in Hospital and Health Management in Health and Hospitals of the University carried out during the period from 6th Feb to 5th May (2019) 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.

Dipika Mondal

Signature

A. Abstract:

Globally, it is estimated that roughly, around 1.3 billion individuals live with some sort of vision impairment and approximately, 80% of them are avoidable.

In terms of health, India is facing double “burden of disease” with communicable and non-communicable disease as well as it is known as “diabetes capital” and people are not only suffering from this but also with its associated risk. At the same time “out of pocket expenditure” is also a major concern for India which is around 89.21% for private expenditure on health. (2014, World Bank collection of development indicators)

In India alone, around 19 million people are blind or have any other visual defects. Out of this 19 million, 15 million population live in rural areas. Blindness has profound consequences on human and on the societies. The economic effects of visual impairment can be divided into ‘direct’ and ‘indirect costs’. The direct costs include treatment of eye diseases and medical treatment. The indirect costs include costs for visual aids, suffering and premature death that can result from permanent vision loss. Besides India is among the countries which suffers from a shortage of doctors with only twelve thousand ophthalmologists, with most concentrating their practice in urban area only.

Provision of effective eye care services is the only key for effectively controlling visual impairment for population who cannot reach to the tertiary eye care facility and at the same time it is also important to understand the impact of such eye care service provider (vision centres) working for rural population and analyze their potential for future expansion so that maximum needy population should get benefited from it to avoid preventable blindness. To understand the impact of vision centre, a study was conducted at Sankara Eye Hospital, Coimbatore and three objectives were chosen which were; to find out the enabling factors leading the success of Vision centre, to find out hinderance factors leading the Vision centre not achieving full success and to find out status of the Vision centre with regard to self-sufficient. It was an observational cross-sectional analytical study and for that 100 patients were selected for primary study which is in the form of questionnaire. Key results which came out from the study are; Vision centres are covering on an average 82% outpatients without referring BH so helps in reducing the burden of patients in the BH as well as reducing the out of pocket expenditure of the patients for basic eye care facilities. Around 60% patients were satisfied with the VC in terms of accessibility and 30% in terms of weekly availability of the facility with some challenges like unawareness of BP, sugar facility in the facility and counselling on different surgeries. Based on the study, we can conclude that Vision centre is helpful for the patients who cannot reach the tertiary care facility as well as it helps in reducing the financial burden of the patients by saving their time as well as their money for basic eye care treatment.

B. Acknowledgement

This report is the result of twelve weeks whereby many people of different staffs have guided me in the workplace. It is a pleasant opportunity to express my gratitude to all of them.

I express my deepest gratitude to my mentor **Mr. Bharath Balasubramaniam**, President-Operations and Administration for his guidance and constant supervision, as well as for providing necessary information regarding the report and for the support in completing this report successfully.

I would also like to thank **Mr. Kowsik Krishnamoorthy**, Manager -Operations & Partner Relations for being a constant source of support, and guidance throughout the span of time.

I express my heartfelt gratitude to the Unit head of vision centre, Sisters and other working staff whoever help me in completion of the project as well as for departmental learning.

I am glad to acknowledge **Dr. Jagajeet Prasad Singh**, Associate Professor and Mentor, IIHMR for incorporating right attitude in me towards learning and for helping and for supporting whenever required.

The list would be incomplete without saying a special thanks to my friends for their support and help in the completion of this report.

Dipika Mondal

(MBA-HM 22,0560)

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F. List of Symbols & Abbreviations

Abbreviations	Full Form/Explanations
BH	Base Hospital
BP	Blood Pressure
FY	Financial Year
OP C	Outpatient Collections
OPD	Outpatients Departments
POV	Point of View
Spec	Spectacle Collections
TP	Total Population
VC	Vision Centre
VT	Vision Technicians

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H. About Institute: Sankara Eye Hospital

THE BEGINNING: Inspired by the Shankaracharya's

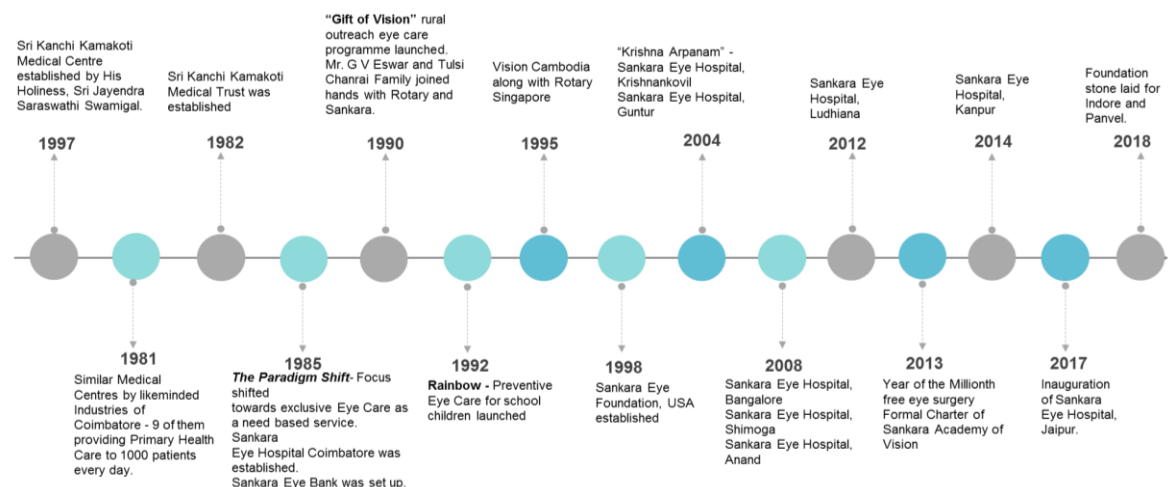
of Kanchi, in May 1977, Dr. R.V. Ramani and his wife, Dr. Radha Ramani set up a Primary Health Care Centre for the needy and poor patients at Coimbatore. With the help of other doctors offering voluntary services and the support of Coimbatore's Resident Community.

The Paradigm Shift- In 1985, focus shifted towards exclusive eye care with the establishment of Sankara Eye Hospital, Coimbatore.

VISION: "To work towards freedom from preventable and curable blindness"

MISSION: "To provide unmatched eye care through a strong service-oriented team"

MILSTONE:



SANKARA MODEL

The Model aims at providing eye care services at free of cost to 80 % of the population and through paid services for 20 % which in turn subsidizes the total cost of treatment. The Sankara 80-20 model is possibly the highest leverage cross subsidy model in community eye care worldwide.

1. Introduction:

“Vision Centre” is a permanent eye care facility in the community which acts as the first point of contact of the population with comprehensive eye care services provided by an exclusive skilled eye care worker. The vision centre would focus on intensification of the activity for provision of primary eye care to the community and ensure it provides the complete of eye care service (secondary and tertiary) through link up to base hospital through tele-ophthalmology and referral. It would also result in capture of community level demographic and eye care information which would be vital for impact assessment. It is helpful for patients in terms of accessibility and eye care facility with better facility. Its primary objective is to deliver basic care facility to the rural population, which are

1. Provides advanced eye care facility in the far-flung areas where specialist doctors are not available
2. Patients don't need to travel to the tertiary eye care facility to get basic eye care facility
3. Establishment of permanent infrastructure for Community Eye Health Care
4. A centre which helps in spreading the awareness and sensitization about Eye Care among the rural citizens
5. A hub and spoke model providing a continuous and fixed destination for patients for access to affordable eye care along with the outreach camps.
6. And more importantly, a vital link between the beneficiary and the eye care Institution.

Sankara Eye Hospital, Coimbatore, has 4 vision centres across Coimbatore district. These are in Krishnagiri (since March 2016), Annur (since Jan 2017), Perur (since June 2017) and Sundarapuram (since Aug 2018).

As it is one of the important channels to communicate with patients, the study has been chosen on the vision centre.

1.1 Responsible for:

1. Provide specialized, technologically advanced, and affordable eye care services in remote areas, where specialist doctors may not be easily accessible.
2. Create awareness and sensitization about Eye Care among the rural citizens.

1.2 Manpower:

For working effectively, Team of 2 members consisting of one trained vision technician and one trained counselor provides their service in the vision centre.

1.3 Equipment:

- i. Remidio (a portable non-invasive & non-mydratic device) that detects anterior and posterior segment conditions.
- ii. A smart phone is attached to the device for taking high resolution photo, sending it through 3G connection to be finally received by the base hospital's Ophthalmologist.
- iii. Sphygmomanometer
- iv. Glucometer for checking sugar level in the blood for surgery selected patients.
- v. Vision Chart for basic visual acuity.

1.4 Process:

Everyday patients who visits the vision centre with their respective eye problem are screened by the refractionist with the ophthalmologist consultation available in the base hospital at that time. Patients who identified with refractive errors are prescribed spectacles and those who require other surgical procedures or treatment are given the medication suggested by the ophthalmologist or else will be referred to the base hospital.

The vision centre provides the complete basic eye care facility to the patients through a link up to base hospital through tele-ophthalmology and referral care.

1.5 Purpose:

Cataract is one of the reasons comes under avoidable blindness and the existing facilities are lacking for comprehensive approach in the rural community.

There is no permanent facility available in the rural sector neither any outreach services available for the same manner. Population in the rural as well as in the urban slum don't have any affordable eye care facility on permanent basis.

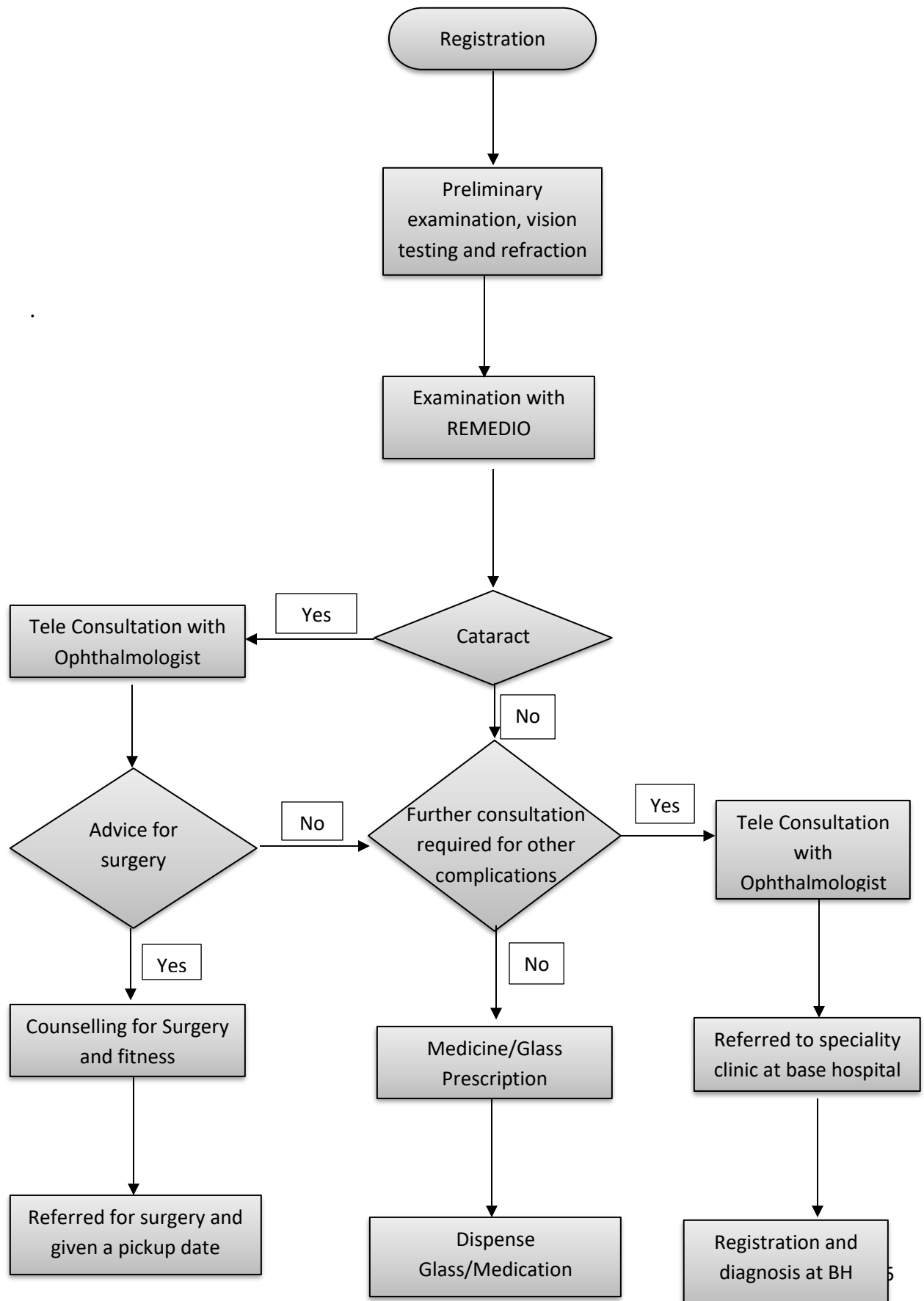
80% of the blindness can be treated or referred by the trained person at primary level. Remaining 10-20% patients may need any other eye surgery which can be done on tertiary level. Existence of primary eye care facility can serve poor needy people in a cost-effective manner. Vision centre not only helps in treating patients but also identifying and referring them to the tertiary level. Patients can easily get the benefit for the basic eye care treatment without travelling to tertiary level.

1.6 Vision Centre Timings

Days	Time
All Weekdays	9 am to 7 pm
Sunday	9 am to 1 pm
<i>Weekly off: Any weekday which is not a market day/peak day is not</i>	

Table 1: Vision Centre Timings

1.7 Activities and process flow



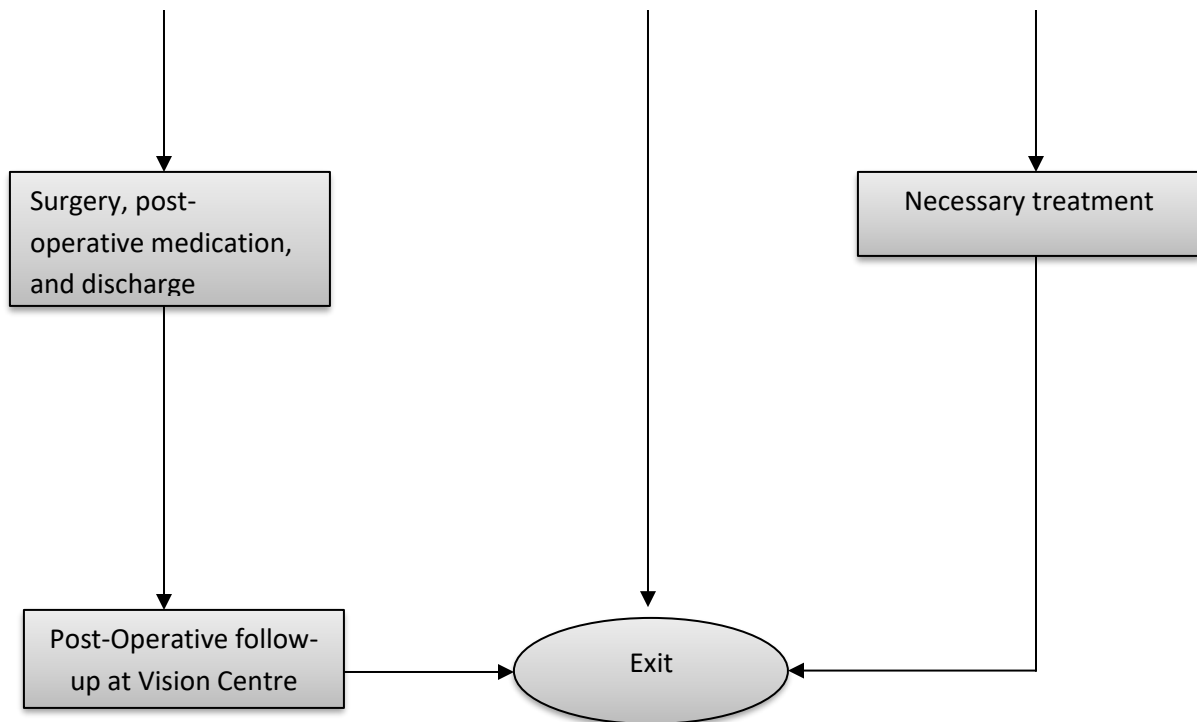


Figure 1: Activities & Process Flow

2. Vision Centres

(i) Annur:

Annur is a Town Panchayat city in district of Coimbatore located in Tamil Nadu state.

It has population of 20,079. Male population is of 9,971 and females are of 10,108 (Census, 2011)

Population of Children with age of 0-6 is 1835 which is 9.14 % of total population of Annur.

(ii) Perur:

Perur is a Town Panchayat city in district of Coimbatore, Tamil Nadu. It is divided into 15 wards. Population of Perur is 8,004 of which 4,010 are males while 3,994 are females as per report released by Census India 2011

Population of Children with age of 0-6 is 690 which is 8.62 % of total population of Perur.

(iii) Krishnagiri:

Krishnagiri is a Municipality city in district of Krishnagiri, Tamil Nadu. The Krishnagiri city is divided into 33 wards. It has population of 71,323 of which 35,395 are males while 35,928 are females as per report released by Census India 2011.

Population of Children with age of 0-6 is 7748 which is 10.86 % of total population of Krishnagiri.

(iv) Sundarapuram:

As per the Census report of India, population of Kurichi in 2011 is 123,667; of which male and female are 61,815 and 61,852 respectively. Although this city has population of 123,667; its urban / metropolitan population is 2,136,916 of which 1,071,435 are males and 1,065,481 are females.

3. Literature review:

- Kovai et al (2012) carried out a study on “key factors determining success of primary eye care through vision centres in rural India: patients’ perspective and concluded that a good VT can enhance patient satisfaction. However, patient expectations are not only confined to the provider but also other factors such as ability to pay and convenient transportation that helps patients reach the location of the VC with ease.
- Misra et al (2015) carried out a study on Models for primary eye care services in India and came out with conclusion that the key aspect for the success of any vision center is patient satisfaction which may be attained by providing quality services, utilization of updated technology, accessibility(cutting travelling costs) and effective counseling at vision centers. Sustainability of primary eye care services through various models in urban or rural communities principally depends on its pre-defined and well thought approach.
- Andersen et al (2009) examined the different dimensions of access to eye care from a public health perspective and found that the progress has been made, but some gaps remain in measuring access to eye care. Therefore, they concluded, to address a variety of demands from patients, providers, and policy makers, it is necessary to account for potential access and realized access measures. We need to adopt new methods in assessing the relationship between contextual characteristics and use of eye care services. Moreover, we need to better

understand patients' satisfaction and their relationship with utilization and health outcomes.

- Holden et al (2010) did a study with a purpose to assess the indirect, direct, and overall costs of patients accessing vision care at vision center services as compared with the nearest private clinic. The total costs were significantly lower for patients who accessed the vision centers compared with the costs these patients may have incurred if they had sought services from the nearest town-based clinic. Vision centers, besides providing quality eye care services, offer substantial cost savings to rural populations compared with town-based optical clinics.
- Rao et al (2010) compared the satisfaction of patients with Vision Center's services (primary eye care) in large village and small village in rural settings in Andhra Pradesh state, India. The overall satisfaction levels of the Vision Center's experience were at 78% and 69%, considerably good. However, continual improvement is required to be made in service time, staff performance, cost and quality of vision care, especially at more remote primary eye care centers.
- Ravilla et al (2007) did a study on delivering refractive error services through primary eye care centers and outreach and found out that screening in schools and in communities through vision centers is critical to boost patient numbers and to ensure that clinicians' time is used optimally. Also, outreach programmes have the potential to serve as an advocacy tool and to meet short- term needs in underserved areas.
- Bowling et al (1997) conducted a study on evaluation of specialists' outreach clinics in general practice in England: process and acceptability to patients, specialists and general practitioners. The outreach clinics were rated as more convenient than outpatients' clinics in relation to journey times; those outreach patients in work lost less time away from work than outpatients' clinic patients, waiting times in clinics were comparatively lower for outreach patients.
- Cleary et al (1988) studied on patient satisfaction as an indicator of quality care. In this review of the theoretical and empirical work on patient satisfaction with care, the most consistent finding was that the characteristics of providers or organizations that result in more "personal" care are associated with higher levels of satisfaction. Also, more personal care will result in better communication and more patient involvement, and hence better quality of care.
- Khurana et al (2011) conducted a study on tele-ophthalmology aided Vision Centers in rural South India w.r.t. role and utilization of services. They came to a result that under-utilization of existing eye care services in rural areas is due to multiple factors. Vision centers provide access to permanent primary eye care and a comprehensive eye examination having a clear advantage over outreach camps. It also saves cost for both provider and patient. Therefore, tele-

ophthalmology aided Vision Centers are a good, cost effective option in providing primary eye care in rural areas.

- Khanna et al (2016) studied accuracy of vision technicians in screening ocular pathology at rural vision centres of southern India. They concluded as there is good agreement between the vision technicians and the ophthalmologist for screening and referral of anterior segment pathology but moderate to fair for glaucoma suspects and retinal pathology, vision technicians would be a good resource at the primary level to screen for anterior segment pathology; however, they may need further training to detect posterior segment pathology.

4. Aim: To assess the impact of existing vision centres on the population and analyze their potential for future expansion.

5. Objectives:

- To analyze the performance of the existing Vision centre
- To find out the enabling factors leading the success of Vision centre
- To find out hinderance factors leading the Vision centre not achieving full success
- To find out status of the Vision centre with regard to self-sufficient.

6. Methodology:

Source of data: Primary data was collected through structured questionnaire by face to face interview and secondary data of performance analysis (April 2018-March 2019) was taken from the medics.

Study tool: Structured questionnaire

Study type: Observational cross sectional analytical

Study Duration: Feb 2019- April 2019

The study was conducted in the duration of three months by visiting the VC. In one day on an average the data was collected from six patients in seventeen visits in one and half months. Therefore, total sample collected was hundred patients. For counselor and refractionist, the data was collected by sending questionnaire through google form online

Study Area: Sankara Eye Hospital Coimbatore, Tamil Nadu and four vision centers (Annur, Perur, Sundarapuram, Krishnagiri)

Sample size: 100 patients from Annur VC and 8 respondents (refractionist and counselor) from all four VCs.

Sampling method: Purposive sampling

Inclusion criteria: The patients who visited the vision centre (Feb 2019-April 2019)

Exclusive criteria: The patients who were not visited the vision centre and the patients who were not willing to participate in the study.

Analysis plan: Statistical analysis with graphical representation

Data collection method: Face to face interview with the patients

7. Results:

Performance Analysis of VCs

(Source of data: April 2018- March 2019)

Potential of Vision Centres and aspects through which they can be operational self-sufficient sooner.

7.1 Cross Parameter Analysis:

7.1.1 Patients/Day Comparison of VC:

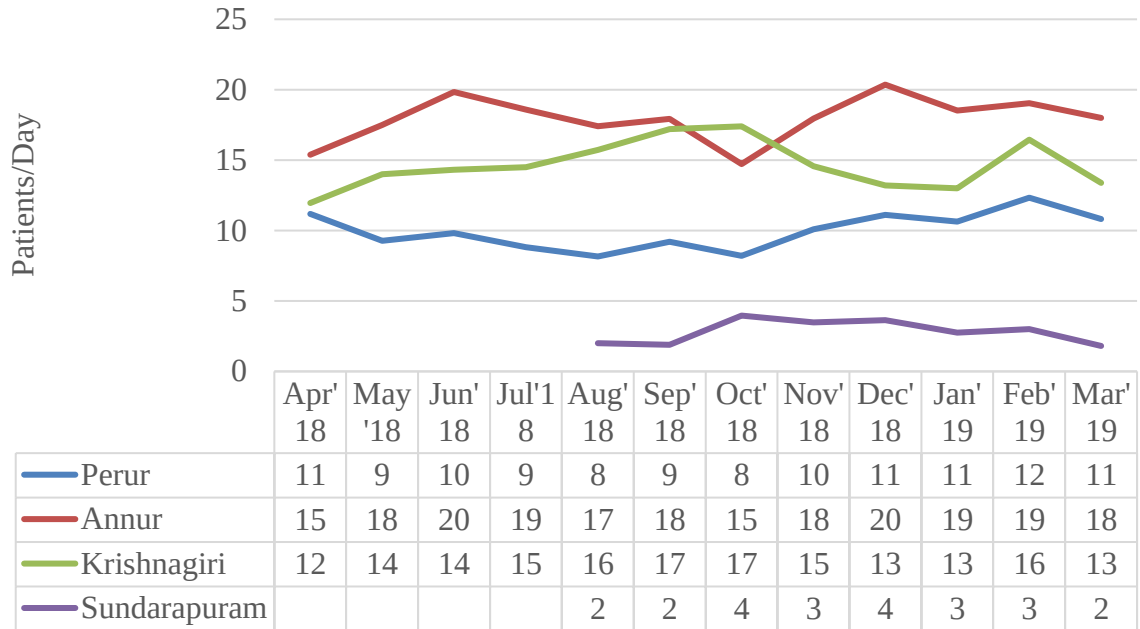
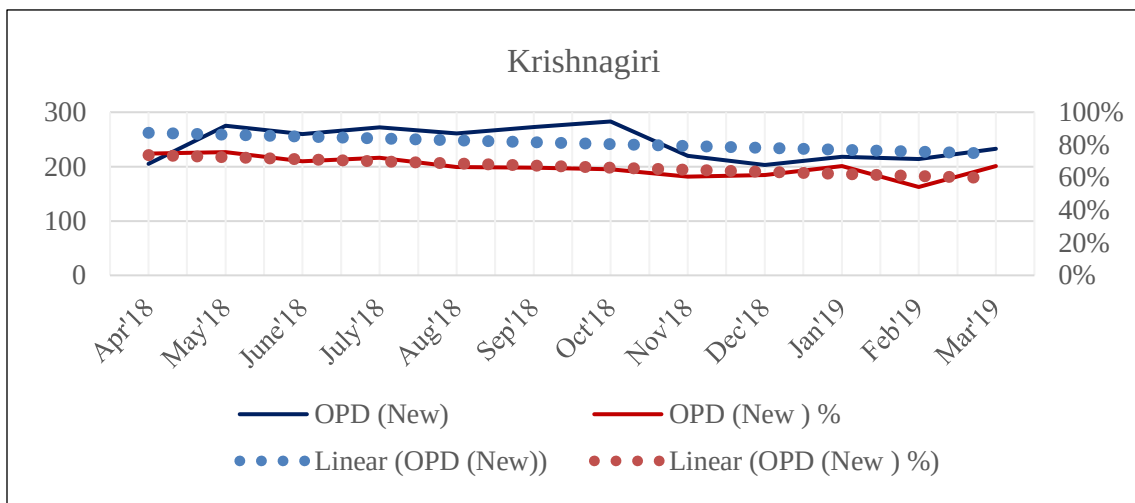
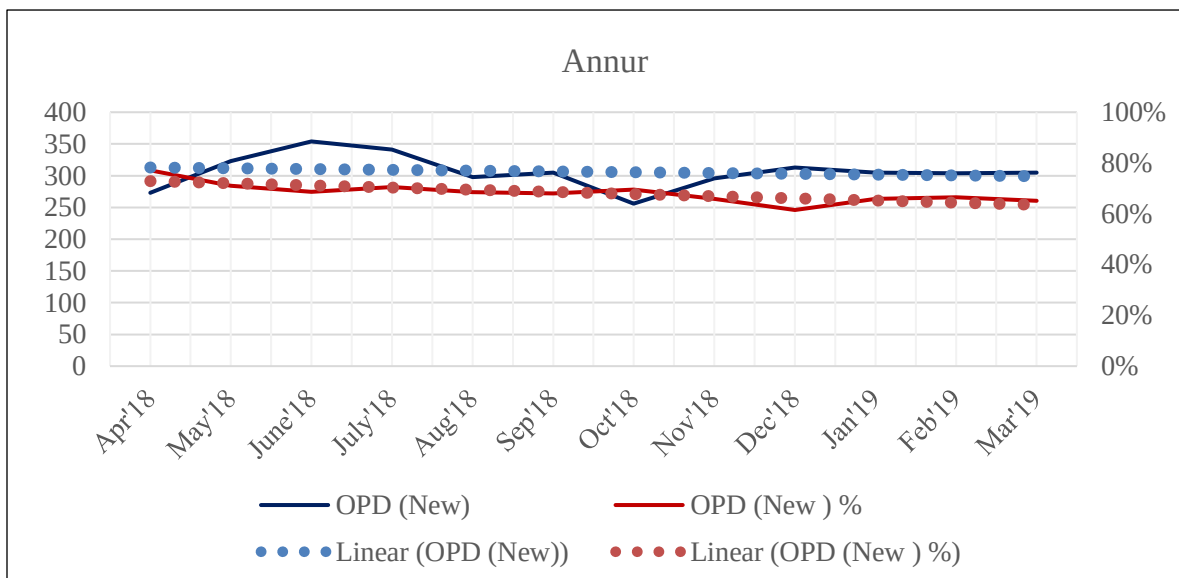
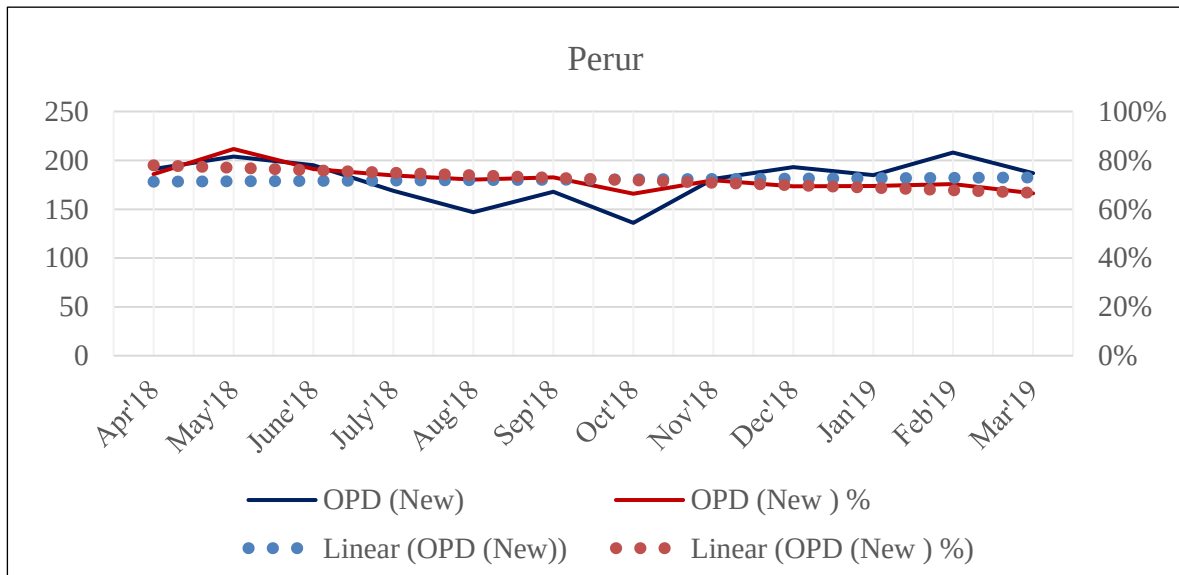


Figure 2: Patients/Day Comparison

- Annur is performing the best in terms of attracting the patients and it shows a slight upward trend over the year
- Krishnagiri's patient count increased sharply till October. However, it is showing downward trend since then
- Perur is showing very consistent trend but not performing as good as Annur or Krishnagiri
- Sundarapuram has started recently and not able to attract a lot of patients.

7.1.2 Trend Comparison of New (OPD) and New (OPD) %



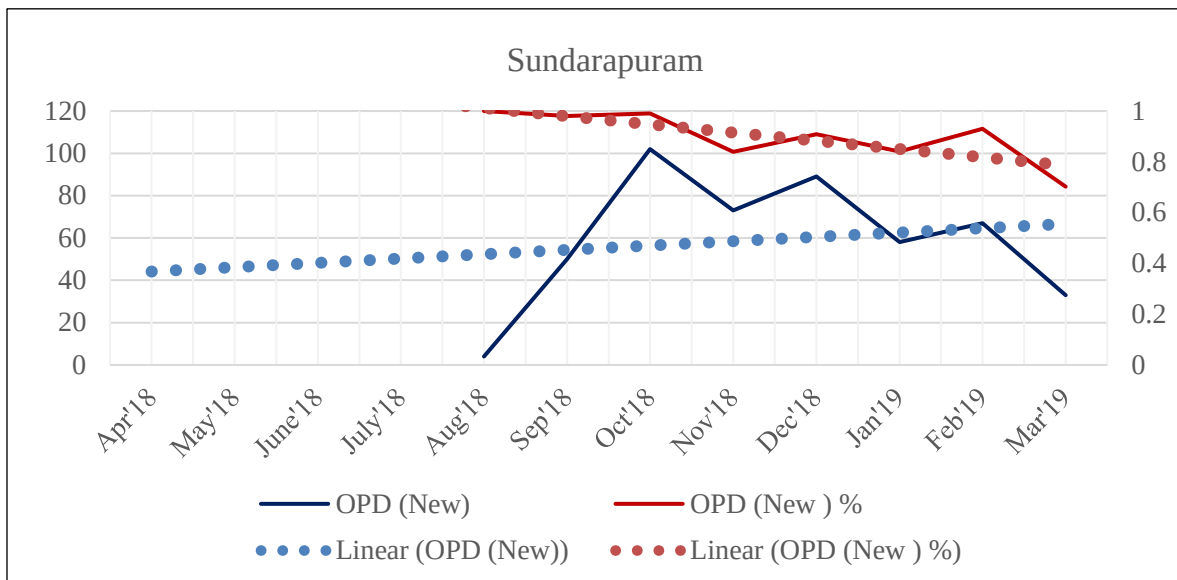


Figure 3: Trend Analysis

Sr. No	Vision Centres	Ideal field worker/VC	No of field workers
1	Annur	1	0
2	Perur	1	1
3	Krishnagiri	1	1
4	Sundarapuram	1	0

Table no.2: No of field workers/VC

Analysis POV (Trend Analysis)			
New %	New	Growth Status	Control / Stability
High	High	Steady	No
High	Low	Negative	Yes
Low	High	Retention	Yes
Low	Low	Saturation	Yes
Stable	Stable	Steady	Yes

Table 3: Point of View of Trend Analysis

GROWTH ANALYSIS OUTPUT	
Vision Centre	Type of Growth
Perur	Steady Stable Growth
Annur	Steady Stable Growth
Krishnagiri	Saturation Stable Growth
Sundarapuram	Retention Stable Growth

Table 4: Growth Analysis Output

7.1.3 Patients Referred and Acceptance at BH

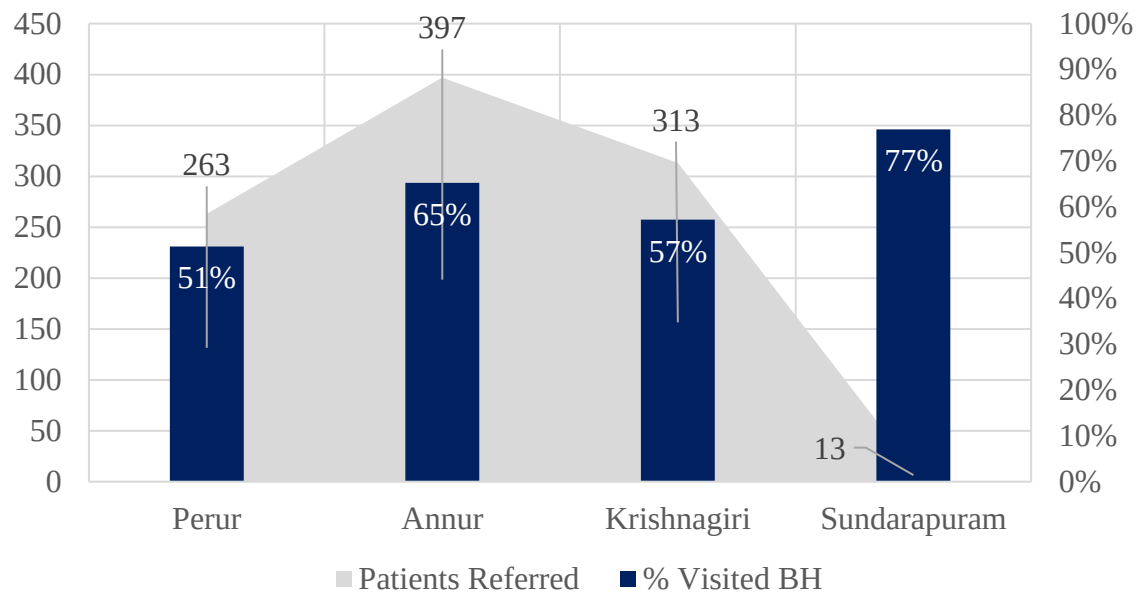


Figure 4: Patients Acceptance at BH

Observations

- Irrespective of the no of patients referred at the BH, % of acceptance always remained around 55-60% (average)
- In Sundarapuram more % of patients are prone to visit BH

7.1.4 Collection Comparisons of Vision Centres (Incl. BH Operations)

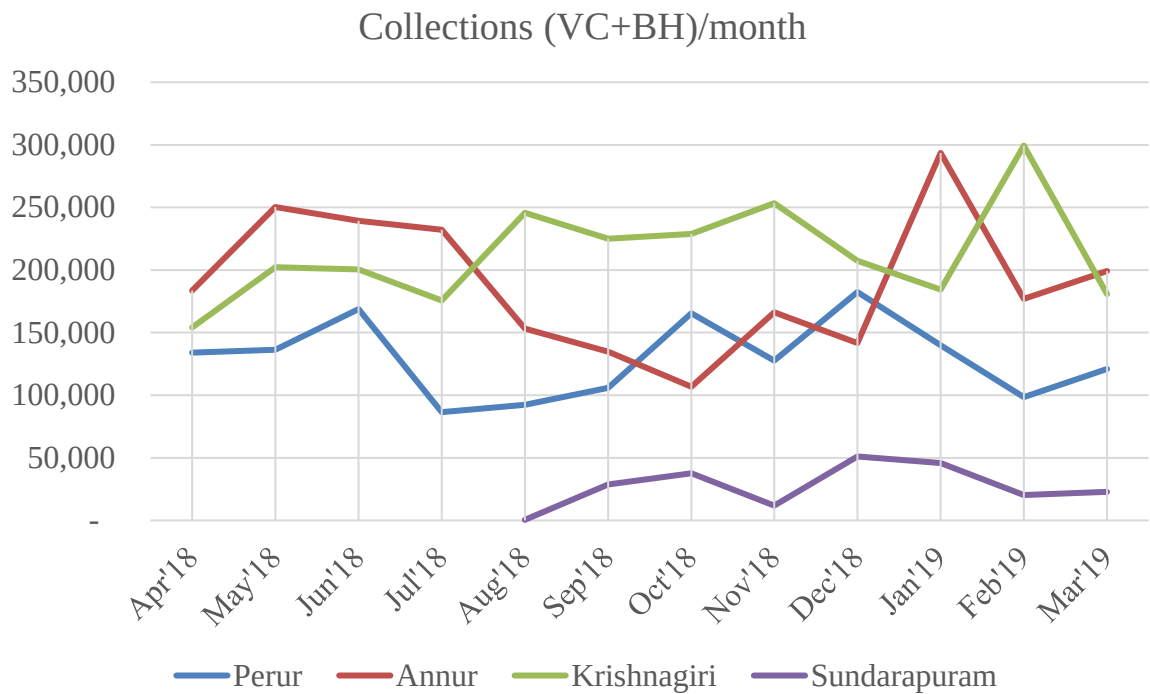


Figure 5: Collections per month

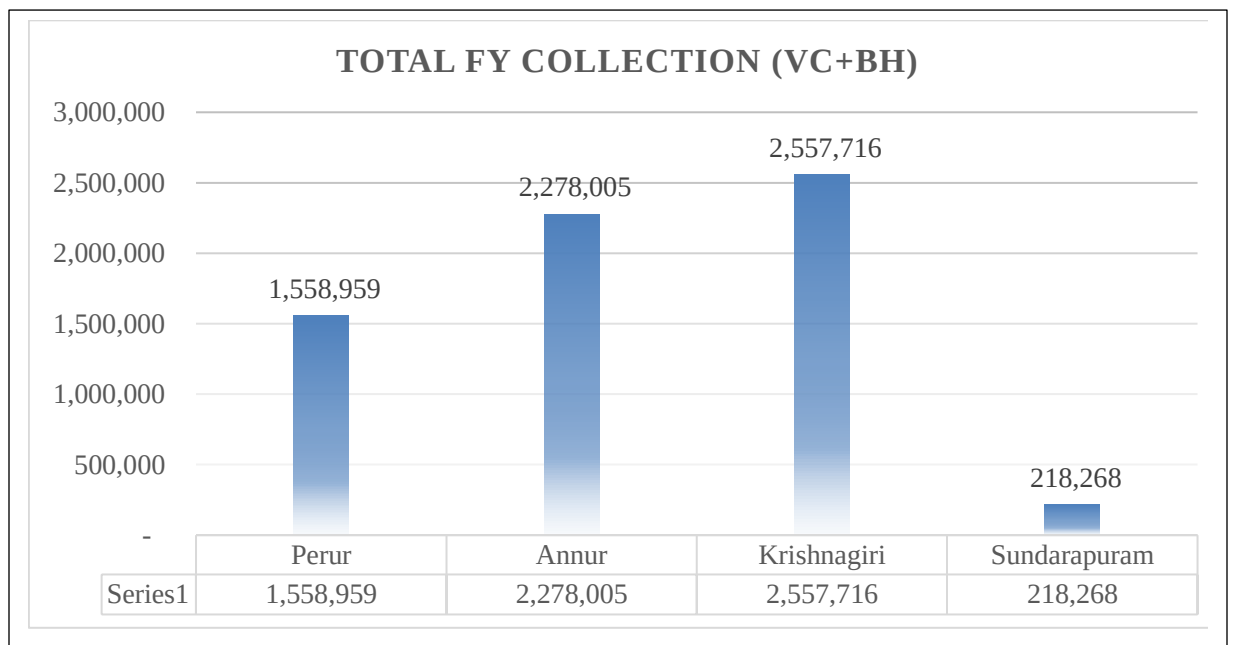


Figure 6: Total FY Collection

7.1.5 Vision Centre Collection Break-up

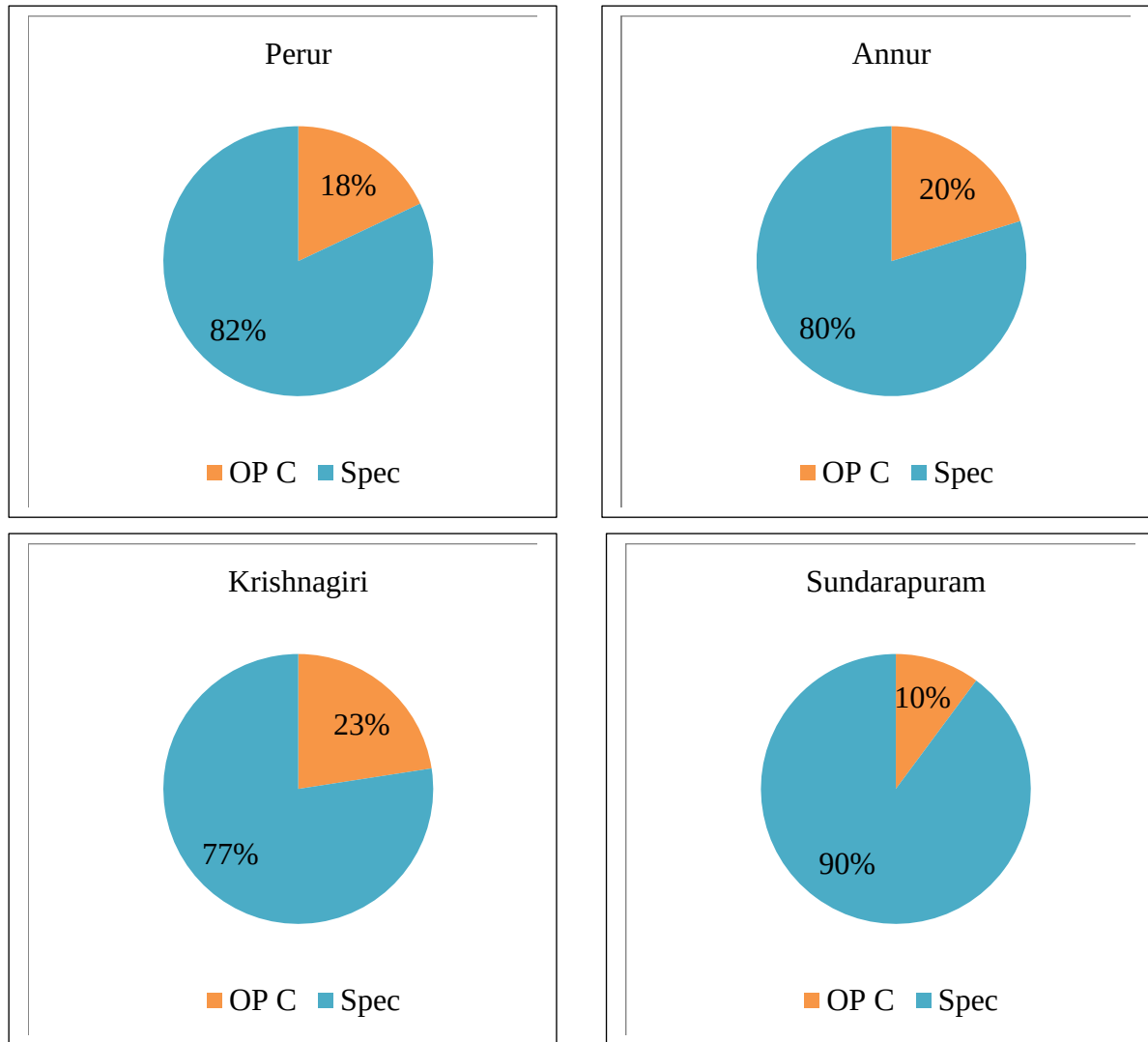


Figure 8: VC Collection Breakup

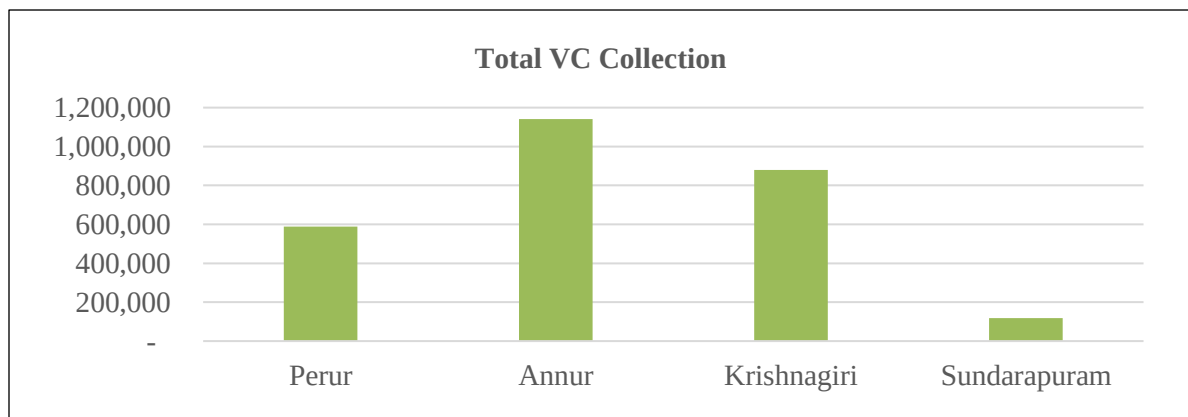


Figure 7: Total VC Collections

7.1.6 Vision Centre Self-sufficiency Analysis

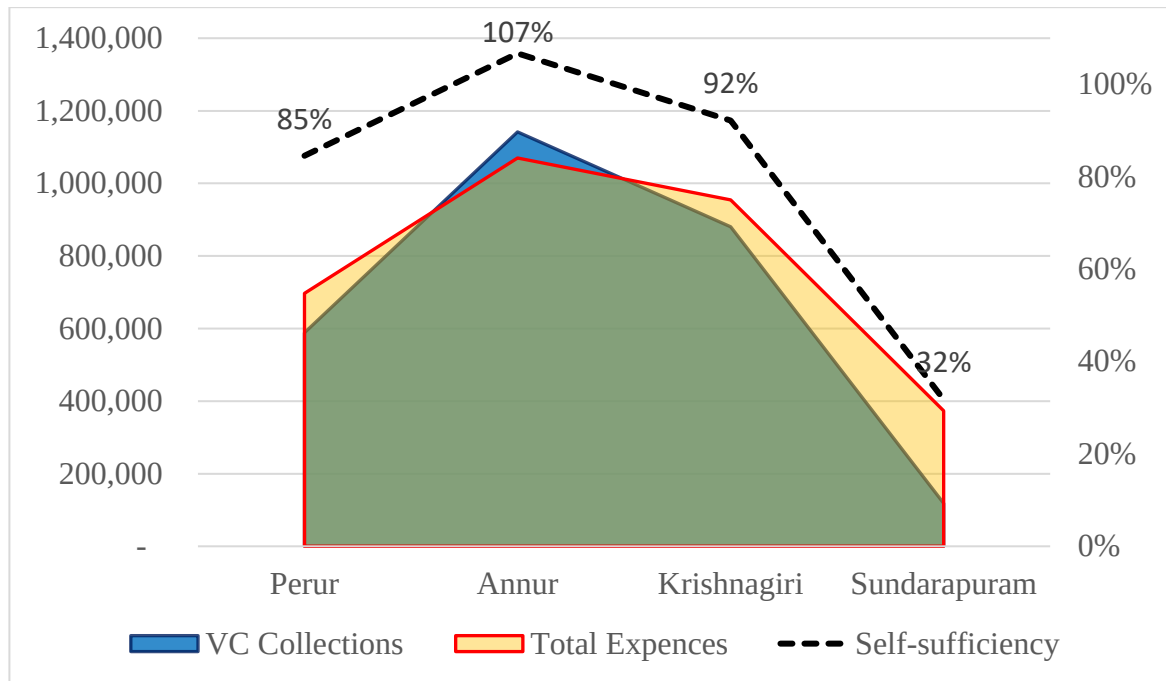


Figure 9: Self Sufficiency Analysis

7.2 Key factors determining success of Vision Centre and challenges

7.2.1 Why VCs are helpful? / How do they take a call to go to VC?

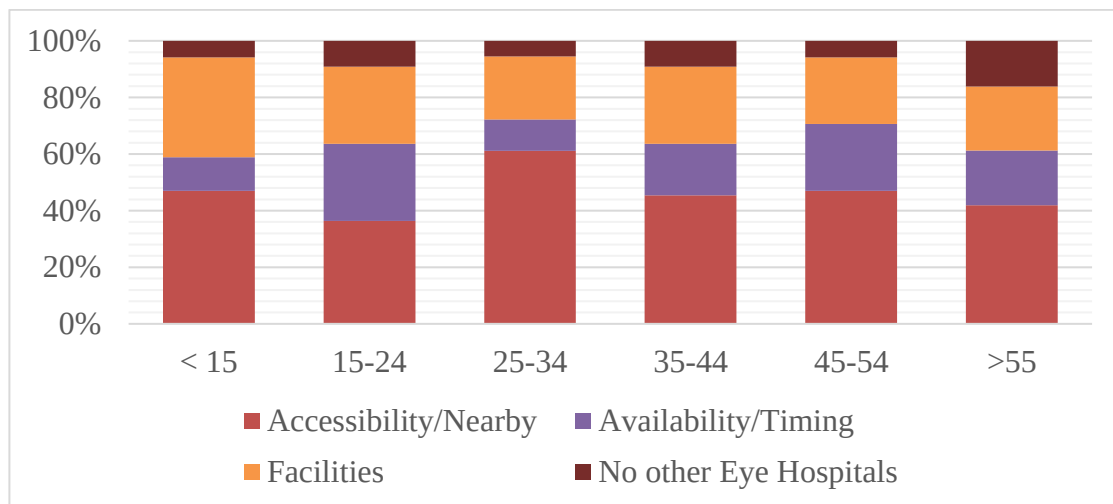


Figure 10: Why and How VC: Analysis

Observations:

- Among all age group the most popular VC criteria is **Accessibility (40-60%)** or nearby locations. So, they want it to be located near bus stop, main road, etc. so that they can easily access it.
- The 2nd most popular criteria for VC are Facilities **(20-30%)**. So, they have a better probability to show up if VC is accessible and have good facilities.

7.2.2 Factors affecting decision to give recommendations

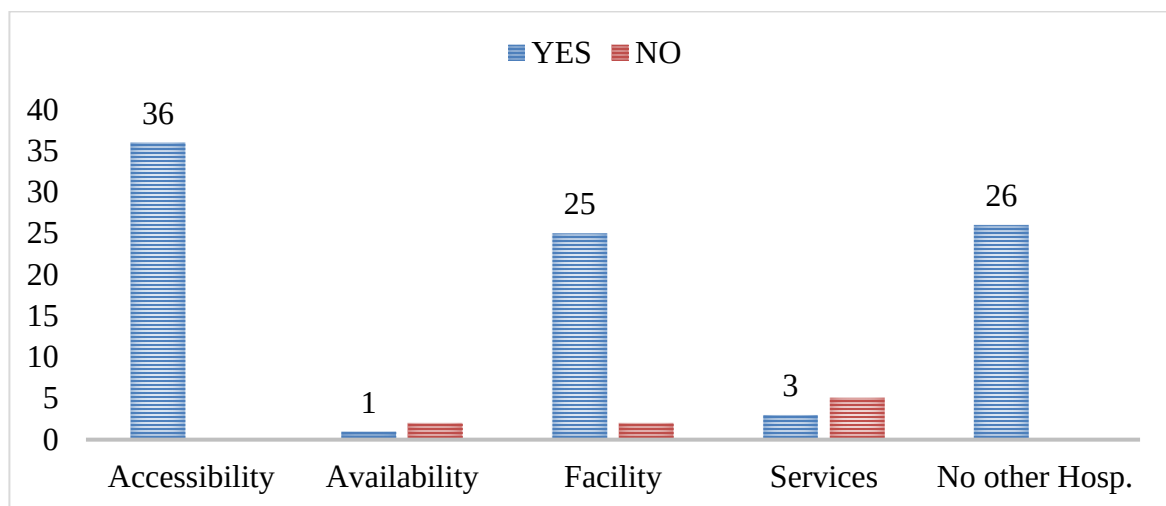


Figure 11: Factors for recommendations

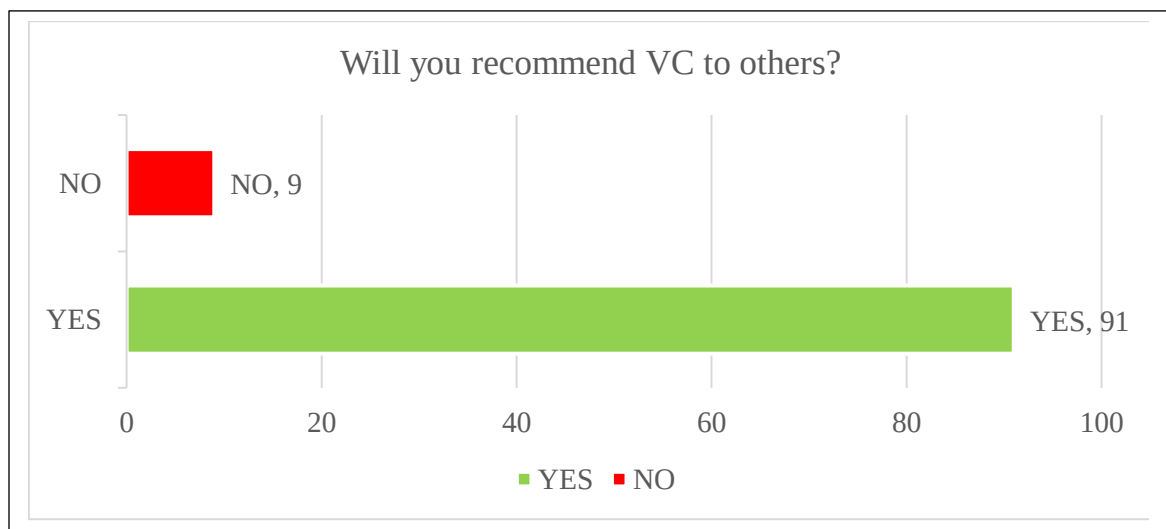


Figure 12: Overall Recommendation Analysis

7.2.3 Reasons behind the awareness of existing VCs

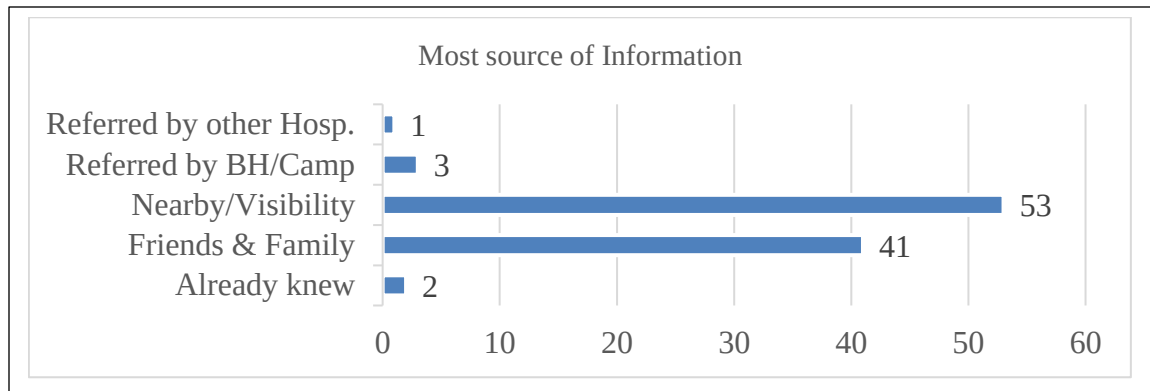


Figure 13: Awareness Reasons

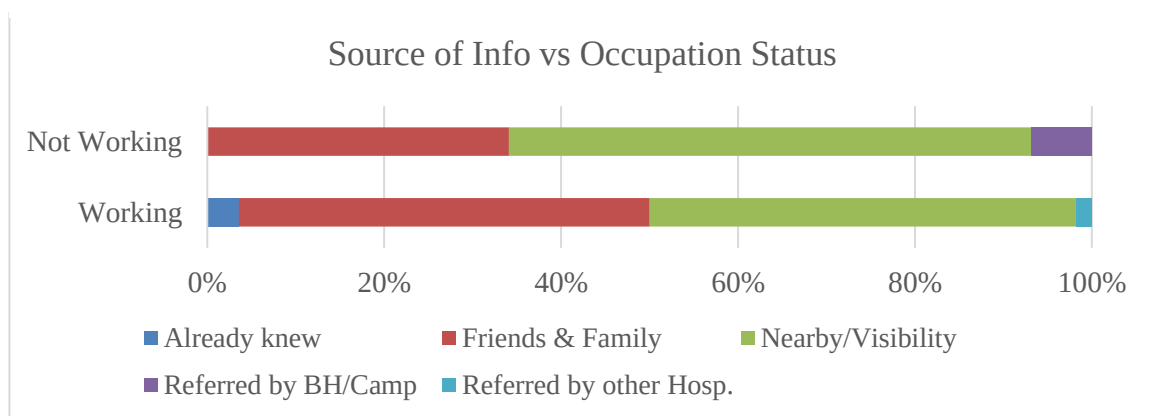


Figure 14: Source of Information

7.2.4 Eye problem not solved but still will recommend!

One interesting fact came out from the survey is that about 16% people whose eye problems are not solved / not satisfied with VC but will still recommend to their family and friends

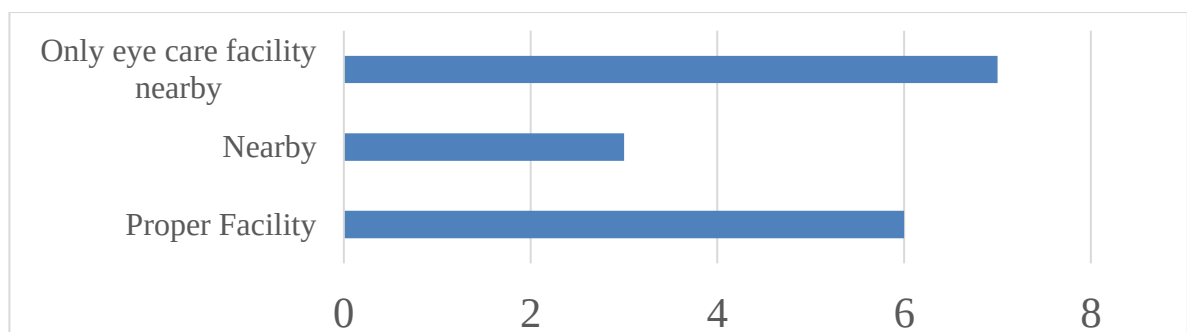


Figure 15: Problem not solved, still recommends

Key Notes:

- While it's obvious if there's no eye hospitals nearby or if the VC is close by, patients will still be going to come and visit
- However more than 1/3rd people have also said that having a proper facility is one of the major criteria to choose or recommend a VC
- In turn it can be inferred that in case in future we plan to set up a VCs where there's other eye hospitals or other eye hospitals are getting set up near our VCs, we can still retail/get recommendations, if we have good facilities

7.2.5 Accessibility of the VCs

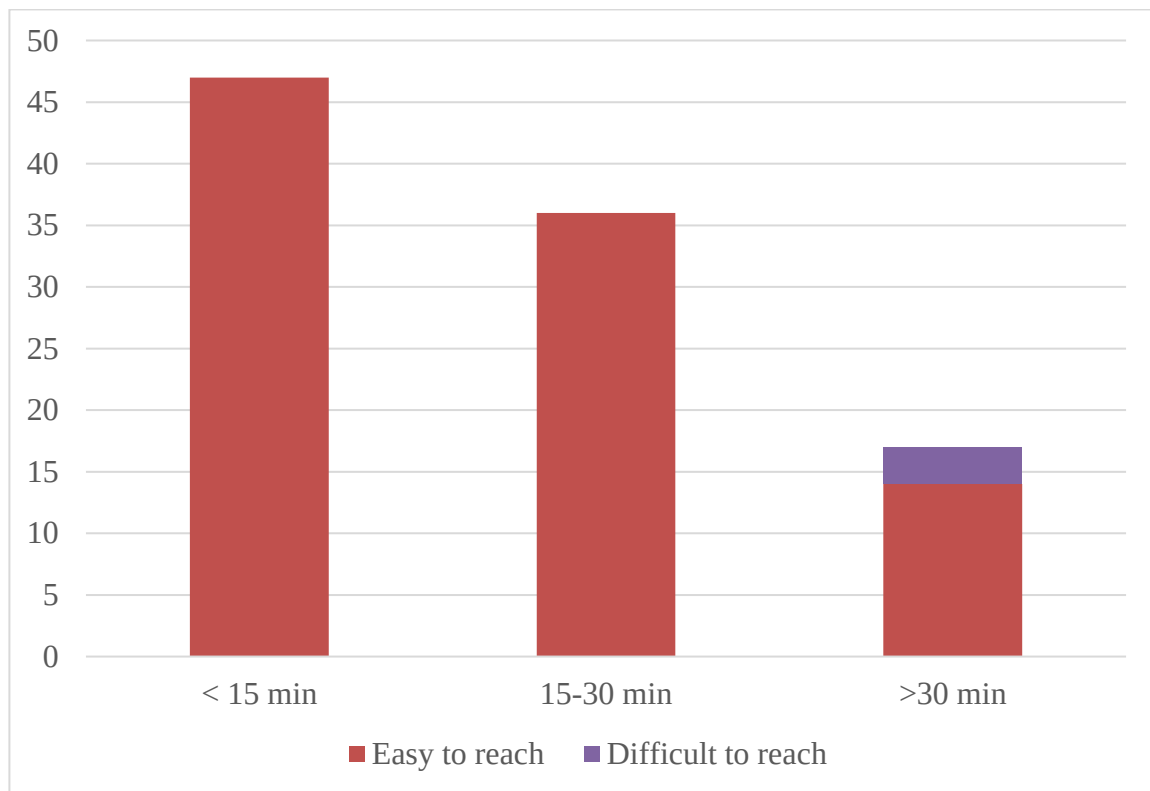


Figure 16: Accessibility of VC

Observations

- The said VC is well visible and well accessible
- Only 3% people have faced trouble reaching here (because of bus timing issues)

7.2.6 Awareness of availability of Sugar/BP check at VC

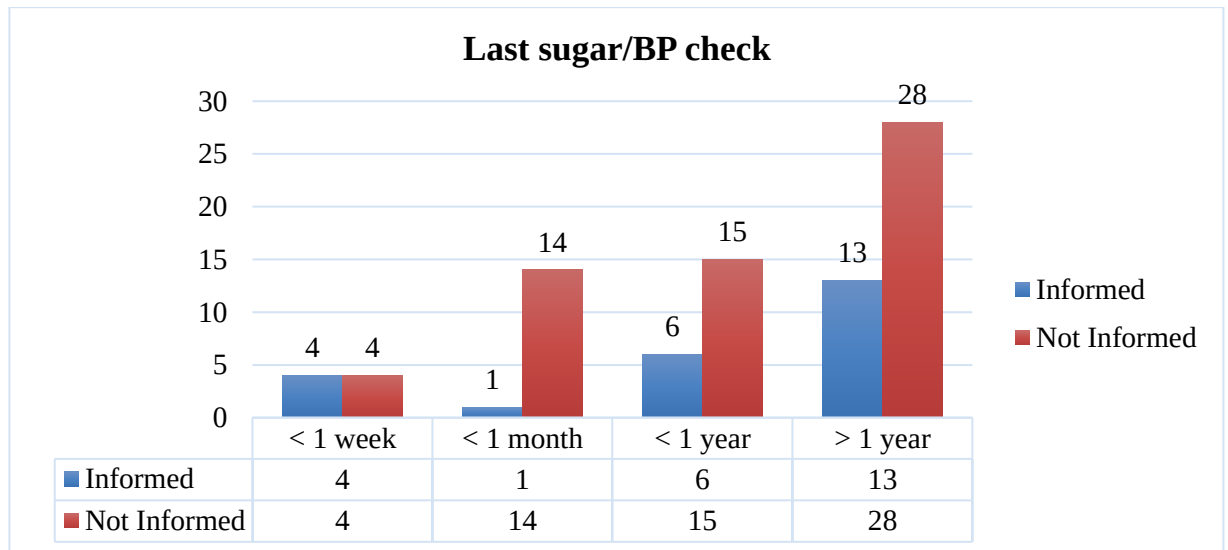


Figure 17: Awareness vs Potential of Sugar/BP Check

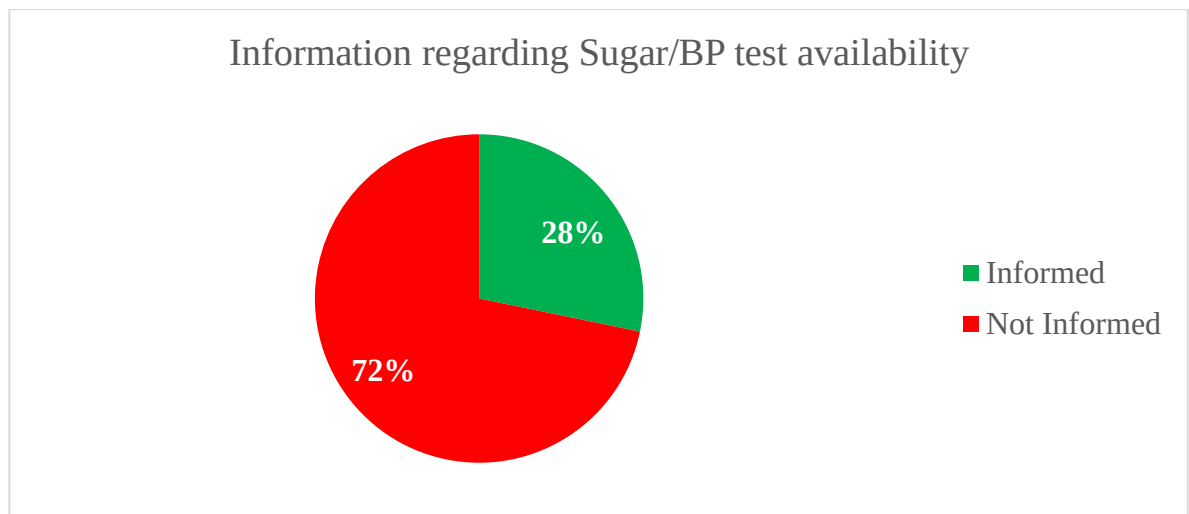


Figure 18: Information of Sugar/BP availability

Observations

- While only 90% of the patients have done their sugar/BP check more than a week back, only 28% of them are aware of sugar/BP test availability
- All the patients can be informed the availability of Sugar/BP test.

7.2.7 Age-wise information regarding BP/Sugar check facility at VC

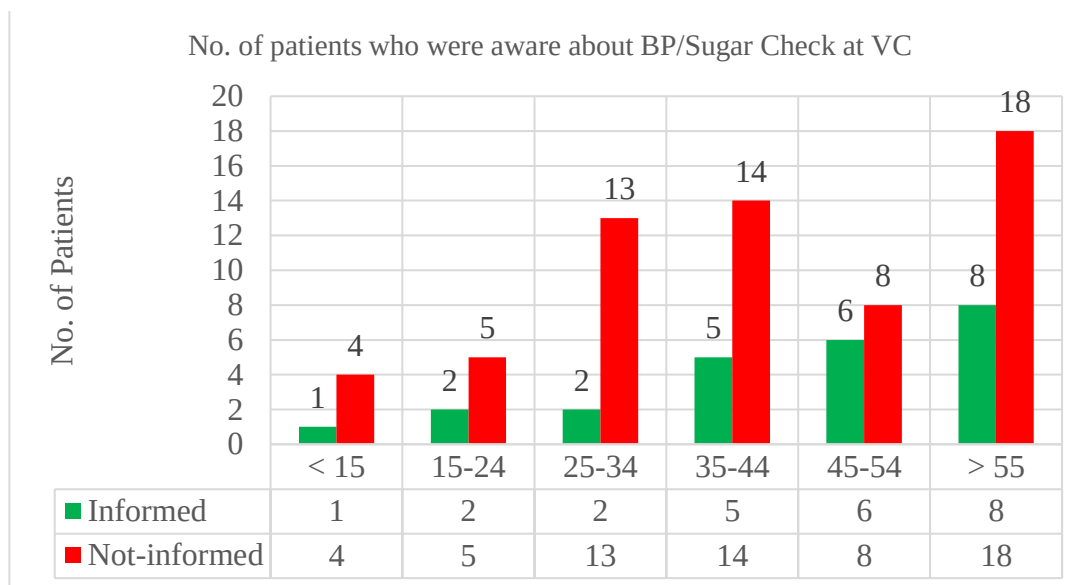


Figure 19: Age-wise information of Sugar/BP availability

8. Discussion:

- This paper addresses the issue of what determines patients satisfaction with Vision centre and it is found that around 60% patients are satisfied with vision center in terms of accessibility and rest 20-30% is in terms of available facility which is also given in the study of “satisfaction of patients with Vision Center’s services (primary eye care) in large village and small village in rural settings in Andhra Pradesh state, India”, which also says the overall satisfaction levels of the Vision Center’s experience were at 78% and 69%, considerably good. .
- The paper is highlighting the key factors of sustainable vision centre which concluded that around 91% of patients said they will recommend the VCs to other patients based on the available facility like teleophthalmology, feasible timings and accessibility which is also mentioned in the Journal, Models of Primary Eye Care Services in India given by Indian Journal of Community Medicine which says that mobile tele-opthalmology model is believed to

be most efficient as it facilitates early detection and identification of specific ocular conditions such as diabetic retinopathy. It could be a sustainable model as it saves lot of travel costs and time for the patients as well the eye specialists.

- c) This study is suggesting the need based solution for the patients which will be different for different population like it is found that on an average 82% spectacle selling is done from all the VCs and one of the reasons for not converting rest of the population is affordability or high range of spectacles available in the VCs as most of the spectacle is in different range in different VCs for ex the max range spectacles opted by the patients are diff in all VCs like Annur- Above 1000, Perur- below 500, Sundarapuram, Krishnagiri- 500-1000. The same issue is addressed in the study of “different dimensions of access to eye care from a public health perspective” which says to address a variety of demands from patients, providers, and policy makers, it is necessary to account for potential access and realized access measures.
- d) This study is discussing about how the vision centre is helpful in terms of reducing the out of pocket expenditure for basic care facility and concluded that vision centres are covering on an average 82% outpatients without referring BH so helps in reducing the burden of patients in the BH as well as reducing the out of pocket expenditure of the patients for basic eye care facilities. The same study is carried out in the study of “tele-ophthalmology aided Vision Centers in rural South India w.r.t. role and utilization of services”, which says vision centers provide access to permanent primary eye care and a comprehensive eye examination having a clear advantage over outreach camps. It also saves cost for both provider and patient.
- e) The study is also highlighting on the issue of unawareness of existing facilities available in the vision centre to the patients which says on an average 67% of the patients those are above 40 age are not informed about the availability of the BP, sugar facility in the VCs and 68 % patients who did their BP, sugar checkup back one year also not informed about same. This same issue is addressed in the study of “different dimensions of access to eye care from a public health perspective” which concluded that we need to adopt new methods in assessing the relationship between contextual characteristics and use of eye care services. Moreover, we need to better understand patients' satisfaction and their relationship with utilization and health outcomes.

9. Conclusion:

9.1 Challenges:

- Not all the VCs have field workers though some VCs stated that field workers must be there for more community participation, which is one of the important factors for making VCs successful.
- It is found from the study that Krishnagiri covers the max patients to the BH while Annur, although it is good in terms of attracting patients. One of the

reasons behind this is that counselling of packages for different surgeries. Krishnagiri starts from a particular minimum range, while others tell ranges from min to max that makes it difficult to convert those patients after they visit the BH.

- The max range spectacles opted by the patients are different in all VCs like Annur- Above 1000, Perur- below 500, Sundarapuram, Krishnagiri- 500-1000.
- Though it is recommended to all VCs that only lens charge should be taken from the patients in advance, irrespective of that all the VCs are taking half amount of the total bill from the patients, which is costly for patients.
- On an average 67% of the patients those are above 40 age are not informed about the availability of the BP, sugar facility in the VCs and 68 % patients who did their BP, sugar checkup back one year also not informed about same.

9.2 Benefits of VCs:

1. Vision centres are covering on an average 82% outpatients without referring BH so helps in reducing the burden of patients in the BH as well as reducing the out of pocket expenditure of the patients for basic eye care facilities.
2. All the four vision centres collectively with BH services contributed around Rs.5,493,926 from April 2018 to Jan 2019.
3. It is found that on an average 82% spectacle selling is done from all the VCs and one of the reasons for not converting rest of the population is affordability or high range of spectacles available in the VCs.
4. Around 60% patients are satisfied with vision center in terms of accessibility and rest 20-30% is in terms of available facility.
5. Around 90% of the patients visited VCs based on word of mouth and visibility of the VCs.
6. Around 91% of patients said they will recommend the VCs to other patients based on the available facility like teleophthalmology, feasible timings and accessibility but rest of the 9% denied it for improper information, not acceptance of patients after 4.30-5 pm.

10. Supplementary:

10.1 Refractionist:

Sr. No	Questions	Responds	Skip
1	Who does the slit lamp examination?	1.Refractionist 2.Counselor 3.Doctor 4.Both doctor and Refractionist 5.Both Refractionist and counselor	
2	What kind of patients you refer to BH?		
3	Who prescribes the medicines to the patients?	1.Refractionist 2.Counselor 3.Doctor	
4	Who is responsible for explaining the packages for further treatment at BH?	1. Refractionist 2. Counselor of the VC 3. Counselor of the BH	
5	What is the main source of income for VC to make it self-sufficient sooner?	1. Spectacle collections 2. OP collections 3. Both 4. Other	
6	Are you aware of monthly target set for your VC?	1. Yes 2. No 3. If yes, specify____	
7	How do you come to know about the monthly target?	1. From dashboard 2. From unit head 3. From outreach manager	
8	What are the extra steps you take to complete the target if needed?		
9	What are the least used regular consumables, technical things used in VC?		
10	How do you encounter an emergency case of equipment failure or some technical issues in the VC?	1.Inform to Unit head 2.Inform to technical person 3.Repair it by self 4.Others_____	
11	On an average how many teleconsultations are done per day?		
12	How many teleconsultations are failed in a day?		
13	What are the reasons for teleconsultation failure?		

10.2 Counselors

Sr. No	Questions	Responds	Skip
1	Who is responsible for the referral of patients to the BH?	1. Refractionist 2. Counselor of the VC 3. Both	
2	Do you know about the specialties and subspecialties provided at the BH?	1. Yes 2. No 3. Somewhat If yes, specify	
3	What are the packages you tell the patients for cataract and other surgeries?	1. Cataract____ 2. Other____	
4	Which range of spectacles is opted by the patient's maximum times?	1. Below 500 2. 500-1000 3. Above 1000	
5	How much advance should be taken from the patient while confirming optical order?	1. frame amount 2. lens amount 3. Half amount 4. other__	
6	How many follow ups you do for the patients who do not turn up to BH/eye camp?		
7	What are all the methods you use for the follow up?	1. Telephone calls 2. SMS 3. Through field workers 4. others____	
8	What are the reasons stated by the referred patients and not turned up to BH or eye camp?	1. Financial constraint 2. Improper information 3. Location 4. others____	
9	What are the least consumables, technical things used in VC?		
10	To whom you will raise the purchase order needed by VC?	1. Account manager 2. Purchase manager 3. Outreach manager 4. Unit head	
11	What are all the details you share with patients referred to BH and eye camp?	1. BH____ 2. For non-paying____	
12	What are the parameters you consider while referring patients to BH or eye camp?	1. For BH____ 2. For eye camp____	
13	How many field workers are working for this vision center?		
14	How do you contribute your work for community participation to increase the patient footfall for VC?		
15	According to you, which all things are lacking in the VC?		

Table 6: Counselors Questionnaire: English

1. ரிபாசு மருத்துவமனைக்கு கௌயாஸ்களை பாரிஜீகரக்கும் பொறுப்பு யாருடையது?
2. ரிபாசு மருத்துவமனைகளில் இலக்கும் முக்கிய வசதிகள்/ கருவிகள் பற்றி விசாரிப்பீர்கள்?
3. Cataract மற்றும் Sympathy செய்வதற்கான தடவண்தொடக்கங்கள் எவ்வளவு என்ன கருவிகள்?
4. எவ்வளவு மதிப்பிலான Spectacles அதிகமாக வாங்குகிறவர்கள்?
5. ஒரு ஆள் optical exam உறுதி செய்ய, எவ்வளவு தொகை செலவழிப்பீர்கள்?
6. எவ்வளவு முறை நீங்கள் கௌயாஸ்களை விதர்ப்பு கெளரிவீர்கள் - BH/eye camp.
7. எந்த வகை/கருவிகளில் கௌயாஸ்களை விதர்ப்பு கெளரிவீர்கள்.
8. கௌயாஸ்கள் BHக்கு வரீயை போவதற்கு எவ்வளவு காரணங்களை கருவிறார்கள்?
9. VC க்கில் மிக குறைவாக விற்கப்படும் பொருட்கள்/ கருவிகள்?
10. VC க்கு கீழ்க் கீழ்க்கண்ட பொருட்களை வாங்க மாற்ற அனுப்பிவீர்கள்?
11. BH/eye camp செய்யும் கௌயாஸ்களிடம் எந்த விஷயங்களை கருவிறார்கள்?
12. எந்தெந்த (Parameters - முக்கிய இறப்புகளை) நீங்கள் BH/eye camp செல்லும் கௌயாஸ்களுக்கு கருவிறீர்கள்?
13. எவ்வளவு field markers ஒரு VC க்காக வேண்டியவர்களை?
14. ஒரு நினைவு கௌயாஸ்க்
14. நினைவு கௌயாஸ்க்களை VC க்களுக்கு அனுத, எந்த வகையான கருவிகளை அகலது முறைகளை பயன்படுத்துகிறீர்கள்?
15. VC க்கில் காணப்படும் குறைபாடுகள்?

Figure 21: Counselor Questionnaire: Tamil

10.3 Patient:

10.3.1 General Information:

Sr. No	Questions	Responds	Skip
1	Age	1. less than 15 yrs. 2. 15-24 yrs. 3. 25-34 yrs. 4. 35-44 yrs. 5. 45-54 yrs. 6. 55 and above	
2	Gender	1. Male 2. Female	
3	Occupation		
4	Past medical history	1. Yes 2. No 3. Don't know	
5	If yes, mention	_____	
6	Past ocular history	1. Yes 2.No 3. Don't know	
7	If yes,	Since, _____	
8	Family ocular history	1. Yes 2.No 3. Don't know	
9	If yes,	_____	
10	Drug history		

Table 7: Patients Questionnaire: General Information: English

10.3.2 Patient feedback about Refractionist, Counselor and VC:

Sr. No	Questions	Responds	Skip
1	How did you come to know about vision Centre?	1. Friends and family 2. Newspaper 3. Social media 4. Other _____	
2	How long it took you to reach this vision center?	1. less than 15 min 2. 15-30 min 3. more than 30 min	
3	Did you face any difficulty to reach here?	1.Yes 2.No 3.If yes, mention____	
4	Were your all eye related problems are solved here or not?	1.Yes 2.No 3. If no, mention the problem____	
5	Are the spectacles in the vision center affordable for you?	1.Yes 2.No If no, mention the range____	
6	The quality of the spectacle is good or not?	1. Yes 2.No 3. If No, mention the changes____	
7	The delivery of the spectacles is on time or not?	1. Yes 2. No 3. If no, how long delayed____	
8	Would you recommend your friends/family to Sankara vision center?	1. Yes If yes____ 2. No If No____	
9	What is the reason behind not visiting to the BH or eye camp after referring from VC?	1. Dist. from VC to BH 2. Time issue 3. other____	
10	Are you covered under any health insurance? (If No, skip question 11)	1. Yes 2.No	
11	The information regarding health insurance coverage for various surgeries are given to you or not from VC?	1. Yes 2. No If yes, specify____	

12	When did you get last check for BP, Sugar before the previous visit to VC?		
13	Were you informed about the available facilities of checking B.P, Sugar?	1. Yes 2. No	
14	Have you been asked about any drug allergy from Refractionist/ counselor?	1. Yes 2. No	
15	For what reason, the VC is helpful to you?	1. Facilities available 2. Weekly availability 3. Feasible timings 4. Accessibility 5. Others____	

Table 8: Patients Questionnaire: Feedback: English

3. Patient

A) General Information:

Sr. No	Questions	Responds	Skip
1	Age அகம்	1. less than 15 yrs. 2. 15-24 yrs. 3. 25-34 yrs. 4. 35-44 yrs. 5. 45-54 yrs. 6. 55 and above	
2	Gender பாலினம்	1. Male 2. Female	
3	Occupation வியாபாரம்		
4	Past medical history முந்தைய மருத்துவ குறிப்புகள்	1. Yes 2. No 3. Don't know	
5	If yes, mention அகம் :-	_____	
6	Past ocular history முந்தைய பார்வை குறைபாடு	1. Yes 2. No 3. Don't know	
7	If yes,	Since, _____	
8	Family ocular history குடும்பத்தின் பார்வை குறைபாடு	1. Yes 2. No 3. Don't know	
9	If yes,	_____	
10	Drug history மருத்து குறிப்புகள்		

Figure 22: Patients Questionnaire: General Information: Tamil

B) Patient feedback about Refractionist, Counselor and VC

Sr No	Questions	Responds	Skip
1	How did you come to know about vision Centre? VC பற்றி எப்படி அறிந்தீர்கள்?	1 Friends and family 2 Newspaper 3 Social media 4. Other _____	
2	How long it took you to reach this vision center? இவ்வளவு காலத்தில் VC பிசைந்தீர்கள்?	1. less than 15 min 2. 15-30 min 3. more than 30 min	
3	Did you face any difficulty to reach here? எதிர்ப்பு கஷ்டங்கள் உண்டா?	1. Yes 2. No 3. If yes, mention _____	
4	Were your all eye related problems are solved here or not? கண் சம்பந்தப்பட்ட பிரச்சனைகள் தீர்ந்தன? இல்லையா?	1. Yes 2. No 3. If no, mention the problem _____	
5	Are the spectacles in the vision center affordable for you? கண்ணாடி விலை - அதிகமா? உடனடி முடியுமா? முடியாதா?	1. Yes 2. No If no, mention the range _____	
6	The quality of the spectacle is good or not? கண்ணாடியின் தரம் நன்றா/இல்லை?	1. Yes 2. No 3. If No, mention the changes _____	
7	The delivery of the spectacles is on time or not? இருட்டில் கண்ணாடி கிடைத்ததா?	1. Yes 2. No 3. If no, how long delayed _____	
8	Would you recommend your friends/family to Sankara vision center? உங்கள் இயல்பில்/உறவினர், நண்பர் Sankara VC - பரிந்துரைப்பீர்களா?	1. Yes If yes _____ 2. No If No _____	
9	What is the reason behind not visiting to the BH or eye camp after referring from VC? BH/eye camp செல்லாமல் இருப்பதற்கு காரணங்கள் என்ன?	1. Dist. from VC to BH 2. Time issue 3. other _____	
10	Are you covered under any health insurance? (If No, skip question 11) காப்பீடு	1. Yes 2. No	
11	The information regarding the health insurance coverage for various surgeries are given to you or not from VC? காப்பீடு விவரங்கள்	1. Yes 2. No If yes, specify _____	
12	When did you get last check for BP, Sugar before the previous visit to VC? பிப்பிள்டு BP, Sugar பரிசோதனை செய்தீர்கள்?		
13	Were you informed about the available facilities of checking B.P, Sugar? தெரியுமா?	1. Yes 2. No	
14	Have you been asked about any drug allergy from Refractionist/ counselor?	1. Yes 2. No	
15	For what reason, the VC is helpful to you? எந்த காரணங்களால் VC உதவியாக உள்ளது.	1. Facilities available - சுகவசிகள் 2. Weekly availability - வாரந்தோறும் இவ்விடம் 3. Feasible timings - இன்றைத் தேரம் 4. Accessibility - எளிதாக செல்லாம் 5. Others - வேறு	

14- மருந்து Allergy பற்றி கேட்டு விவரம் கேட்கவில்லை/கேட்கினா?

Figure 23: Patients Questionnaire: Feedback: Tamil

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