

**Evaluating the Perception of
Accessibility and Patient
Satisfaction through Telemedicine
at Sankara Vision Centre's.**

Presented by: P. Nivetha (1771)

**Guided by: Dr. Susmit Jain
(Associate Prof.)**



ABOUT THE ORGANISATION



- Founded in 1977, Sankara Eye Foundation India (SEFI) is a 48-year-old not-for-profit organization committed to eliminating preventable and curable blindness across India.
- **Network and Reach:**
SEFI operates a network of 14 super-specialty eye hospitals across 10 Indian states, all equipped with advanced technology and skilled professionals to provide world-class ophthalmic services.
- **Vision:**
"To work towards freedom from preventable and curable blindness."
- **Mission:**
"To provide unmatched eye care through a strong service-oriented team."
- **80:20 Financial Model:**
SEFI follows a unique 80:20 model, wherein 80% of the services are provided free of cost to underprivileged patients, while 20% are paid services catering to those who can afford care. This model ensures financial sustainability without compromising on service quality or reach.
- **Community Outreach through Vision Centre's:**
As part of its community-driven approach, SEFI has established Vision Centre's that act as first points of contact for comprehensive eye care in rural and semi-urban areas. These Centre's facilitate early detection, referral, and treatment of eye conditions.

INTRODUCTION:

- Sankara Vision Centre's are primary eye care units established by Sankara Eye Foundation, India as part of its mission to eliminate preventable blindness, especially in underserved rural and semi-urban regions. These Centre's function as the first point of contact for patients within their communities, offering accessible, affordable, and quality eye care services.
- Sankara Eye Foundation currently operates 40 Vision Centre's across India, with 18 Vision Centre's located in Tamil Nadu. These Centre's follow a hub-and-spoke model, where each vision Centre is connected to a base hospital, ensuring timely access to both primary and specialized eye care.
- These Centre's play a critical role in strengthening community-based ophthalmic services and expanding the reach of the foundation's mission to underserved populations.
- **KEY FUNCTIONS OF VISION CENTRE'S:**
- **Basic Eye Screening** – Initial vision assessments using tools like visual acuity charts, autorefractors, and slit lamps.
- **Teleophthalmology Consultations** – Remote video consultations with ophthalmologists at the base hospital for expert diagnosis and treatment advice.
- **Diagnosis & Referral** – Identifying refractive errors, cataracts, diabetic retinopathy, and other common eye problems, with timely referrals for surgical or specialized care.
- **Spectacle Dispensing** – On-the-spot prescription and delivery of affordable spectacles.
- To address rising diabetic eye conditions, monthly DR camps were systematically held at the Vision Centre's, improving outreach and preventive care.
- **Follow-up Care** – Post-surgical follow-up, medication review, and monitoring of chronic eye conditions.



OBJECTIVES:

- **Primary Objective:**
- To assess the overall satisfaction of patients utilizing telemedicine services at vision centres.
- **Secondary Objectives:**
- To evaluate patient-perceived accessibility and efficiency of eye care services.
- To evaluate the quality of communication, physical environment, responsiveness, and the client–health care provider relationship at vision centres.
- To explore patient experiences and perceived usefulness of teleconsultations for addressing their eye care needs.

REVIEW OF LITERATURE:

Author(s)	Year	Location	Title of Study	Key Features
Paul et al.	2006	Rural South India	Patient satisfaction levels in teleconsultation services in rural South India	Found that patient involvement (asking questions) during teleconsultation improved satisfaction levels.
Kovai et al.	2010	Andhra Pradesh, India	Patient satisfaction and perceptions of quality of care at vision centres in rural India	Better satisfaction in larger villages due to accessibility and staff behaviour.
Kovai et al.	2012	Rural India	Barriers to accessing eye care services among visually impaired populations in rural India	Identified staff behaviour, location, and accessibility as key drivers of satisfaction.
John et al.	2012	Rural India	The Sankara Nethralaya mobile teleophthalmology model for comprehensive eye care delivery in rural India	Demonstrated feasibility of a mobile teleophthalmology unit providing comprehensive eye care in rural Indian settings.
Kurji et al.	2013	Africa	Improving diabetic retinopathy screening through teleophthalmology in sub-Saharan Africa	Teleophthalmology improved access and early detection of diabetic retinopathy.
Tan et al.	2017	International (Systematic Review)	Real-time teleophthalmology versus face-to-face consultation: A systematic review	Compared real-time teleophthalmology with in-person consultations, showing similar clinical outcomes and patient satisfaction.
Host et al.	2018	Rural Western Australia	Real-time teleophthalmology video consultation: analysis of patient satisfaction in rural Western Australia	Reported high patient satisfaction with real-time video consultations in remote areas.

HYPOTHESIS STATEMENT:

Null Hypothesis (H_0):

Teleconsultation services at vision centres do not significantly influence patient satisfaction compared to services provided without video consultation.

Alternative Hypothesis (H_1):

Teleconsultation services at vision centres significantly enhance patient satisfaction, particularly in aspects such as communication with the doctor, clarity of diagnosis, perceived quality of care, and overall patient experience compared to non-video consultations.

RESEARCH METHODOLOGY:

- **Research Design:** Descriptive cross-sectional study

Setting & Sample

- Conducted across **8 Vision Centres** of Sankara Eye Foundation:
 - *Coimbatore Unit:* Annur, Perur, Sathyamangalam, Karamadai, Papampatti (n=185)
 - *Krishnakovil Unit:* Aruppukottai, Rajapalayam, Sivakasi(n=115)
- **Sample Size: 300 patients**
 - 255 had video consultations
 - 45 did not undergo teleconsultation
- **Sampling Technique:** Convenience sampling to include both types of service users.
- **Duration of Study:** 3 months (04th April – 5th June 2025)

Tool Used:

- **Structured Google Form** with informed verbal consent
- Conducted through:
 - 206 **face-to-face interviews**
 - 94 **telephonic interviews**

Study Population:

- **Inclusion Criteria:** Patients who visited the Vision Centres :
 - Received a teleophthalmology consultation (video call consultations).
 - Did not undergo a teleconsultation but received care through in-person services.
 - Patients who are willing and able to provide informed consent to participate in the study.
- **Exclusion Criteria:**
 - Patients below the age of 18 years.
 - Patients with incomplete or missing consultation records at the time of data collection.
 - Patients who are unwilling or unable to provide informed consent.

Pilot Study:

- Responses from 35 patients were collected from Annur and Perur over a span of four days.
- Helped refine the tool by adding 3 critical questions:
 1. How long does the patient wait for the teleconsultation?
 2. If teleconsultation doesn't happen, what is the reason?
 3. What is the specific reason for patient satisfaction (doctor consultation, staff behaviour, or service affordability)?

Data Analysis:

- **Microsoft Excel** used for: Mean, median, frequency & percentage
- **SPSS Software used for:** Chi-square test for significance

Ethical Considerations:

- The respective department heads have thoroughly reviewed and discussed the ethical aspects related to the proposed dissertation topic. Based on their evaluation, they have confirmed the ethical appropriateness of the study and have granted approval to proceed with the research.
- No personal identifiers collected, Participation was voluntary & Data kept confidential.

COFOUNDING FACTORS:

- **Time Constraints Affecting Doctor–Patient Interaction**

→ During busy hours, doctors may focus on completing consultations quickly, leaving little time for personal interaction. Optometrists often have to actively remind doctors to engage with patients, but this rushed communication may still reduce patient satisfaction, even when care is provided.

- **Digital Literacy**

→ Patients' ability to use or understand teleconsultation may affect their satisfaction, independent of the quality of the service.

- **Previous Eye Care Experience**

→ Those who had prior treatment experiences may compare and rate the service differently.

- **Companion Influence**

→ Responses might be influenced by accompanying family members' perceptions.

- **Time of Day / Peak Hours**

→ Patients attending during peak hours may experience more delays and less attention, influencing their perception.

BIASES:

- **Response Bias**

- Some patients may provide socially desirable answers, especially during face-to-face or phone interviews.

- Participants avoid giving negative feedback to be polite, especially in face-to-face interactions.

- **Interviewer Bias**

- Responses might be influenced by the tone or manner of the interviewer.

LIMITATIONS:

- Feedback from caretakers of children or pediatric satisfaction was not considered.

DELIMITATIONS:

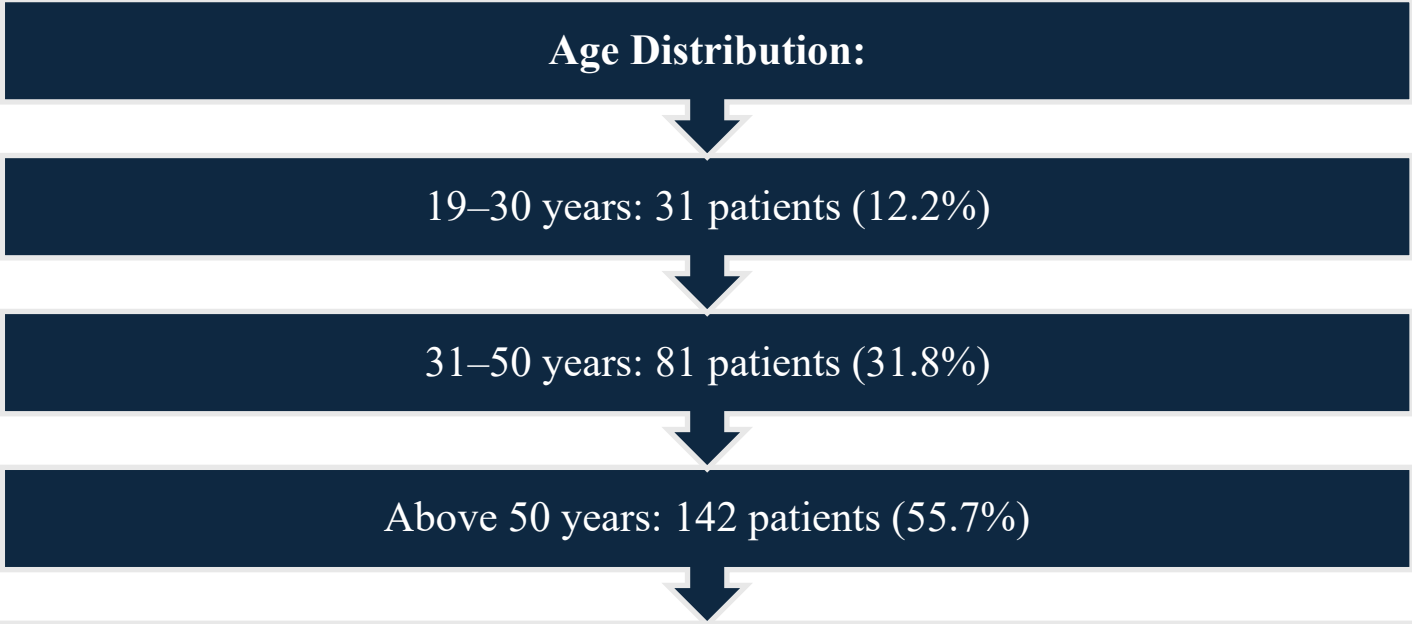
- Only 8 vision centres were included, based on access and feasibility.



ANALYSIS

Demographic Profile of Respondents:

Age Distribution:



```
graph TD; A[Age Distribution:] --> B[19–30 years: 31 patients (12.2%)]; B --> C[31–50 years: 81 patients (31.8%)]; C --> D[Above 50 years: 142 patients (55.7%)];
```

19–30 years: 31 patients (12.2%)

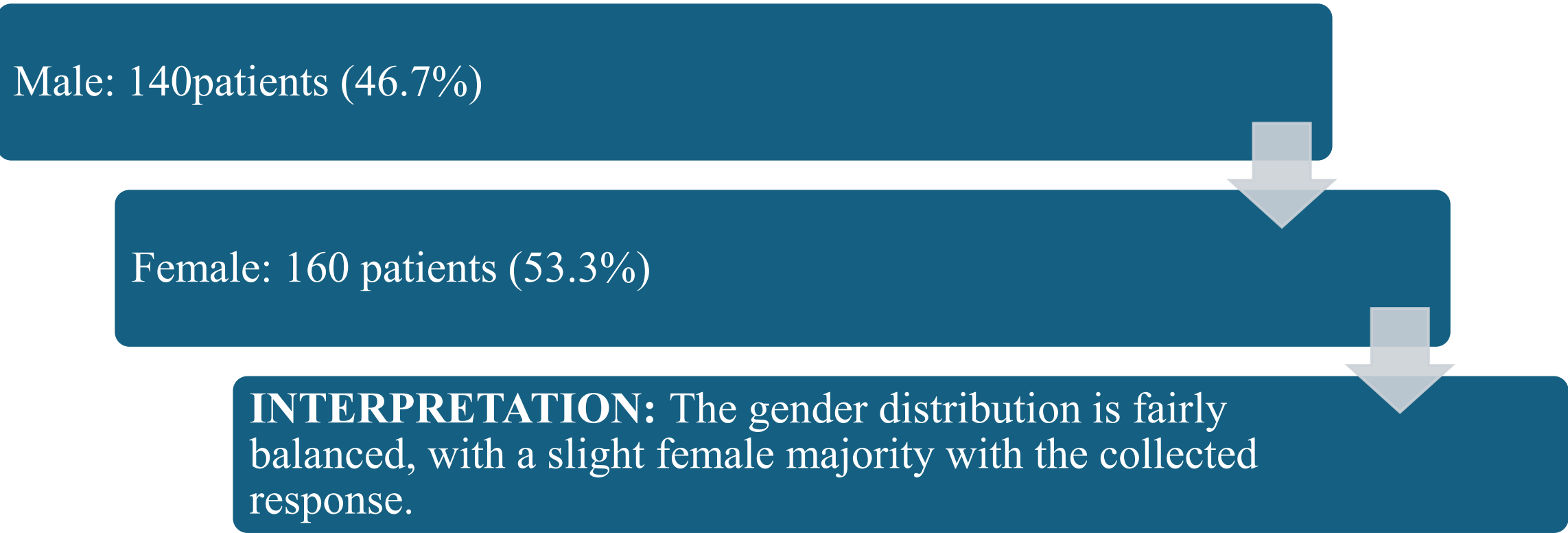
31–50 years: 81 patients (31.8%)

Above 50 years: 142 patients (55.7%)

INTERPRETATION: The majority of the patients (over 55%) were aged above 50 years, reflecting that elderly populations are the primary users of Vision Centre services. The data highlights the importance of tailoring services for geriatric eye care.

Gender Distribution:

Male: 140patients (46.7%)



```
graph TD; A[Male: 140patients (46.7%)] --> B[Female: 160 patients (53.3%)]; B --> C[INTERPRETATION: The gender distribution is fairly balanced, with a slight female majority with the collected response.];
```

Female: 160 patients (53.3%)

INTERPRETATION: The gender distribution is fairly balanced, with a slight female majority with the collected response.

1.VIDEOCALL CONSULTATION DATA (n=255)

S.NO	CATEGORY	FACTORS	Mean	P Value	SIGNIFICANT (p<0.05)
1	ACCESS TO CARE	Was the Vision Centre easy to reach from your home?	1.12	0.2823	NO
		How long did it take you to travel to our vision centre today?	1.48	0.0316	YES
2	PATIENT SATISFACTION IN TELECONSULTATION SERVICE	If yes, how long does the patient wait for the teleconsultation?	1.43	0.0029	YES
		Did you feel comfortable discussing your eye health issues with the doctor through teleconsultation?	1.15	0.00	YES
		Did you feel the doctor was able to understand your eye problem well during the teleconsultation?	1.15	0.00	YES
		Did the doctor clearly explain your eye condition and next steps (like medication, further tests, or referral)?	1.14	0.00	YES
		How satisfied were you with the overall teleconsultation experience?	1.17	0.00	YES
		Did you feel that the telemedicine at the clinic allowed you to access an expert doctor's services?	1.14	0.00	YES
3	OVERALL SERVICE	Does having the vision centre near your area help you get diagnosed more quickly?	1.04	0.00	YES
		Did you feel that the service provided by the vision Centre was affordable?	1.01	0.8123	NO
		Did you feel you received quality eye care services at the vision centre?	1.06	0.00	YES
		If yes, specific reason for the satisfaction?		0.00	YES
		Would you recommend the vision centre to others?	1.03	0.00	YES
4	PATIENT ENVIRONMENT	Did the environment feel safe and comfortable to you?	1.02	0.00	YES

S.NO	CATEGORY	FACTORS	Mean	P Value	SIGNIFICANT (p<0.05)
1	ACCESS TO CARE	Was the Vision Centre easy to reach from your home?	1.12	0.2823	NO
		How long did it take you to travel to our vision centre today?	1.48	0.0316	YES

INTERPRETATION: While both ease of reaching the Vision Centre and travel time were rated positively by patients, only travel time was found to be statistically significant ($p = 0.0316$) in influencing satisfaction. This suggests that patients living within a closer radius of the centre felt more comfortable using the service.

2	PATIENT SATISFACTION IN TELECONSULTATION SERVICE	If yes, how long does the patient wait for the teleconsultation?	1.43	0.0029	YES
		Did you feel comfortable discussing your eye health issues with the doctor through teleconsultation?	1.15	0.00	YES
		Did you feel the doctor was able to understand your eye problem well during the teleconsultation?	1.15	0.00	YES
		Did the doctor clearly explain your eye condition and next steps (like medication, further tests, or referral)?	1.14	0.00	YES
		How satisfied were you with the overall teleconsultation experience?	1.17	0.00	YES
		Did you feel that the telemedicine at the clinic allowed you to access an expert doctor's services?	1.14	0.00	YES

INTERPRETATION: All six factors in the patient satisfaction domain showed statistically significant associations with overall satisfaction ($p < 0.05$). Specifically, shorter wait times for teleconsultation (mean = 1.43, $p = 0.0029$) were significantly linked to higher satisfaction. Additionally, comfort in communication (mean = 1.15), the doctor's understanding of the issue (mean = 1.15), clarity in explanations (mean = 1.14), perceived access to expert care (mean = 1.14), and the overall teleconsultation experience (mean = 1.17) were all rated positively and significantly influenced patient satisfaction. These findings confirm that both the **interpersonal quality and clinical effectiveness** of teleconsultation strongly drive positive patient experiences.

3	OVERALL SERVICE	Does having the vision centre near your area help you get diagnosed more quickly?	1.04	0.00	YES
		Did you feel that the service provided by the vision centre was affordable?	1.01	0.8123	NO
		Did you feel you received quality eye care services at the vision centre?	1.06	0.00	YES
		If yes, specific reason for the satisfaction?		0.00	YES
		Would you recommend the vision centre to others?	1.03	0.00	YES

INTERPRETATION: Analysis of the “overall service” domain indicates that several factors had a significant influence on patient satisfaction. Patients who felt that having a nearby vision centre helped them get diagnosed more quickly (mean = 1.04, $p = 0.000$) and those who believed they received quality eye care (mean = 1.06, $p = 0.000$) reported significantly higher satisfaction levels. Additionally, patients who cited specific reasons for satisfaction and those willing to recommend the centre to others (mean = 1.03, $p = 0.000$) further reflect the strength of service delivery. In contrast, the perceived affordability of the service (mean = 1.01, $p = 0.8123$) did not show a statistically significant impact, suggesting that **the quality, accessibility, and trust in care were more important to patients than cost.**

4	PATIENT ENVIRONMENT	Did the environment feel safe and comfortable to you?	1.02	0.00	YES

INTERPRETATION: Patients felt the vision centre was safe and comfortable (mean = 1.02), and this had a significant impact on their satisfaction ($p = 0.000$). A positive environment clearly helped build trust and improved their overall experience.

2. NO VIDEOCALL CONSULTATION DATA (n=45)

S.NO	CATEGORY	FACTORS	Mean	P Value	SIGNIFICANT (p<0.05)
1	ACCESS TO CARE	Was the Vision Centre easy to reach from your home?	1.31	0.0211	YES
		How long did it take you to travel to our vision centre today?	1.53	0.0937	NO
2	OVERALL SERVICE	Does having the vision centre near your area help you get diagnosed more quickly?	1.04	0.149	NO
		Did you feel that the service provided by the vision centre was affordable?	1.00	1.00	NO
		Did you feel you received quality eye care services at the vision centre?	1.02	1.00	NO
		If teleconsultation doesn't happen, the reason is:	NA	0.8774	NO
		Would you recommend the vision centre to others?	1.00	1.00	NO
3	PATIENT ENVIRONMENT	Did the environment feel safe and comfortable to you?	1.00	1.00	NO

S.NO	CATEGORY	FACTORS	Mean	P Value	SIGNIFICANT (p<0.05)
1	ACCESS TO CARE	Was the Vision centre easy to reach from your home?	1.31	0.0211	YES
		How long did it take you to travel to our vision centre today?	1.53	0.0937	NO

INTERPRETATION: For patients who didn't use video consultation, satisfaction was strongly linked to how easy it was to reach the vision centre ($p = 0.0211$). It wasn't about how long the travel took ($p = 0.0937$), but more about how convenient and nearby the centre felt. This shows that for non-videocall patients, accessibility played a bigger role in shaping their overall experience.

2	OVERALL SERVICE	Does having the vision centre near your area help you get diagnosed more quickly?	1.04	0.149	NO
		Did you feel that the service provided by the vision centre was affordable?	1.00	1.00	NO
		Did you feel you received quality eye care services at the vision centre?	1.02	1.00	NO
		If teleconsultation doesn't happen, the reason is:	NA	0.8774	NO
		Would you recommend the vision centre to others?	1.00	1.00	NO

INTERPRETATION: In the group that did not receive video consultation, none of the overall service factors showed a statistically significant impact on satisfaction. Whether the vision centre was nearby ($p = 0.149$), whether the care was affordable or of good quality ($p = 1.000$), or even if patients would recommend the centre ($p = 1.000$) — none of these aspects were strong enough to influence how satisfied patients felt.

This suggests that in the absence of a direct doctor interaction (via video consultation), patients may not have formed strong impressions about the quality or value of the service. Their expectations may have been lower or less focused on service delivery, and more centred on just receiving basic care.

The lack of significance across all key indicators reveals a clear gap: without teleconsultation, patients felt the service was standard, but not strong enough to make a memorable or impactful difference in their satisfaction.

S.NO	CATEGORY	FACTORS	Mean	P-Value	SIGNIFICANT (p<0.05)
3	PATIENT ENVIRONMENT	Did the environment feel safe and comfortable to you?	1.00	1.00	NO

Although patients rated the environment as safe and comfortable (mean = 1.00), this factor **did not significantly influence their satisfaction** (p = 1.000).

This suggests that while the clinic environment met basic expectations, **it wasn't a strong driver of satisfaction** for patients who did not receive teleconsultation. In the absence of personal interaction with a doctor, environmental comfort alone wasn't enough to make the experience stand out.

3. COMPARISON: Video Call Consultation vs No Video Call Consultation (n=300)

Category	Factor	Mean (Video)	Mean (No Video)	Significant in Video Call	Significant in No Video Call
Access to Care	Was the Vision centre easy to reach from your home?	1.12	1.31	No	Yes
	How long did it take you to travel to our vision centre today?	1.48	1.53	Yes	No
Patient satisfaction in teleconsultation service	Wait time for the teleconsultation	1.43	NA	Yes	NA
	Comfort discussing with the doctor	1.15	NA	Yes	NA
	Doctor's understanding of the issue	1.15	NA	Yes	NA
	Explanation of condition and next steps	1.14	NA	Yes	NA
	Overall teleconsultation experience	1.17	NA	Yes	NA
	Access to expert doctor via telemedicine	1.14	NA	Yes	NA
Overall Service	Vision centre near home helped diagnosis	1.04	1.04	Yes	No
	Service was affordable	1.01	1.00	No	No
	Quality of eye care	1.06	1.02	Yes	No
	Reason for satisfaction	NA	NA	Yes	No
	Recommendation of centre to others	1.03	1.00	Yes	No
Patient Environment	Environment felt safe and comfortable	1.02	1.00	Yes	No

- **INTERPRETATION:** The comparative analysis clearly demonstrates that patients who received video consultations experienced significantly higher satisfaction, influenced by a broader range of service-related factors, compared to those who did not.
- **Video Consultation Group:**
 - In the video consultation group, almost every measured factor—including wait time, ease of communication with the doctor, clarity of explanations, and perceived quality of care was statistically significant in shaping patient satisfaction. Patients also felt more confident in recommending the centre, perceived better access to expert care, and rated the environment as safer and more comfortable.
 - This suggests that teleconsultation not only improved clinical interaction but also enhanced patients' trust, understanding, and overall comfort with the service. The presence of the doctor, even virtually, appeared to elevate the perceived quality of the entire experience.
- **No Video Consultation Group:**
 - In contrast, patients who did not receive teleconsultation had very limited factors influencing satisfaction. The only significant determinant was the ease of reaching the centre highlighting that in the absence of a doctor-patient interaction, logistics became the primary lens through which care was evaluated. Critical service elements such as affordability, quality of care, environment, and recommendation had no statistical influence on their satisfaction.
 - This indicates a critical engagement gap without teleconsultation, patients may have received services passively, lacking the connection and reassurance typically fostered through interaction with a doctor.

4. UNIT-WISE PERFORMANCE COMPARISON

UNIT	STAFF BEHAVIOUR IS GOOD	SERVICE AFFORDABILITY	DOCTOR'S TELECONSULTATION
COIMBATORE (n=185)	60.20%	36.60%	3.60%
KRISHNAKOVIL (n=115)	75.00%	20.67%	4.00%

The comparative analysis of patient satisfaction across the two units — **Coimbatore (5 centres)** and **Krishnakovil (3 centres)**

* **Krishnakovil Unit**

- Achieved an average satisfaction rate of **98.79%**, reflecting consistently high patient approval.
- The unit performed strongly on staff behavior (average 75%) — a key driver of satisfaction.
- Although doctor's teleconsultation was minimal (avg. 4%), satisfaction remained high, indicating that interpersonal aspects and overall service quality had a significant positive influence.

* **Coimbatore Unit**

- Reported a moderate satisfaction rate of **82.74%**.
- Some centres (e.g., Perur, Annur) showed excellent outcomes, especially where staff behavior and affordability were perceived positively.
- The variation across centres (e.g., Papampatti: 71% satisfaction with lower staff behavior score) suggests that while the foundation of care is strong, standardization in service experience is required.
- Doctor's teleconsultation was slightly more prevalent in this unit but needs more consistent integration to reflect in satisfaction scores.

SUGGESTIONS:

- **Strengthen Doctor–Patient Interaction**
- Encourage doctors to engage patients with simple, reassuring communication like “your eyes are fine, don’t worry.”
- Sensitizing doctors on regional language and culturally appropriate communication would further enhance patient trust.
- **Ensure Optometrist Availability**
- During public or workplace screenings, ensure a system where another optometrist or trained assistant is present at the Vision centre. This prevents patient dropouts at the centre during field visits and maintains continuity of care.
- To address the issue of patients missing out on care, hospital have now implemented a plan where two optometrists will be present at all times during field visits. This change is critical and must be implemented as soon as possible to ensure that no patient leaves without receiving proper care.
- **Upgrade Vision centre Signboards:** Replace old, faded boards with bright, attractive signage to draw attention and improve visibility.
- Use less text and more relevant images or icons to represent services like:
 -  Eye screening
 -  Doctor consultation
 -  Teleconsultation
- Place boards at visible roadside spots to guide new patients easily.

Conclusion:

- The study highlights that teleconsultation services at Vision centres positively influence patient satisfaction, particularly in areas like accessibility, clarity of communication, and overall care quality. Patients who received video consultations reported significantly higher satisfaction compared to those who did not.
- However, the study also revealed that direct interaction with doctors was limited, with some patients expressing a desire for more personal and reassuring engagement during consultations. This indicates a need to enhance doctor–patient interaction, even through small conversations to build trust and confidence.

Other key areas for improvement include:

- Increasing community awareness of available services.
- Updating vision centre signage for better visibility and appeal.

REFERENCE:

1. Kovai V, Rao GN, Holden B, Sankaridurg P, Thulasiraj RD. Comparison of patient satisfaction with services of vision centres in rural areas of Andhra Pradesh, India. *Indian J Ophthalmol*. 2010 May;58(3):227–32. [Available from: Indian Journal of Ophthalmology](#)
2. Kovai V, Rao GN, Holden B, Thulasiraj RD. Key factors determining success of primary eye care through vision centres in rural India: Patients' perspectives. *Indian J Ophthalmol*. 2012;60(5):487–92. [Available from: Indian Journal of Ophthalmology](#)
3. Thulasiraj RD, Karpagam T, Shirley N, Anand R, Praveen V. Primary eye care in India: The vision centre model. *Indian J Ophthalmol*. 2020;68(2):333–339. [Available from: Indian Journal of Ophthalmology](#)
4. Smith AC, Thomas E, Snoswell CL, Haydon H, Mehrotra A, Clemensen J, Caffery LJ. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). *Telemed J E Health*. 2020 May;26(5):309–13. [Available from: Pediatric Ophthalmology Provider and Staff Attitudes and Patient Satisfaction in Telehealth Implementation During COVID-19 | Telemedicine and e-Health](#)
5. Alibhai SM, Han RK, Naglie G. Medication education of acutely hospitalized older patients. *Am J Geriatr Pharmacother*. 2003 Dec;1(1):40–7. [Available from: Assessing Patients' Satisfaction with the Quality of Ophthalmic Services at Saint John Gaza Eye Clinic](#)
6. Paul PG, Raman R, Rani PK, Deshmukh H, Sharma T. Patient satisfaction levels during teleophthalmology consultation in rural South India. *Telemed J E Health*. 2006,Oct;12(5):571–8. [Availablefrom:sciencedirect.com+2pubmed.ncbi.nlm.nih.gov+2pmc.ncbi.nlm.nih.gov+2](#)
7. Appukumran R, Shyamsundar K, Agrawal M, Khurana R, Pannu A, Kumar P. Eight years' experience in mobile teleophthalmology for diabetic retinopathy screening. *Med Hypothesis Discov Innov Ophthalmol*. 2023;11(4):162–70. [Availablefrom:pubmed.ncbi.nlm.nih.gov+1pmc.ncbi.nlm.nih.gov+1](#)

