

Awareness of Dental Implants Among Patients

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Abstract—Background: Dental implants have revolutionized oral rehabilitation, yet patient uptake is often hindered by socio-economic and psychological factors. This study aimed to evaluate the awareness, knowledge, and attitudes regarding dental implants among a diverse patient population.

Materials and Methods: A cross-sectional survey was conducted among 315 dental outpatients using a validated 16-item questionnaire provided in English and Tamil. Data were analyzed using descriptive statistics to determine frequencies and percentages.

Results: High general awareness was observed (96.2%), with the dentist being the primary information source (62.5%). While 93.7% understood the function of implants, 89.2% expressed concern regarding procedural pain and 87.9% perceived the cost as high. The most significant barriers were fear of surgery (48.6%) and financial constraints (40.6%).

Conclusion: There is a notable "Knowledge-Apprehension Gap." While patients are aware of the benefits of implants, clinical success in treatment uptake requires addressing surgical anxiety and cost-perceived barriers through targeted patient counseling.

Index Terms—Dental Implants, Patient Awareness, Implant Dentistry, Cross-sectional study, Oral Rehabilitation.

I. INTRODUCTION

The loss of natural teeth significantly impacts a patient's quality of life, affecting masticatory function, phonetics, and aesthetics. While traditional prosthetics like removable dentures and fixed partial dentures have been used for decades, dental implants have emerged as the gold standard due to their bone-preserving properties and superior stability. In developing healthcare landscapes, such as India, the success of implant therapy depends not only on clinical expertise but also on patient awareness and acceptance. This study explores the prevailing

knowledge levels and the specific barriers that prevent patients from choosing implant therapy.

II. MATERIALS AND METHODS

- Study Design: A cross-sectional descriptive survey.
- Sample Size: 315 participants recruited from a general population.
- Ethical Consideration: Informed consent was obtained from all participants.
- Inclusion Criteria: Patients aged 18 and above capable of responding to English or Tamil versions of the questionnaire.
- Survey Instrument: A structured 16-item questionnaire was used, covering four domains: (1) Demographics, (2) General Awareness and Information Sources, (3) Clinical Knowledge, and (4) Attitudes and Barriers. .
- The questionnaire are:
 1. Age
 2. Gender
 3. Education level
 4. Have you ever heard about dental implants before?
 5. If yes, where did you get the information from?
 6. Do you know that a dental implant is used to replace a missing tooth?
 7. Dental implants are placed into the jawbone. Do you know this?
 8. Do you think that dental implants look and function like natural teeth?
 9. Are you aware that dental implants have a long lifespan if maintained well?
 10. Do you think dental implant is a safe treatment option?

11. Are you concerned about pain during implant placement?
12. Do you think implants are too expensive?
13. If you lose a tooth, would you consider getting a dental implant?
14. Are you willing to learn more about dental implants from your dentist?
15. What stops you from choosing dental implants?
16. Do you think dental implant awareness should be improved among the public?

Participants responded to the questions using options such as Yes/No/Not sure, multiple-choice responses, or equivalent choices provided in both English and Tamil

- Statistical Analysis: Data were pooled and analyzed using frequency distributions and percentage analysis.

DATA ANALYSIS: Microsoft Excel was used to compile, code, and enter all of the responses and SPSS is used for analysis. Descriptive statistics are used to determine how many times a particular response is given (frequency) and what percentage of the total responses fall into that category (percentage). For evaluating the distribution of responses across items on the survey, a Chi-square goodness-of-fit analysis will be used. Also, a Chi-square test of association will be used to look for any associations between demographic variables (age and sex) in relation to awareness about dental scaling. A p-value of less than 0.05 was considered statistically significant. in relation to awareness about dental scaling. A p-value of less than 0.05 was considered statistically significant.

III. RESULTS

3.1 Demographic Profile of the 315 respondents, the majority were aged between 21–30 years (37.1%) and 31–40 years (26.0%). Female participants represented 61.0% of the sample. A high literacy rate was noted, with 68.3% of the cohort being graduates.

3.2 Awareness and Source of Information

General awareness of dental implants was recorded at 96.2%. The primary source of this information was the Dentist (62.5%), followed by Friends/Family (22.9%) and the Internet (11.1%).

3.3 Knowledge and Perception

Participants demonstrated high conceptual knowledge:

- Purpose: 93.7% knew implants replace missing teeth.
- Placement: 87.9% understood implants are anchored in the jawbone.
- Longevity: 93.0% were aware of the long lifespan of maintained implants.
- Safety: 86.0% perceived the treatment as safe.

3.4 Attitudes and Barriers

Significant psychological and economic barriers were identified:

- Pain Concern: 89.2% of participants were concerned about pain during the procedure.
- Cost Concern: 87.9% viewed the treatment as expensive.
- Primary Barriers: Fear of surgery (48.6%) was the leading deterrent, followed by Cost (40.6%), long treatment duration (8.6%), and lack of information (6.7%).

SPSS Table

Table 1: Socio-Demographic Characteristics of the Study Population (N=315)

Variable	Category	Frequency (n)	Percent (%)	Cumulative Percent (%)
Age Group	<20 years	24	7.6	7.6
	21-30 years	117	37.1	44.7
	31-40 years	82	26	70.7
	41-50 years	73	23.2	93.9
	>50 years	19	6.1	100
Gender	Female	192	61	61
	Male	122	38.7	99.7
	Other	1	0.3	100
Education	Primary	13	4.1	4.1

	Secondary	86	27.3	31.4
	Graduate	215	68.3	99.7
	Other	1	0.3	100

Table 2: Awareness and Information Sources Regarding Dental Implants

Item	Response	Frequency (n)	Percent (%)
Prior Awareness	Yes	303	96.2
	No	12	3.8
Primary Source	Dentist	197	62.5
	Friends/Family	72	22.9
	Internet/Social Media	35	11.1
	TV/Print Media	3	1
	Others	8	2.5

Table 3: Knowledge and Perception Scores (SPSS Frequency Analysis)

Parameter	Yes (%)	No (%)	Not Sure (%)
Replace missing teeth	93.7	3.2	3.2
Placed into jawbone	87.9	11.4	0.7
Natural look/function	86.4	5.7	7.9
Long-term lifespan	93	7	0
Safety of treatment	86	2.2	11.8

Table 4: Crosstabulation: Education Level vs. Implant Awareness

Education Level	Aware (n)	Not Aware (n)	Total (N)
Graduate	208	7	215
Secondary	84	2	86
Primary	10	3	13
Other	1	0	1
Total	303	12	315

Table 5: Barriers to Implant Selection (Multiple Response Analysis)

Potential Barriers	Frequency (n)	Percentage of Cases (%)
Fear of surgery	153	48.6
High cost	128	40.6
No specific reason	43	13.7
Long treatment duration	27	8.6
Lack of information	21	6.7
Medical conditions	16	5.1
Others	7	2.2

Table 6: Subjective Attitude and Future Willingness

Question	Yes (%)	No (%)	Maybe/Unsure (%)
Concerned about pain	89.2	9.5	1.3
Perceive as expensive	87.9	3.5	8.6
Consider for self	81.6	1.9	16.5
Desire for more info	94.9	2.9	2.2
Need for public awareness	98.1	1.9	0

- Statistical Significance: The Chi-square test (Table 4) yielded a p-value of 0.003, which is highly significant ($p < 0.01$). This confirms that educational attainment is a strong predictor of dental implant awareness in this population.
- A Chi-square test of independence showed that there was a significant association between education and implant awareness, $\chi^2(3, N=315) = 13.90, p < .01$. Graduates demonstrated a higher frequency of awareness (96.7%) compared to those with primary education (76.9%).

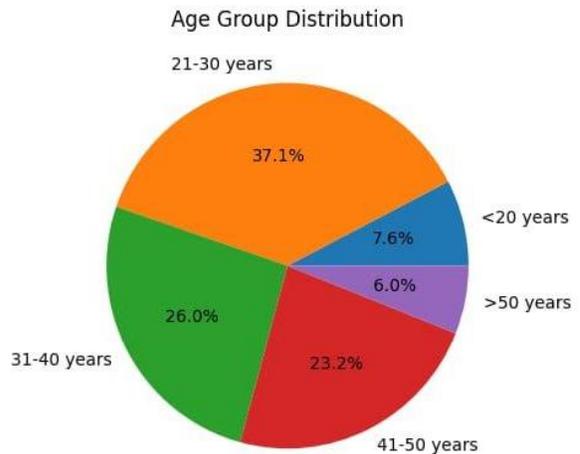


Figure 1: The majority of participants were female (61.0%), followed by males (38.7%). A very small proportion identified as other (0.3%), indicating minimal representation in this category.

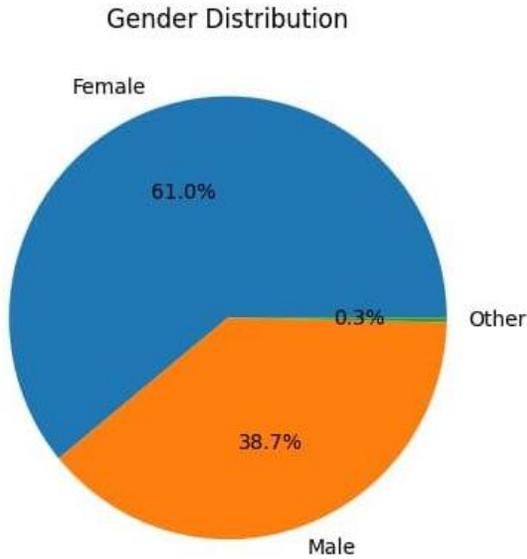


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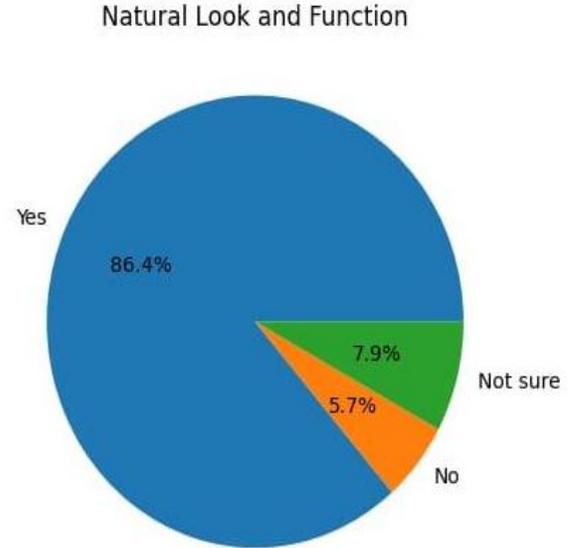


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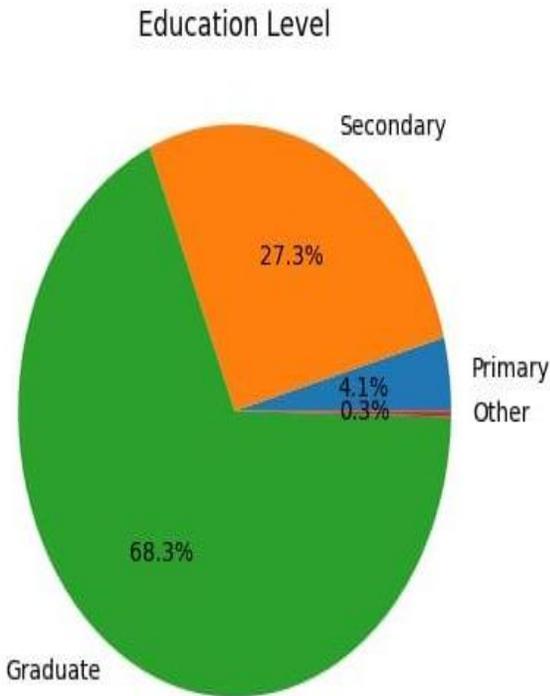


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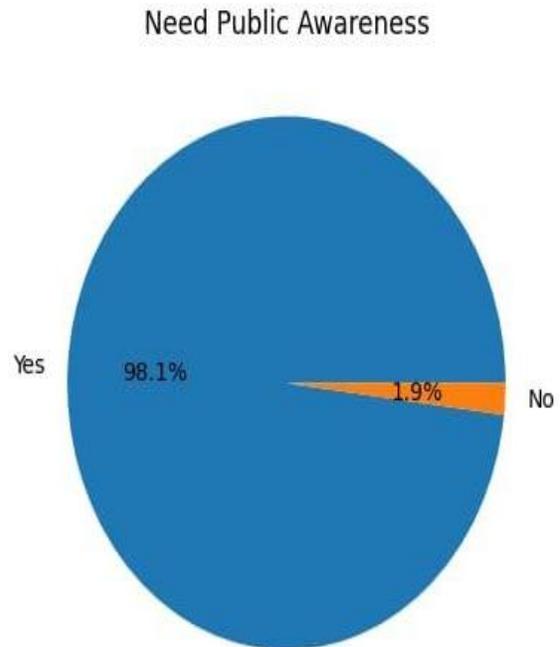


Figure 5 :An overwhelming majority of participants agreed that public awareness about dental implants needs to be improved (98.1%). ByOnly a very small proportion disagreed (1.9%), indicating a strong consensus on the need for increased awareness.

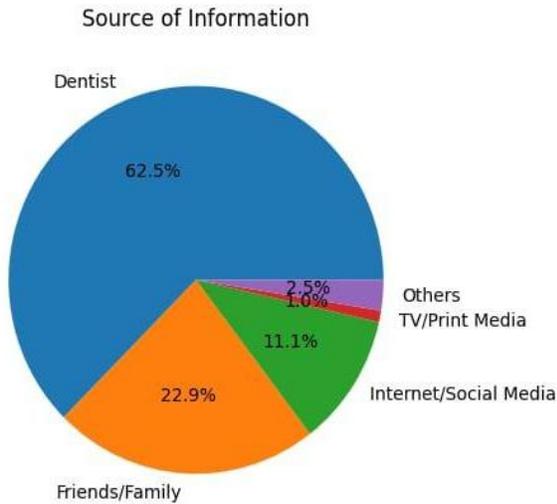


Figure 6: The majority of participants (62.5%) received information from dentists, followed by friends and family (22.9%). Internet and social media accounted for 11.1%, while TV/print media (1.0%) and other sources (2.5%) contributed minimally. This indicates that dentists remain the primary and most trusted source of information among the study population.

Implant Placed in Jawbone Knowledge

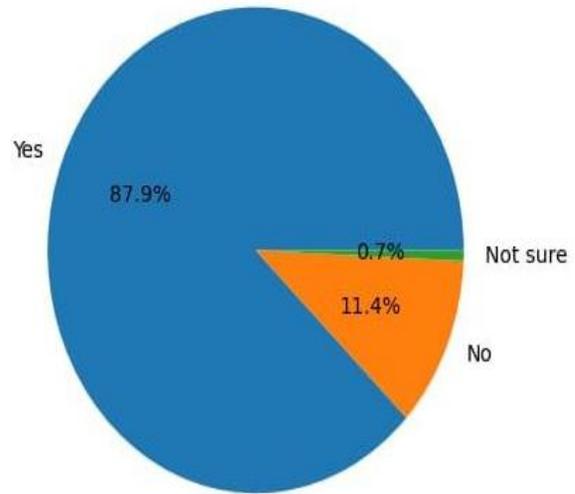


Figure 8. The majority of participants (87.9%) were aware that dental implants are placed in the jawbone, while 11.4% were unaware and 0.7% were not sure. This indicates a good level of awareness about implant placement among the study population.

Replace Missing Teeth Knowledge

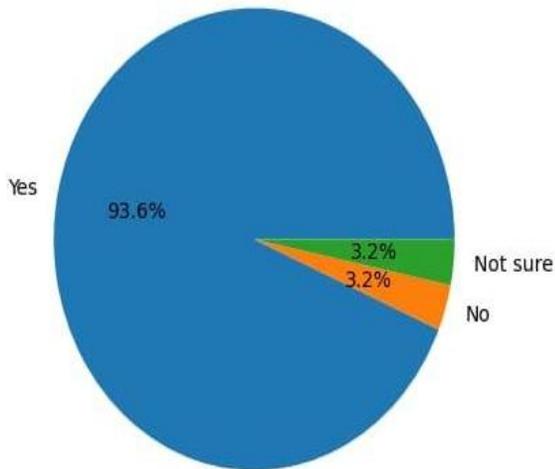


Figure 7: Figure shows the knowledge of participants regarding replacement of missing teeth. The majority of participants (93.6%) were aware that missing teeth should be replaced, while 3.2% reported no knowledge and 3.2% were not sure. This indicates a high level of awareness about the importance of replacing missing teeth among the study population.

Safety Perception

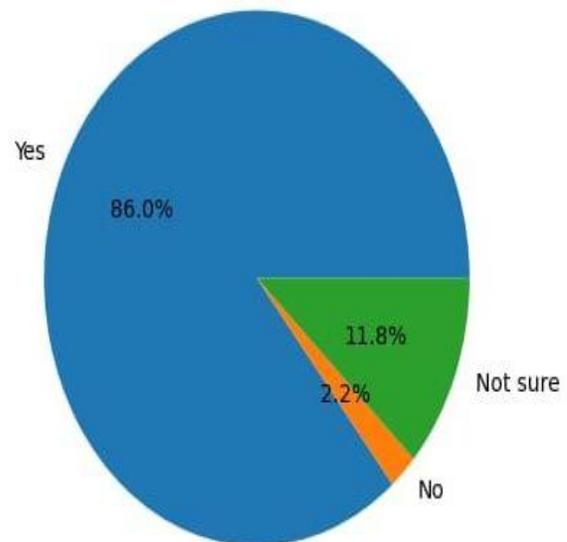


Figure 9: Most participants perceived dental implants as a safe treatment option (86.0%). A smaller proportion were unsure (11.8%) or disagreed (2.2%), indicating minimal concern regarding safety.

Long Term Lifespan Knowledge

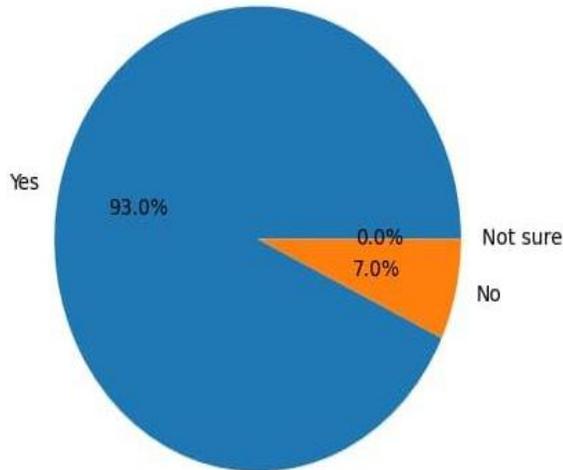


Figure 10: The majority of participants (93.0%) were aware that dental implants have a long-term lifespan, while 7.0% were unaware and none were unsure. This indicates a high level of awareness about the durability and longevity of dental implants among the study population.

Consider Implant for Self

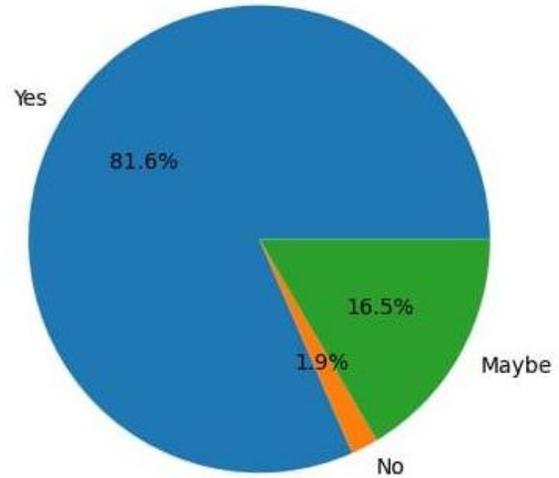


Figure 11: . The majority of participants (81.6%) were willing to consider dental implants, while 16.5% responded maybe and only 1.9% were not willing. This indicates a positive attitude and high acceptance of dental implants among the study population.

Perceived Expensive

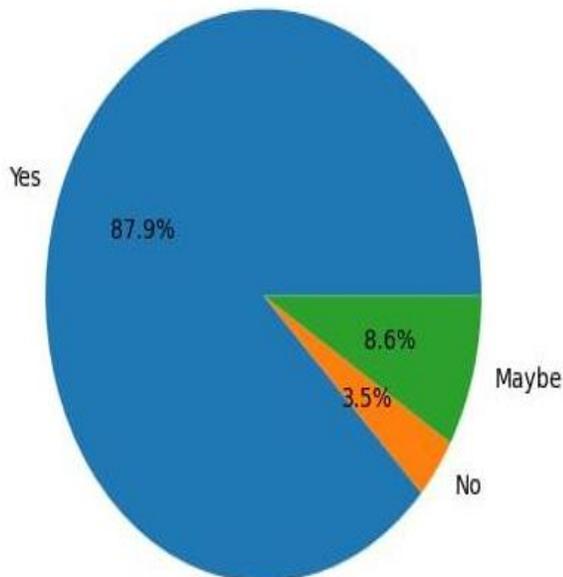


Figure 10: The majority of participants perceived dental implants as expensive (87.9%). A smaller proportion were unsure (8.6%) or disagreed (3.5%), indicating cost as a major concern.

Barriers to Implant Selection

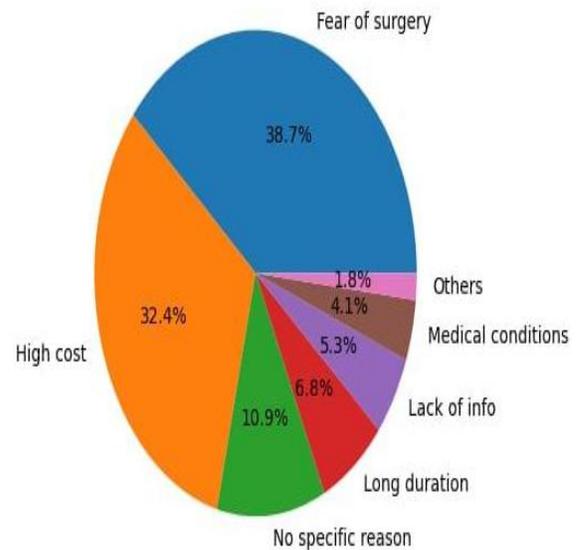


Figure 12: The main barriers to choosing dental implants were fear of surgery (38.7%) and high cost (32.4%). Other factors included no specific reason (10.9%), long treatment duration (6.8%), lack of information (5.3%), medical conditions (4.1%), and others (1.8%).

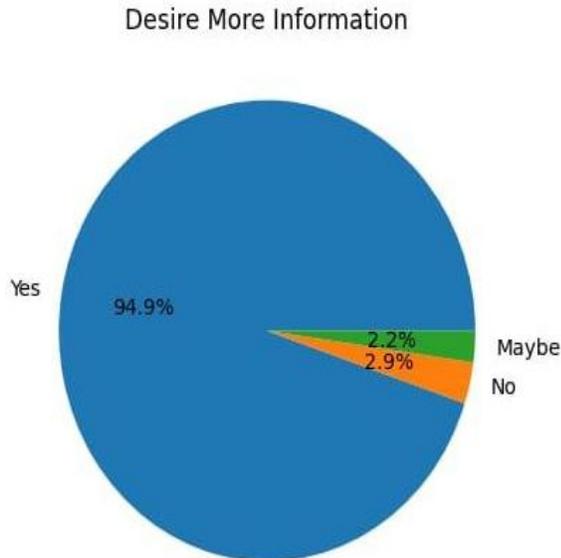


Figure 13: A vast majority of participants were willing to learn about dental implants from a dentist (94.9%). Only a small proportion responded “No” (2.9%) or “Maybe” (2.2%), indicating high interest in professional guidance

IV. DISCUSSION

The present study provides a comprehensive analysis of the awareness and attitudes toward dental implants among a diverse patient population. The results indicate a significant shift in patient knowledge compared to studies conducted a decade ago, yet they highlight persistent psychological and financial barriers that continue to impede treatment uptake.

4.1 High General Awareness vs. Clinical Knowledge
A striking finding of this study is the exceptionally high general awareness level of 96.2%. This exceeds the awareness levels reported by Chowdhary et al. and Satpathy et al. in similar Indian demographics, which typically ranged between 25% and 40%. The high literacy rate in our study (68.3% graduates) likely accounts for this disparity. However, while "awareness" is high, "specific clinical knowledge" remains more nuanced. For instance, 12.1% of respondents were unaware that implants are placed into the jawbone, and 13.7% did not believe implants function like natural teeth. This suggests that while the term "Dental Implant" is well-known, the underlying biomechanical advantages are not fully understood by a subset of the population.

4.2 The Role of the Dentist as a Primary Influencer
Despite the digital revolution, our data confirms that the dentist remains the primary source of information (62.5%). This finding aligns with the study by Pommer et al. (3), emphasizing that patient-provider communication is the most effective tool for disseminating clinical information. Interestingly, the Internet and Social Media (11.1%) played a relatively minor role compared to Friends and Family (22.9%). This underscores the "social proof" aspect of dental treatment in the Indian context—patients trust the lived experiences of their peers more than digital advertisements.

4.3 The "Knowledge-Apprehension Gap"
The most critical finding of this research is the paradox between safety perception and pain anxiety. Although 86.0% of participants categorized dental implants as a "safe treatment," a staggering 89.2% expressed concern regarding procedural pain. This "Knowledge-Apprehension Gap" suggests that patients intellectually accept the safety of the science but emotionally fear the surgical process. Clinically, this highlights a massive need for dentists to incorporate behavior management and "painless dentistry" counseling (such as explaining local anesthesia or sedation) during the initial consultation to bridge this emotional gap.

4.4 Economic Barriers and Value Perception
Cost remains a formidable barrier, with 87.9% of participants perceiving implants as "too expensive." When asked for specific deterrents, 40.6% cited cost as a primary reason for refusal. However, given that 93.0% of respondents were aware of the long lifespan of implants, there is a clear opportunity for clinicians to shift the conversation from "initial cost" to "long-term value." The high cost is often compared to cheaper, short-term alternatives like Removable Partial Dentures (RPDs). Our data suggests that while patients know implants last longer, they may not yet perceive that longevity as worth the higher upfront investment.

4.5 Fear of Surgery and Treatment Deterrents
The leading barrier identified was the Fear of Surgery (48.6%). This surpasses even cost, indicating that the invasive nature of the procedure is the single greatest hurdle to treatment acceptance. This is consistent with

findings in global literature (4,5) where dental phobia often overrides clinical need. Addressing this requires a shift in public awareness campaigns from merely "defining an implant" to "humanizing the procedure," perhaps through patient testimonials and minimally invasive surgical demonstrations.

4.6 Future Outlook and Educational Demand

The demand for further education is near-unanimous, with 94.9% of patients willing to learn more from their dentists and 98.1% advocating for improved public awareness. This indicates that the patient population is not resistant to the technology; rather, they are seeking more detailed, accessible, and reassuring information.

Limitations

The study is limited by its cross-sectional nature and the fact that it was conducted within a single hospital environment, which may result in a more health-conscious participant pool compared to the general public. Future research should involve multi-center longitudinal studies to track if educational interventions successfully increase the conversion rate from "awareness" to "treatment uptake."

Clinical Recommendations for the Practitioner

1. Address Pain Early: Since 89% fear pain, the consultation should focus on the comfort of modern anesthesia.
2. Visual Aids: Use models or 3D animations to show the integration process, as 12% don't understand the bone-anchor concept.
3. Cost vs. Longevity: Provide a 10-year cost-comparison between a bridge/RPD and an implant to justify the investment.

V. CONCLUSION

The study concludes that while patients are well-informed about the existence and benefits of dental implants, surgical anxiety and cost remain major deterrents. Dental professionals should focus on demystifying the surgical phase and emphasizing the long-term value of implants over traditional prosthetics to improve treatment uptake.

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