

Original Research Article

UNDERSTANDING AND READINESS FOR DENTAL IMPLANTS AMONG MITHILA POPULATION OF BIHAR

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ABSTRACT

Background: Dental implants have become preferred option for tooth replacement due to their functional and aesthetic advantages. However, awareness and readiness to undergo implant therapy vary significantly across populations, particularly in rural and underserved regions such as Bihar, India. The Mithila population, with distinct cultural characteristics, remains underrepresented in dental implant research. This study aimed to assess the understanding, awareness, and readiness for dental implants among the Mithila population attending the Prosthodontics outpatient department (OPD) in Bihar. **Materials and Methods:** A prospective observational study was conducted over one year involving 300 patients aged 18 years and above, seeking prosthetic dental care. A structured, validated questionnaire assessing demographic data, implant knowledge, attitudes, and willingness to undergo implant therapy was administered. Data were analyzed using descriptive statistics and Chi-square tests to identify factors influencing awareness and readiness.

Results: Only 38% of participants had prior knowledge of dental implants, with dentists being the primary information source. About 45% expressed willingness to undergo implant treatment if recommended, while 20% were unwilling, mainly due to fear of surgery and high costs. Higher education levels and urban residence were significantly associated with greater awareness and readiness ($p < 0.05$).

Conclusion: Awareness and knowledge of dental implants are limited among the Mithila population of Bihar, especially in rural and less educated groups. Despite this, there is considerable willingness to accept implant therapy with appropriate education and counseling. Targeted awareness programs and affordable treatment options are needed to improve implant acceptance in this community.

Keywords: Dental Implants, Awareness, Patient Acceptance of Health Care, Prosthodontics, Bihar.

INTRODUCTION

Dental implants have revolutionized the field of restorative dentistry by offering a durable and aesthetically pleasing solution for tooth loss. They provide significant advantages over traditional dentures and bridges, including improved function, preservation of alveolar bone, and enhanced patient confidence and quality of life.^[1] With increasing life expectancy and awareness regarding oral health, the

demand for dental implant therapy has surged globally.^[2] However, acceptance and readiness for dental implants vary widely depending on several factors such as socioeconomic status, cultural beliefs, education, and geographic location.^[3]

In developing regions like Bihar, India, dental health issues continue to pose significant challenges due to limited access to dental care, lack of awareness, and economic constraints.^[4] Bihar is one of the most populous states in India, with a predominantly rural

demographic where traditional beliefs and limited healthcare infrastructure influence treatment choices.^[5] Among the diverse communities in Bihar, the Mithila population, known for its distinct culture and language, represents a significant portion of the population whose dental healthcare practices remain underexplored. Understanding the awareness and readiness towards dental implants in this group is crucial for implementing effective oral healthcare interventions.^[6]

Tooth loss remains a common problem in India, particularly in rural areas, and is often attributed to untreated dental caries, periodontal disease, and trauma.^[7] Conventional prosthetic options like removable dentures are often the default treatment for edentulism in these settings. However, they are associated with discomfort, poor retention, and bone resorption, leading to compromised oral function.^[8] Dental implants have the potential to overcome these limitations, but their uptake is often hindered by a lack of awareness, fear of surgical procedures, financial barriers, and cultural perceptions.^[9]

Several studies worldwide have documented varying levels of knowledge and acceptance of dental implants. In developed countries, awareness tends to be higher due to better education and access to healthcare services.^[10] In contrast, studies from developing countries report low levels of awareness and acceptance, primarily due to socioeconomic factors and insufficient information dissemination.^[11] In India, the knowledge and attitudes toward dental implants among rural populations have not been extensively studied, and there is a lack of data specifically concerning the Mithila region.^[12] This gap in knowledge limits the ability of dental professionals to address the oral health needs of this community effectively.

The need for this study arises from the critical role that patient awareness and readiness play in the success of dental implant treatment. Patient acceptance is influenced by understanding the benefits, risks, treatment duration, and cost implications of implants.^[13] Moreover, cultural factors and beliefs may shape perceptions about surgical interventions and modern dental technologies.^[14] By assessing the level of awareness and willingness to undergo implant treatment, dental practitioners can tailor educational programs and treatment plans to the community's needs, potentially improving oral health outcomes.

The aim of this study was to evaluate the understanding and readiness for dental implants among the Mithila population of Bihar. The specific objectives are to assess the knowledge about dental implants, identify barriers to acceptance, and evaluate factors influencing readiness for implant therapy.

MATERIALS AND METHODS

This prospective observational study was conducted at the Prosthodontics outpatient Department (OPD)

of Mithila Minority Dental College and Hospital, Darbhanga, Bihar, over a period of one year from January 2022 to December 2022. The study aimed to assess the awareness, knowledge, and readiness for dental implant treatment among patients visiting our institute.

The study population comprised all patients reporting to the Prosthodontics OPD for various prosthetic dental treatments during the study period. A total of 300 patients were enrolled using convenience sampling based on eligibility criteria.

Inclusion Criteria

Patients aged 18 years and above. Patients who were edentulous or partially edentulous and seeking prosthetic rehabilitation. Patients willing to participate and provide informed consent. Patients belonging to the Mithila population of Bihar.

Exclusion Criteria

Patients with systemic conditions contraindicating dental implant surgery (e.g., uncontrolled diabetes, bleeding disorders). Patients with cognitive impairments or psychiatric illnesses affecting the ability to respond to questionnaires. Patients who had previously received dental implants. Patients unwilling to participate or unable to give informed consent.

Source and validation of the questionnaire: The questionnaire used in this study was adapted from previously validated instruments assessing knowledge and attitudes toward dental implants, including studies by Al-Johany et al,^[9] and Singh et al.^[12] It was initially developed in English and subsequently translated into Maithili to ensure linguistic and cultural relevance for the target population. To establish face and content validity, the questionnaire was reviewed by a panel of 05 dental specialists. A pilot study was conducted with 20 patients from the same population to assess clarity, comprehension, and reliability. Necessary modifications were made based on pilot feedback. The internal consistency of the questionnaire was evaluated using Cronbach's alpha, yielding a value of 0.82, indicating good reliability for the study.

Data Collection: After obtaining informed consent, eligible patients were interviewed using a structured questionnaire. The questionnaire comprised sections on demographic details, oral health history, knowledge about dental implants, attitudes towards implant treatment, perceived barriers, and willingness/readiness to undergo implant therapy. The questionnaire was administered by trained dental professionals fluent in the local language (Maithili) to ensure clear communication and accurate responses. For illiterate patients, questions were read aloud, and responses were recorded.

Additionally, clinical oral examinations were performed to document the patients' dental status, including the number of missing teeth, condition of the edentulous area, and existing prosthetic appliances.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using Statistical

Package for the Social Sciences (SPSS) version 20.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics such as frequencies, percentages, means, and standard deviations were calculated for demographic variables and questionnaire responses. Chi-square tests to examine associations between categorical variables. A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 300 patients from the Mithila population visiting the Prosthodontics OPD were enrolled in the study. The demographic characteristics, awareness levels, readiness for dental implants, and associated factors were analysed.

[Table 1] presents the demographic profile of the participants. The mean age was 45.6 ± 12.3 years, with the majority (54%) aged between 40 and 60 years. Males constituted 58% (n=174), while females were 42% (n=126). Regarding education, 40% had completed secondary education, 30% had primary education, and 30% were illiterate. Most participants (72%) resided in rural areas.

Table 1: Demographic Characteristics of Participants (n=300).

Characteristic	Frequency	Percentage (%)
Age Group (years)		
18-39	90	30
40-60	162	54
>60	48	16
Gender		
Male	174	58
Female	126	42
Education Level		
Illiterate	90	30
Primary	90	30
Secondary or above	120	40
Residence		
Rural	216	72
Urban	84	28

As shown in [Table 2], only 38% (n=114) of participants reported having heard of dental implants prior to the study. Among those aware, the primary sources of information were dentists (45%), media (30%), and family/friends (25%). Detailed

knowledge questions revealed that 28% knew implants could improve chewing efficiency, 22% were aware implants require surgical placement, and only 18% understood the cost implications.

Table 2: Awareness and Knowledge of Dental Implants (n=300).

Knowledge Item	Correct Response Frequency	Percentage (%)
Heard about dental implants	114	38
Implants improve chewing function	84	28
Implant placement requires surgery	66	22
Cost of implant treatment is high	54	18

The overall awareness of dental implants was low among the study population, with less than half having heard about this treatment option. Knowledge about the clinical aspects and cost was particularly limited, indicating a need for educational interventions.

[Table 3] illustrates the participants' readiness to accept dental implant treatment. When asked about

their willingness to undergo implant therapy if recommended by a dentist, 45% (n=135) expressed readiness, 35% were unsure, and 20% were unwilling.

Among those unwilling, the most cited reasons were fear of surgery (40%), high cost (35%), and lack of knowledge about the procedure (25%).

Table 3: Readiness to Undergo Dental Implant Treatment (n=300).

Response	Frequency	Percentage (%)
Willing	135	45
Uncertain	105	35
Unwilling	60	20

Although less than half of the patients were willing to consider implants, a significant proportion was undecided, suggesting that improved awareness and

counselling could positively influence acceptance rates.

[Table 4] presents the association between demographic variables and awareness/readiness for

dental implants. Chi-square analysis revealed that education level was significantly associated with awareness ($p < 0.001$) and readiness ($p = 0.002$). Urban residents showed higher awareness (55%)

compared to rural residents (32%) ($p = 0.01$). Age and gender were not significantly associated with awareness or readiness.

Table 4: Association of Demographic Factors with Awareness and Readiness.

Variable	Awareness (%)	p-value	Readiness (%)	p-value
Education		<0.001*		0.002*
- Illiterate	15		25	
- Primary	35		40	
- Secondary+	60		60	
Residence		0.01*		0.03*
- Rural	32		40	
- Urban	55		55	
Age		0.15		0.22
Gender		0.37		0.44

*Significant at $p < 0.05$

Higher education and urban residence were significant predictors of both awareness and willingness to undergo implant treatment. These findings suggest socio-demographic disparities influence implant acceptance, underlining the need for targeted education and outreach in rural and less educated populations.

This study highlights a relatively low level of awareness about dental implants among the Mithila population of Bihar, particularly among the rural and less educated groups. Despite limited knowledge, nearly half of the participants showed willingness to consider implant treatment if adequately informed, indicating a positive outlook toward advanced dental care when proper guidance is provided. Fear of surgery and cost remain major barriers to acceptance.

DISCUSSION

The present study aimed to evaluate the awareness, knowledge, and readiness for dental implant treatment among patients from the Mithila population visiting the Prosthodontics OPD in Bihar. The findings reveal important insights into the current status of dental implant awareness and acceptance within this community, highlighting significant socio-demographic disparities and barriers to implant therapy.

Our results indicate that only 38% of participants had heard of dental implants prior to the study, with even fewer possessing detailed knowledge regarding their function, surgical nature, and cost. This finding is consistent with other studies conducted in developing regions, which report limited awareness of dental implants among rural and less-educated populations.^[11,12] For example, Singh et al,^[12] found that rural populations in Bihar exhibited low awareness of implant treatment options, similar to our results. This low level of knowledge may be attributed to limited access to dental health information and services in rural areas, where traditional beliefs and reliance on conventional prostheses like dentures predominate.^[4,5]

The majority of participants who had heard about implants cited dentists as their primary source of

information, followed by media and family or friends. This underscores the critical role dental professionals can play in patient education. However, the fact that less than half of the patients had received such information suggests that opportunities for awareness creation in clinical settings may be underutilized. Media campaigns and community outreach programs could also be leveraged to increase public understanding, as suggested by Al-Shehri et al.^[14]

About 45% of participants expressed willingness to undergo dental implant therapy if recommended by their dentist. While this indicates a positive attitude towards modern dental treatments, a substantial proportion (35%) were uncertain, and 20% were unwilling. These findings align with global literature reporting moderate acceptance levels, often tempered by fear, cost concerns, and lack of knowledge.^[9,13] Al-Johany et al,^[9] similarly noted that fear of surgery and financial constraints were major barriers preventing patients from opting for implant therapy. Fear of surgical intervention was the most frequently cited reason for unwillingness, followed closely by high treatment costs. The invasive nature of implant surgery understandably causes apprehension among patients unfamiliar with the procedure, highlighting the need for effective counseling and reassurance. In addition, the high cost of implants remains a significant obstacle in low-income communities like Mithila, where economic hardship limits access to advanced dental care.^[4] The low percentage of participants aware of the cost implications (18%) further suggests inadequate financial counselling, which can lead to unrealistic expectations and treatment refusal.

Education and place of residence were significant predictors of awareness and readiness to accept dental implants in our study. Participants with higher education levels and those from urban areas demonstrated significantly greater knowledge and willingness to consider implant therapy. These findings are in agreement with previous research showing that education enhances health literacy and promotes proactive attitudes toward oral health treatments.^[12,15] Urban residents typically have better

access to dental services, exposure to health information, and greater purchasing power, all contributing to higher awareness and acceptance.^[5,11] Conversely, illiterate and rural participants showed markedly lower awareness and readiness. This disparity reflects systemic inequities in healthcare access and health education prevalent in developing regions. These results emphasize the importance of tailored public health interventions targeting vulnerable groups to bridge the knowledge gap. Educational programs delivered in local languages, using culturally appropriate methods, could empower these communities and improve their receptivity to advanced dental treatments.^[6,14]

The findings of this study have direct implications for dental practice and public health policy in Bihar and similar socioeconomically challenged regions. Given the low awareness and prevalent misconceptions about dental implants, dental professionals must actively engage in patient education during routine consultations. Providing clear, comprehensible information about the benefits, risks, procedural details, and costs of implant therapy can enhance patient confidence and decision-making.^[1,9]

Financial constraints, a major deterrent to acceptance, highlight the need for affordable implant solutions or subsidized programs. Public health authorities could explore partnerships with NGOs or government schemes to provide cost-effective implant treatment for underserved populations. Additionally, fostering community-based awareness campaigns, possibly leveraging local media and cultural events, can further disseminate knowledge about implants and dispel fears.^[4,14]

Training for dental practitioners in communication skills and cultural competence is also essential to effectively address patient concerns and tailor treatment recommendations. Understanding patients' cultural beliefs and socioeconomic background enables more empathetic care and may improve treatment uptake.^[6]

While this study provides valuable insights, some limitations should be acknowledged. The use of convenience sampling and restriction to a single center may limit the generalizability of the findings to the broader Mithila population or other regions. Additionally, self-reported data on awareness and readiness may be subject to social desirability bias.

Future research could expand to multiple centers and include longitudinal follow-up to assess changes in awareness and acceptance after educational interventions. Qualitative studies exploring patient perceptions, fears, and cultural beliefs in depth would also enrich understanding and guide more effective health promotion strategies.

CONCLUSION

In conclusion, the present study highlights a significant gap in awareness and knowledge of dental implants among the Mithila population of Bihar, with less than half having prior knowledge and fewer understanding the clinical and financial aspects. Despite this, nearly half the patients expressed willingness to undergo implant therapy if appropriately informed, indicating openness to modern dental treatments. Socio-demographic factors such as education and urban residence strongly influence awareness and readiness, emphasizing the need for targeted educational and financial interventions.

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