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Assessment of patient's knowledge and expectations regarding dental implants: A survey based research

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Abstract

The purpose of this study was to assess the level of knowledge, attitude, and source of information regarding the use of dental implants as treatment option compared to other conventional treatment modalities. A descriptive cross sectional study among adult dental patients attended the selected dental clinics of Nanded and Hingoli districts of Maharashtra, India. The level of knowledge, source of information, and attitude regarding the use of dental implants were evaluated through standardized self-explanatory questionnaires which were handed to the patient during their regular dental visits. 200 patients were selected randomly to be included in this survey. Among the 200 participants included in this study, 91.5% of the respondents heard about implants and their source of information were dentists (36%), 34.5% thought that the implants need more care compared with natural teeth. Regarding expected mean of durability of dental implants in present study, 37.7% of the subjects had no idea about the durability of dental implant treatment. The most important outcome of the present study is that about 70% of the subjects thought that the cost of the implants is beyond the reach of common people. The survey concluded that an acceptable level of awareness regarding using dental implants as a treatment option for replacing missing teeth, with dentists being the main source of information.

Keywords: Dental implants, survey, self explanatory questionnaires, 200 participants

1. Introduction

Common oral conditions have been shown to have a substantial effect on well-being and quality of life. The loss of one or more natural teeth often results in disability, as essential daily living activities, such as speaking and eating are impaired, and also in handicap, for example, by decreased social interaction because of embarrassment associated with denture wearing. The loss of natural teeth is a health problem, i.e., associated with functional, cosmetic and psychological morbidities since antiquity. Long-term clinical studies of dental implants have proved the effectiveness of implant treatment as an option to replace missing teeth. A dental implant is an artificial root inserted surgically to support the complete denture or to replace single or maxillofacial prosthesis, The main role of prosthodontics is the rehabilitation of patients after loss of teeth and oral function. However, there are generally no accepted rules about how to estimate need, demand or utilization of prosthodontic services in most situations, since individual preferences play a very important role. Individuals with less education and low income tend to have poorer dental status because of poor finances. Hence, these individuals do not even consider treatments they know they cannot afford^[3]. Also, older individuals accustomed to their conventional dentures do not show interest in implant treatment. Moreover, a large number of patients experience difficulties in adapting to removable prostheses, while a smaller number are unable to accept removable prostheses at all. This may be explained by anatomical, physiological, psychological, and/or prosthodontic factors. Functional tests have demonstrated inferior masticatory ability in subjects with removable prostheses in comparison to dentate controls. Even with excellent prostheses, many patients experience difficulty with denture retention, speech and mastication. However, with the advent of new technology more restorative options have become available thereby, changing the face of demand for prosthodontic treatment.

Despite of the new available restorative options, it is observed that there are substantial barriers between both need and demand and between demand and utilization.

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This is possibly due to the lack of information and awareness among the people. Also the financial cost lays a question mark in the people who are aware about implants. The aim of the study was to assess the knowledge of the patients regarding implant-retained prosthesis as an option for tooth replacement.

Aim

The aim of the study was to assess the knowledge of the patients regarding implant- retained prosthesis as an option for tooth replacement amongst patients.

Objective

The present study was undertaken to access the level of knowledge and attitude of patients toward implant treatment as an option for replacement of missing teeth.

Materials and Methods

A survey was conducted through printed questionnaire composing of multiple questions with the intention of evaluating dental implant knowledge among the population of Nanded & Hingoli District of Maharashtra State, India in 2023 (Sept-December). A random sampling method with convenient sample size was used. Questionnaire was prepared in both English and Marathi to facilitate completion and to get better understanding of the questions by the respondents. Most of the hospitals with a dental outpatient department and private dental clinics were included in the study. The questionnaires were handed to the patients during their regular dental visits. All the respondents were informed about the aims and objectives of the study. Those who were not willing to give informed consent were excluded from the study. So, only 200 respondents agreed to participate in the survey. Patients above 18 years of age were included in the study during the mentioned time period. Data was gathered using a self-administered structured closed ended questionnaire. The questionnaire addressed information like; have you undergone treatment for dental implants, knowledge of dental implants, sources of information, have you seen implant in any other patient, choice of treatments regarding replacement of missing teeth, various constraints in implants treatment, etc.

Study Design, Area, and Population. A descriptive cross sectional study was conducted among adult dental patients attended dental clinics of Dental clinics of Nanded & Hingoli region. Data were collected between Sept 24, 2023, and Jan 15, 2024. Inclusion criteria were as follows: adults 18 years or more, not inpatient, and with no previous dental implants. Exclusion criteria were as follows: very old non- cooperative patients, patients less than 18 years of age, and mentally or physically disabled patients, pregnant ladies.

Sampling techniques and size

A total of 200 (female: 100; male: 100) participants who fulfilled the required criteria during study period were included under this study. They were selected by the simple random convenience sampling technique. The questionnaires were handed to the patients during their regular dental visits. All the respondents were informed about the aim of the study.

Survey Tool

A self-explanatory closed-ended questionnaire was administered with a total of 16 items in three sections designed to assess the patient's knowledge, source of information, and attitude about using dental implants as a treatment modality for replacement of missing teeth. Demographic data, socioeconomic status, and level of education were assessed. The questionnaire was prepared bilingually (English and Marathi) to correspond with the reading and comprehension levels of patients with different levels of education. Eligible illiterate patients were interviewed. It took 7-10 minutes to answer all the questions, and the questionnaire was filled in the waiting hall of the dental clinic of Nanded and Hingoli region. A pilot study was conducted among a sample of 25 patients (fifteen literate patients by self- administration of the questionnaire and ten illiterate by interview) by using the structured questionnaire to ensure comprehensibility and reliability.

Statistical Analysis

A master chart was created in Microsoft Excel for the purpose of data analysis. The statistical software namely SPSS version 15.0 was used for the analysis of the data. Descriptive statistics were obtained and frequency distribution, means, standard deviation were calculated using Student's t-test and ANOVA test at $p < 0.05$.

Ethical Consideration. The study was approved by Ethical Committee in Dr. Hedgewar Smruti Mamdal's Dental College & Hospital, hingoli-431513. Selected patients were requested to participate voluntarily after explanation of the purposes of the study. Informed written consent for their participation was obtained and confidentiality of responses was assured. Those patients who had not heard of dental implants as a treatment option were educated in this regard.

Result

Two hundred patients were questioned during the study period. Among the 200 subjects, 50% were females and 50% were males.

Level of Knowledge and Attitude

91.5% (183) of the respondents heard about implants, 46% (92) were female and 45.5% (91) were male, while 8.5% (17) of subjects did not hear about implants before. There is significant difference between males and females ($P=0.800$).

Table 1: Respondents' knowledge about dental implants.

	Male, n (%)	Female, n (%)	Total, n (%)	Significance
Yes	92 (46)	91 (45.5)	183 (91.5)	$X^2 = 0.064$
No	8 (4)	9 (4.5)	17 (8.5)	$P = 0.800$

Regarding the oral hygiene for the care of the implants compared with natural teeth, 38% (76) of the respondents do not have any idea ("no idea") (48% were male and 28% were female), while 34.5% (69) thought that the implants need more care compared with natural teeth, 14% (28) thought both are similar, and 13.5% (27) thought that it needs less care compared with natural teeth. There was significant difference between males and females ($p \leq 0.001$)

Table 2: Patient questionnaire to evaluate knowledge and expectations regarding implants

	Male, n (%)	Female, n (%)	Total, n (%)	Significance
What do you anticipate as oral hygiene for the care of implants compared with natural teeth?				
Similar	13 (13)	15 (15)	28 (14)	$X^2 = 22.076$
More	20 (20)	49 (49)	69 (34.5)	$P \leq 0.001$
Less	19 (19)	8 (8)	27 (13.5)	
No idea	48 (48)	28 (28)	76 (38)	
What do you estimate as the functional life of implants (years)?				
<10	14 (14)	16 (16)	30 (15)	$X^2 = 22.797$
10-20	39 (39)	18 (18)	57 (28.5)	$P \leq 0.001$
21-25	18 (18)	13 (13)	31 (15.5)	
>25	3 (3)	21 (21)	24 (12)	
No idea	26 (26)	32 (32)	58 (29)	
How important for you is the functional outcome of implant supported prosthesis?				
Not very important	9 (9)	1 (1)	10 (5)	$X^2 = 14.548$
Important	52 (52)	38 (38)	90 (45)	$P=0.002$
Very important	29 (29)	39 (39)	68 (34)	
No idea	10 (10)	22 (22)	32 (16)	
Have you ever heard about experiences with implants from your friends?				
Yes	67 (67)	73 (73)	140 (70)	$X^2 = 0.857$
No	33 (33)	27 (27)	60 (30)	$P=0.335$
If yes, how successful was the implant?				
Successful	69 (93.2)	54 (72)	123 (82.6)	$X^2 = 11.990$
Partially successful	5 (6.8)	19 (25.3)	24 (16.1)	$P=0.002$
Not successful	0 (0)	2 (2.7)	2 (1.3)	
Have you ever heard about effects of dental implants on systemic health?				
Yes	43 (43)	54 (54)	97 (48.5)	$X^2 = 4.819$
No	41 (41)	39 (39)	80 (40)	$P=0.090$
No idea	16 (16)	7 (7)	23 (11.5)	
	Male, n (%)	Female, n (%)	Total, n (%)	Significance
How are the effects of implant treatments in comparison with common prosthesis treatments?				
Not very important	2 (2)	2 (2)	4 (2)	$X^2 = 4.381$
Important	32 (32)	41 (41)	73 (36.5)	$P=0.223$
Very important	42 (42)	28 (28)	70 (35)	
No idea	24 (24)	29 (29)	53 (26.5)	
How are the effects of implant treatments on systemic health of patients?				
Not very important	9 (9)	1 (1)	10 (5)	$X^2 = 14.52$
Important	52 (52)	38 (38)	90 (45)	$P=0.002$
Very important	29 (29)	39 (39)	68 (34)	
No idea	10 (10)	22 (22)	32 (16)	
Do you think that cost of implants are beyond reach of common persons?				
Yes	61 (61)	79 (79)	140 (70)	$X^2 = 0.857$
No	39 (39)	21 (21)	60 (30)	$P=0.335$
Do you know that implants are fix teeth?				
Yes	42 (42)	54 (54)	96 (48)	$X^2 = 4.819$
No	41 (41)	39 (39)	80 (40)	$P=0.090$
No idea	17 (17)	7 (7)	24 (12)	

Regarding the durability of implants, 28.5% (57) of the respondents expected them to last between 10 and 20 years, 15.5% (31) of the respondents expected the durability between 21 and 25 years, and 15% (30) of the respondents estimated the durability to be less than 10 years. 12% (24) of the respondents estimated the durability to be more than 25 years, and 29% (58) of the respondents had no idea.

In the most of the respondents, 45% thought that the functional outcome of dental implants was important, followed by 35% of the respondents thought that it is very important, while 2% of the respondents thought it is not very important and 26.5% of the respondents had no idea..

Table 2 shows that 70% (140) of the respondents had experiences by themselves or heard about experiences from relatives and the outcome of the implant therapy was successful in 82.6% (123) of the respondents who had positive experience. There was non-significant difference

between males and females ($P=0.335$).

48.5% (97) of the respondents believed that dental implants have no effects on the systemic health and most of them were female 54% (54), while 40% (80) of the respondents believed that dental implants have no effects on the systemic health. There was non-significant difference between males and females ($P=0.090$) (Table 2).

Most of the respondents (37 (36.5%)) answered that the effect of implant treatment in comparison with common prosthesis is important, while 53 (26.5%) of respondents had no idea. There was non-significant difference ($P=0.223$) (Table 2).

Among the 200 respondents, the most common source of information was friends (91 (45.5%)), followed by dentists (72 (36%)), Internet (48 (24%)), dental patients (30 (15%)), and television (23 (11.5%)), and the newspaper was the least source of information (9 (4.5%)), and 9 (4.5%) had no idea (Figure 1).

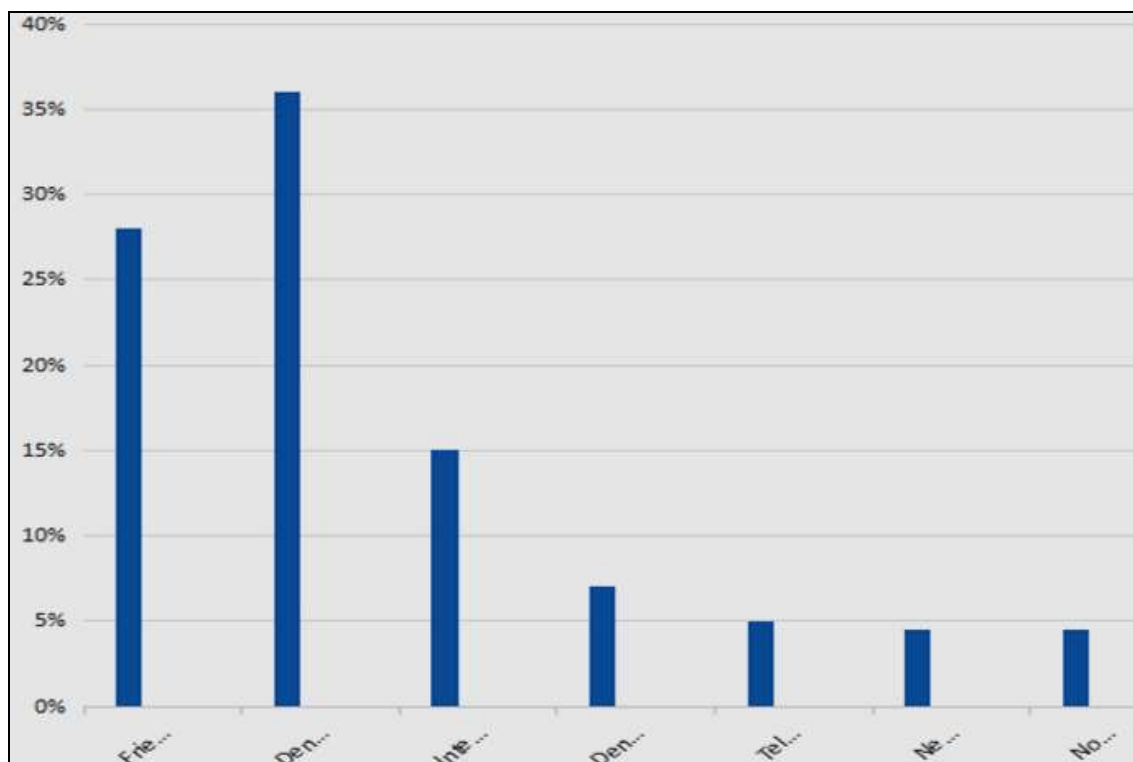


Fig 1: Percentage of different sources of information about dental implants as preferred by the questioned subjects.

Discussion

The present survey assessed the knowledge, source of information, and attitude of dental patients attending Nanded and Hingoli regions Dental Clinics regarding using dental implants as an option in replacing missing teeth. In the present study, most of respondents heard about implants (91.5%). It was found that the many of them were unaware about using dental implants as an option for replacing missing teeth. In contrast. This survey showed that the most common source of information was friends' 91 (45.5%). Present study showed that 38% of the respondents do not have any idea, while 34.5% thought that the implants need more care compared with natural teeth. Regarding expected mean of durability of dental implants in present study, 29% of the respondents had idea about durability of implants while 37.7% of the subjects had no idea about the durability of dental implant treatment. This means patients had insufficient information about dental implants. Patient's expectations of improved function are the main reason for choosing an implant. Similar results in this study, 45% of the respondents thought that the functional outcome of dental implants was important. The most important outcome of the present study is that about 70% of the subjects thought that the cost of the implants are beyond the reach of common people which the researcher thinks is an important issue to be fixed at the manufacturers, distributors and seller's level without hampering the quality of the product.

Conclusion

The present study concluded that patient's knowledge and attitude towards implants was below average as an option for replacing missing teeth. Friends and relatives were the main sources of information regarding dental implants among all participants. The high treatment charge of the implants is one of the major factor against the willingness of patients to undergo this treatment. It also showed the need for providing more general and correct information to the patients about this treatment modality.

Further studies are needed with larger sample sizes to evaluate the level of information of the dental patients who attended various dental clinics in different areas of Nanded and Hingoli region.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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