

**Original Research****To Study Awareness of Patients about Implant and Willingness for Implant****Sunita Mathuriya<sup>1</sup>, Surendra Agarwal<sup>2</sup>***Resident<sup>1</sup>, Professor and Head<sup>2</sup>, Department of Prosthodontics, People's college of Dental Sciences & Research Centre, Bhopal, India***ARTICLE INFO**

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Keywords:

Implant awareness,  
willingness, questionnaire study**ABSTRACT**

**Aim:** The aim of this survey was to assess the level, sources, and need for information about dental implants along with willingness of dental implants among a selected sample of dental patients attending dental OPD's in Bhopal city.

**Methodology:** This Questionnaire based study was conducted during May-October 2013 for a period of 6months. All patients attending the outpatient department of Prosthodontics in People's College of Dental Sciences and private dental clinics in Bhopal city were included in the study.

**Results:** Mean age of the study population was  $42.99 \pm 16.273$ , male outnumbered by 1.4 and most of the study population was less educated and unemployed and unskilled workers. Primary reason for outdoor consultation was for replacement of lost tooth/teeth (81.7%). Only 32.5% of the people in Bhopal were aware about dental implants as a treatment modality. High cost of the implants is one of the major limiting factors working against willingness of patients to undergo this treatment. Majority of the studied patients were not aware of details of dental implants, procedure, advantages and disadvantages.

**Conclusion:** Majority of study population was unaware of dental implant. There was significant association of education and occupation and knowledge about dental implant procedure, advantages, disadvantages, willingness for implant and knowledge about cost of dental implant.

**Introduction**

Currently, dental implants are widely accepted as a prosthetic treatment of completely or partially edentulous patients<sup>1,2</sup>.

Information about dental implants can be provided by media (journal, newspaper, TV, and broadcasts, magazines and internet), friends and acquaintances, dentists and general practitioners<sup>3,4,5,6</sup>.

Lack of adequate awareness exists in people about dental implant as a treatment modality. Awareness amongst patients regarding the procedure can help in eliminating negative image of the procedure that may have been caused due to lack of adequate communication<sup>7,8</sup>. In India dentist is the main source of information about implants.<sup>9-15</sup> The right kind of information, if channelized to the patients correctly, will

further help in promoting this superior treatment as a treatment option amongst the patients.

To the authors' knowledge, there are no data available in the literature which evaluates the dental patients' awareness and knowledge toward dental implants in Bhopal. Hence, the aim of this survey was to assess the level, sources, and need for information about dental implants along with willingness of dental implants among a selected sample of dental patients attending dental OPD's in Bhopal city.

**Methodology**

This Questionnaire based study was conducted during May-October 2013 for a period of 6months. All patients attending the outpatient department of Prosthodontics in People's College of Dental Sciences and private dental clinics in Bhopal city were included. They were informed about aims and objectives of the study after

\* Corresponding author. Dr Sunita Mathuriya w/o Dr Sandeep Aharwar M-241, Madhav Nagar, Opposite A.G. Office, Lashkar, Gwalior (M.P.) 474002

which a verbal consent was obtained for their participation. Those who were not willing to participate were excluded.

A self explanatory questionnaire was designed to assess the patient's knowledge and awareness about dental awareness about dental implants.

The purpose of this study was

1. To evaluate the awareness of patients about implant.
2. To evaluate the willingness for implant.
3. To evaluate barriers for unwillingness for implant-treatment cost, fear of surgery, and number of visits.

A pilot survey was carried out on a group of 100 individuals attending in dental colleges and dental outdoor clinic in order to study feasibility of survey procedures and to test the proforma to find out the constraints. It was found to be good with Cronbach's alpha ( $\alpha$ ) 0.75

Ethical clearance to conduct study was obtained from Institutional review Board, People's college of dental science and research centre, Bhanpur, Bhopal.

A total of 388 subjects as sample size was determined based on pilot study. Cases were patients attending dental outdoors in hospitals and clinics of Bhopal. All the population in the age group of >18 years were included in the study.

A self explanatory questionnaire was designed to assess the patient's knowledge and awareness about dental awareness about dental implants. It consists of 15 questions in 3 sections, first section includes source of information about dental implants, second section consists of questions evaluating the level of information about implants and finally third section consists of

questions that find out the need of dental implants as a treatment option. The questionnaire was prepared in English language and was also explained in Hindi to correspond with the reading and comprehension levels of patients with different levels of education.

The questionnaires were handed to the patients during their regular dental visits. The collected data was analyzed by using Pearson Chi-square statistical analysis to determine correlation between variables.

## Results

Study population consisted of 388 cases.

### Demographic characteristics

Age range of population was from 18 years to 80 years with mean age of 42.99 (+/- 16.273) and male to female ratio of 1.4:1. . Most of our study population (58.3%) was below secondary educated while 41% were above graduate. Also most (66.3%) were unemployed or unskilled workers and 33.7% were professionals or businessmen. (Table No. 1 )

### Awareness about tooth replacement

Primary reason for outdoor consultation was for replacement of lost tooth/teeth (81.7% ) while 4.9% have come for prosthesis placement, 2.6% for pain and rest with other complaints.(table no.) A majority of our study population favored (369, 95%) replacement of missing teeth. There was no significant association between the two genders, level of education and occupation and knowledge about replacement of missing teeth.

Only few (12.6%) patients knew about implant supported reconstruction as compared to other options as shown in table 2 and graph (fig. 1). A significantly higher proportion did not know about implant as compared to other options ( $p < 0.001$ ). There was no significance of

gender and question of alternatives for replacement of teeth.

There was significant association of education and level of occupation as p value was  $<0.0001$  as more of the educated and well occupied persons were known to implant supported reconstructions

### **Knowledge about dental implant as a tooth replacement option**

Two hundred and sixty two (67.5%) participants had not heard of dental implant while only 126 (32.5%) have heard about it as an option for replacing missing teeth. Of these 127, 88 (69.8%) were not at all aware about details of dental implants and 109 (86.6%) denied about implant placement procedure. But 377 (97.2%) patients consented to know more about implants.

Of the 126 patients 92 (73.01%) got informed about implants from their dentists (Fig.2) and rest from other sources (fig. 2). There was no significant association between either gender.

While 60 (15.5%) participants would not like to have implant-retained prosthesis as an option for replacement of missing teeth, 49 (12.6%) said they are not sure, while majority, 279 (71.9%) were willing to have implant when explained.

Of the 60 participants who gave reasons why they would not like to have their missing teeth/tooth replaced with dental implant, majority (78.33%) claimed that they needed more care than natural teeth, while 8 (13.33%) thought it cleaned like natural teeth and 5 (8.33%) thought they needed less care than natural teeth.

If they have good knowledge about implant 173 (44.6%) of the participants claimed they would consider implant

retained prosthesis as an option for tooth replacement. While 215 (55.4%) of the participants were not sure of considering it even if it is well explained to them. Two hundred thirty six (60.8%) of participants opted implants are good for everyone in need while 152 (39.2%) considered implants are expensive and are only for rich.

266 (68.6%) of our patients were not satisfied with removable replacement denture. Regarding disadvantages of dental implant supported dentures/bridges 210 (54.1%) patients cited it as costly, 64 (16.5%) feared with surgery and 114 (29.4%) felt it as lengthy procedure in our study patients ( Fig. 3 )

As per the patients, advantages of dental implant supported dentures/ bridges 84 (21.6%) found replacement as better choice, 15 (3.9%) thought implant looks better, 110 (28.4%) thought it to be good in function and 179 (46.1%) thinks implant avoids grinding of natural teeth

A statistically significant relationship was found when education and occupation on implant and if participant would consider implant is well explained. ( $p < 0.001$ ).

### **Knowledge about cost of implant**

Among the participants who have heard about implant, only 45.6% have knowledge about cost implication, rest have wrong information on the cost.

The study also showed a statistically significant relationship between those who have heard about implant retained prosthesis and their knowledge of cost implication ( $p < 0.001$ )

## Discussion

The present study showed a high rate of awareness of replacement of missing teeth with 95% of the participants being aware that missing teeth can be replaced. Furthermore, the option of fixed partial denture for teeth replacement was the most recognized by the participants. Although removable partial denture has been most widely available and traditional way of replacement in this country; it is relatively cheap and affordable for most socioeconomic classes in resource poor settings but it has to be removed frequently so patient preferred FPD.

While 127 (32.5%) of the participants have heard about dental implant, only 12.6% of them aware that it is an option of replacement of missing teeth. There was a significant relationship ( $p < 0.001$ ) when those who were aware of possible replacement of missing teeth, with a higher proportion of those who have knowledge of replacement of missing teeth showing low knowledge about dental implant as an option of tooth replacement.

The level of awareness of implant as an option for replacement of missing teeth recorded in this study is similar to other Indian studies as 23.24% by Chowdhry R<sup>9</sup>, 38% by Pragati K<sup>14</sup> and others<sup>6,7</sup>. Most of our study population (58.3%) was below secondary educated and most (66.3%) were unemployed or unskilled workers. Ravi CK<sup>11</sup> in 535 Andhra Pradesh residents reported awareness of 4.83% where people were of lower socioeconomic and education levels. Our study also showed significant association of education and level of occupation as p value was  $< 0.0001$  as more of the educated and well occupied persons were known to implant supported reconstructions.

**Table No. 1. Descriptive Statistics of the study population**

Gender	No.	%
Male	228	58.8
Female	160	41.2
<b>Education</b>		
Uneducated	12	3.1
Primary	114	29.4
Secondary	100	25.8
Graduate	127	32.7
Postgraduate	35	9.0
<b>Occupation</b>		
Student	57	14.7
Unemployed/Housewife	157	40.5
Unskilled	43	11.1
Professional	75	19.3
Business	56	14.4

However, the level of awareness recorded in this study is lower when compared with that reported by Al Johanny<sup>16</sup>, Zimmer et al<sup>4</sup>, Tepper et al<sup>7</sup>, Berge<sup>3</sup> and Best<sup>5</sup>, who recorded the level of awareness in their different studies to be from 66% to as high as 77%. This may be due to the relatively low level of practice of implant dentistry in this environment and sensitization of patients by dentists toward the use of implant-retained prosthesis as option of tooth replacement.

**Table no.2 Distribution of study population on the basis of question 2 of Alternatives for replacing teeth do you know**

Replacement Options	Yes (%)	No (%)	
Fixed partial dentures	178(45.9)	210(54.1)	388
Removal partial dentures	72(18.6)	316(81.4)	388
Removal complete dentures	89(22.9)	299(77.1)	388
Implant supported reconstructions	49(12.6)	339(87.4)	388

Dentists were the major source of information (73.01%) to those who have heard about dental implants followed by friends, media and general practitioners. This is similar to the study by Pragati K<sup>14</sup>, Satpathy A<sup>10</sup> and Ravi CK<sup>11</sup> which recorded dentists being main source of information. However this result is contrary to some other studies<sup>3, 4, 5</sup> that have media and internet as the major source of information on dental implant. This could be due to the fact that majority of the people in this environment depend on professionals such as dentists, on their source of information and the fact that accessibility to the internet is relatively expensive and still limited to those of middle and high socioeconomic classes.

Majority of our participants (70.9%) were willing to have implant prosthesis when explained about benefits, some were also not willing while some were not sure about implant and reason explained by them was, implant needed more care. While 68.6% of our participants were not satisfied with removable replacement denture and 60.8% opted implants are good for everyone but only 44.6% claimed to consider implant retained prosthesis as an option for tooth replacement. Reason for unwillingness was also not truly explained by our participants. This further buttresses the need for

adequate education, as was confirmed in this study by the response of the participants to education on dental implants, with majority of participants claiming that they would appreciate it if they could be better informed about advantages and disadvantages that might consider it as a better option. This finding is similar to Satpathy A<sup>10</sup>, Ravi CK<sup>11</sup> and Al Johanny<sup>16</sup>. Our 97.2% of participants were willing to know more about dental implants and was consistent across all gender, age groups, occupational and educational status.

Asked about major disadvantages of dental implant treatment modality, 54.1% of those interviewed mentioned high costs, 29.4% mentioned long treatment time and 16.5% mentioned need of surgery. This is consistent with other studies<sup>6, 7, 8, 14, 15</sup>. Also our patients were not fully aware about advantages of dental implants. This information indicates that dental surgeons need to allay the fear in patients regarding the dental implants treatment by explaining surgical procedure carefully and comprehensively.

There was also misconception and low knowledge about the cost implication of dental implants among the 127 participants who have heard about it, with just 45.6% were rightly informed. This low awareness and misconception about cost is similar to that reported by Tepper<sup>17</sup> and Rustermeier<sup>18</sup>.

**Summary & conclusion**

Within the limitations of this study, it can be concluded that only 32.5% of the people in Bhopal were aware about dental implants as a treatment modality. Dentists were the main source of information regarding dental implants amongst the people. This clearly indicates the lack of efforts by dentists and the governing bodies regarding taking necessary steps for creating awareness amongst the people. The high cost of the implants is one

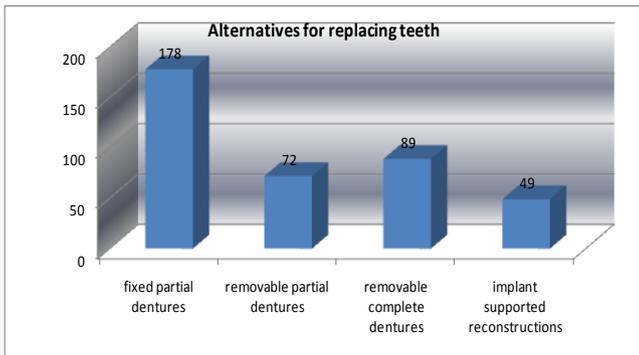
of the major limiting factors working against willingness of patients to undergo this treatment. Majority of the studied patients were not aware of details of dental implants, procedure, advantages and disadvantages. Our study population was willing know more about dental implants and also willing to undergo implant procedure if it is needed as treatment option. There was significant association of education and occupation and knowledge about dental implant procedure, advantages, disadvantages, willingness for implant and knowledge about cost of dental implant. As this survey was conducted in a limited group of people, further studies are needed to be conducted amongst the people of urban and rural India to assess the level of awareness about dental implants amongst a larger strata of people.

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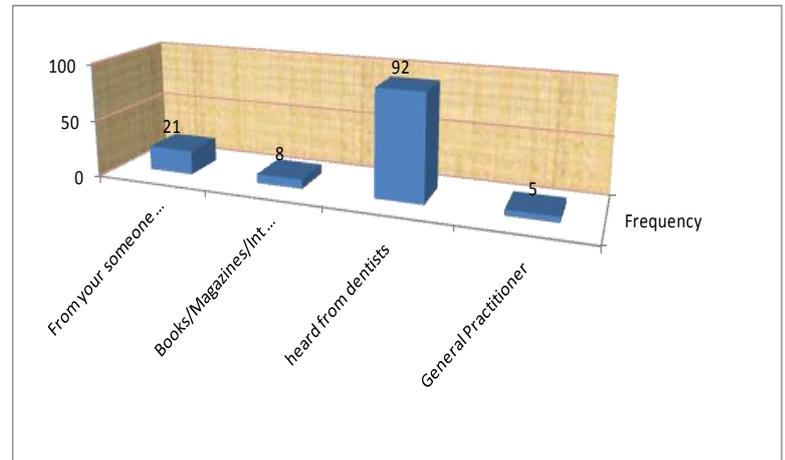
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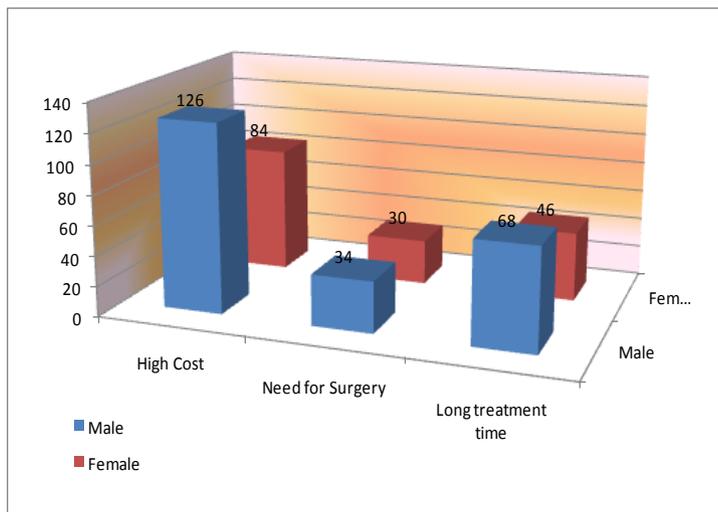
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**Fig. no.1** Distribution of study population on the basis of Alternatives for replacing teeth do you know



**Fig. no.2** Distribution of study population on the basis of question of where did you get to know about implant as an alternative for missing teeth



**Fig. 3** Biggest disadvantage of dental implant supported dentures/ bridges.

**PROFORMA OF STUDY****TO STUDY AWARENESS OF PATIENTS ABOUT IMPLANT AND WILLINGNESS FOR IMPLANT**

Date; - S.No.

Name; - Age;- Gender; - 1.Male  2.Female Education; - 1. Uneducated  2. Primary  3. Secondary  4. Graduate  5. Postgraduate 

Address;-

Mobile / Telephone;-

Occupation; - 1.Student  2.Unemployed  Housewife  3. Unskilled  4. Professional  5. Business 

Present Complaints; -

Diagnosis;-

**Questionnaire**

1. Do you think missing teeth should be replaced?
  - A. Yes, Always
  - B. Yes, if gap is visible
  - C. No
2. What alternatives for replacing teeth do you know?
  - A. Fixed partial dentures
  - B. Removal partial dentures
  - C. Removal complete dentures
  - D. Implant supported reconstructions
3. Are you aware of implant as an alternative for missing teeth?
  - A. Yes
  - B. No
4. If yes, then where did you get to know about it?
  - A. From your dentist
  - B. Books/magazines/internet
  - C. Heard from someone who has undergone this treatment?
  - D. General practitioner
5. How well informed do you feel about implants?
  - A. Very well
  - B. Well
  - C. Moderately well
  - D. Poorly
  - E. Not at all
6. Do you have knowledge of the implant placement procedure?
  - A. Yes
  - B. No
7. Would you like to know more about dental implants?
  - A. Yes
  - B. No
8. Would you be content with a removal replacement/ denture as replacement for missing teeth?
  - A. Yes
  - B. No
9. What do you think is the biggest disadvantage of dental implant supported dentures/ bridges?
  - A. High cost
  - B. Need of surgery
  - C. Long treatment time
10. What do you think is the biggest advantage of dental implant supported dentures/ bridges?
  - A. Found replacement is better
  - B. Looks better
  - C. Good in function
  - D. Avoids grinding of natural teeth
11. Are you willing to undergo an implant procedure if it is needed as treatment option
  - A. Yes
  - B. No
  - C. May be /not sure
12. If, No then what is the reason?
  - A. No, cleaned like natural teeth
  - B. No, need less care than natural teeth
  - C. Yes, need more care than natural teeth
13. What do you personally think of dental implant treatment?
  - A. Would have opted for it if needed
  - B. Would have opted other alternatives