

Patient's Knowledge, Awareness and Attitude towards Dental Implants and Its Treatment Procedure: A Hospital Based Survey

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Abstract

Aim: To assess the knowledge, awareness and attitude of patients towards dental implants and its treatment procedure.

Materials and Method: A questionnaire consisting of 12 close ended questions was used to assess the level of knowledge and awareness among patients visiting Prosthodontics department of Narsinhbhai Patel Dental College in Visnagar regarding dental implants as a treatment option for replacing missing teeth. A total of 100 participants were interviewed to collect the required data. Chi-square test was used to study the association between demographic variables and awareness of implant.

Results: 65% of the population with missing teeth knew about dental implants as a treatment choice. For 50% of the population, the source of information regarding prosthetic options was through dentists. Only 48% of population were willing to go for dental implants. Awareness percentage was significantly higher among those whose education level was graduation and above ($P < 0.05$).

Conclusion: Knowledge and awareness regarding dental implants is disturbingly low among studied population. The patients had a very minimal and superficial knowledge regarding prosthetic options. Emphasis should be placed on the need for conducting and implementing

various public awareness campaigns and for establishing counselling centers.

Keywords: Awareness, Dental implants, Education, Knowledge, Survey

Introduction

The main role of prosthodontist is the rehabilitation of patients after loss of teeth and oral function. Edentulism is an unresolved health care issue of sustained significance and prevalence in the population. There are many treatment options to treat complete or partial edentulism which includes fixed partial denture, removable partial denture, complete denture etc. With ongoing research, newer treatment options also came. With the advancement of new technology, implant treatment has come into focus, because it provides excellent long term results in prosthetic rehabilitation of partially or completely edentulous patients.

This attachment mechanism was discovered by means of an accidental finding by Prof.Per Ingvar Branemark and his colleagues during 1950s – 1960s¹. Several prosthodontists around the world chose to develop the notion of implant. As a result, a new era of prosthodontic services for the edentulous patients has emerged. As this newer technology came, it also got important that the correct knowledge about this technology spreads to the patients, so that they can use this treatment modality.

Esthetics is becoming most favouring factor for implants while cost is becoming a factor against it². Although it has been discovered since many years, still its knowledge among public is not as prevalent.

A very important aspect of dental implants placements is the knowledge and high cost. It is imperative to know the level of awareness among the general public regarding the use of dental implants. It has been observed that people belonging to the middle economic class have little knowledge regarding dental implants. However, people who did have knowledge, their major concern was the high cost³. Knowledge of dental implants has differed among various age groups. The younger public has demonstrated better awareness to the placement of dental implants, whereas, the older adults showed poor knowledge. The acceptance of dental implants in the elderly public can be increased by providing further information and promoting oral health in general. Regardless of the age, dental implants should be placed when patients are still in good health and live independently⁴. Another major factor is education because educated people have more tendencies to understand newer technology and accepting it.

There are generally no accepted rules about how to estimate need, demand and utilization of prosthodontic services in most situations, since individual preferences play a very important role. This makes it difficult to assess the knowledge and that makes it even more difficult to understand the need of particular population for knowledge of dental implants.

To resolve this problem, this study was undertaken to assess the level of knowledge and attitude of patients towards implant treatment as an option for replacement of missing teeth with different education levels and different age groups. Hence, the study aimed to assess the

knowledge, awareness and attitude of patients towards dental implants and its treatment procedure.

Materials and Method

Study design and study population

This study adopted a cross-sectional survey design and was done over 1 month period of time. The target population for this study was the Prosthodontics outpatients of Narsinhbhai Patel Dental College & Hospital situated in Visnagar, Gujarat. The data was collected by interviewing a total of 100 participants (52 males and 48 females) who agreed to participate and signed the consent form and they were selected randomly. The study was conducted after receiving approval from the Institutional Ethics Committee. All the participants were either partially or completely edentulous within the age groups of 20–75 years. (Mean of age = 54.5 years for males, 45.1 years for females)

In this study, a Performa was prepared which contains all the questions with can assess the knowledge of patients about need for implant, how implant system works, their pros and cons and reasons of patients for acceptance or rejection of implants.

This study was undertaken in Institute of Narsinhbhai Patel Dental College and Hospital in Visnagar. So, being the only dental institute in whole North Gujarat region, this hospital has both rural and urban population as patients. This study was conducted here to understand the mindset of patients of this population and their need of knowledge regarding implants.

The questionnaire

A self-explanatory questionnaire was designed to assess the patient's knowledge, awareness and attitude regarding dental implants and its treatment procedure. The questions were revalidated through two professors of Prosthodontics, and a pilot study was performed on ten dental patients to evaluate the efficiency of the

questionnaire. The questionnaire was finalized with the necessary modifications. The final questionnaire comprised of demographic variables and 12 multiple-choice questions relating to the study objective. The questions included dental status, replacement for missing teeth if any, and the general attitude toward the need for prosthodontic evaluation. This set of questions assessed their awareness level and source of information about dental implants as a treatment option as compared to other prosthetic options, information about dental implant's surgical procedure, reasons for accepting or rejecting dental implants and knowledge of full dental implant procedure. Considering the local language as Gujarati and poor English language ability of the participants, it was decided that an interviewer will ask questions from this questionnaire form who knows the language of the responder and the questionnaire forms were also translated in both English and Gujarati.

Statistical analysis

A total of 100 participants were interviewed to collect the required data. Data were summarized by computing the frequency and percentages. Chi-square test was used to study the association between demographic variables and awareness about implantation. Statistical package SPSS version 20.0 was used to analyze the data and whether level of significance is equal or less than 0.05.

Results

Table 1: Question and answers and their education wise distribution

Questions & Answers	Up to 7th standard n(%)	Up to 12th standard n(%)	Up to bachelor degree n(%)	Up to master degree and above n(%)
1. Dental implant is an alternative to replace missing teeth?				
a) Yes	11 (16.9%)	19 (29.2%)	23 (35.4%)	12 (18.5%)

Out of 100 study subjects, 52 were male subjects and 48 female subjects. Mean age of male subjects was 54.54 ± 13.99 years and mean age of female subjects was 45.13 ± 13.76 years..

Majority of the study subjects (33) were having education Up to 7th standard followed by education up to bachelor degree (27), education Up to 12th standard (26) and education Up to master degree and above (14) respectively.

About 65 study subjects believed that Dental implant is an alternative to replace missing teeth. In this majority of the subjects (35.4%) were having education up to college. Majority of the study subjects (50) were getting information from dentists in which 36% were having education up to bachelor degree level. About 48 study subjects replied that they are willing to go for dental implant treatment, if required. In this majority of the subjects (41.7%) were having education up to college. About 52 study subjects replied that they are not willing to go for dental implant treatment, if required. In this majority of the subjects (51.9%) were having education Up to 7th standard. Upon asking the reason regarding the unwillingness of implant, majority of the study subjects (23) replied that they are not willing to go for dental implant treatment as it is expensive. In which 52.2% were having education Up to 7th standard.

b) No 22 (62.9%) 7 (20%) 4 (11.4%) 2 (5.7%)

2. If yes, from where have you heard about dental implants?

a) Newspaper / magazines / articles / journals. 0 (0%) 0 (0%) 0 (0%) 0 (0%)

b) Television / radio 1 (50%) 1 (50%) 0 (0%) 0 (0%)

c) Internet 0 (0%) 0 (0%) 5 (100%) 0 (0%)

d) Dentist 6 (12%) 15 (30%) 18 (36%) 11 (22%)

e) Relatives 4 (50%) 3 (37.5%) 0 (0%) 1 (12.5%)

3. Has anyone undergone dental implant treatment in your surrounding?

a) Yes 7 (18.4%) 8 (21.1%) 14 (36.8%) 9 (23.7%)

b) No 26 (41.9%) 18 (29%) 13 (21%) 5 (8.1%)

4. If yes, who has undergone the treatment?

a) Parents 0 (0%) 0 (0%) 2 (100%) 0 (0%)

b) Relatives 0 (0%) 0 (0%) 2 (66.7%) 1 (33.3%)

c) Myself 1 (50%) 0 (0%) 1 (50%) 0 (0%)

d) Neighbours 2 (14.3%) 5 (35.7%) 6 (42.9%) 1 (7.1%)

e) Person I know 4 (23.5%) 3 (17.6%) 3 (17.6%) 7 (41.2%)

5. Will you be willing to go for dental implant treatment, if required?

a) Yes 6 (12.5%) 11 (22.9%) 20 (41.7%) 11 (22.9%)

b) No 27 (51.9%) 15 (28.8%) 7 (13.5%) 3 (5.8%)

6. If yes, why are you going for dental implant treatment?

a) Does not damage the adjacent tooth 1 (12.5%) 1 (12.5%) 4 (50%) 2 (25%)

b) No food lodgement 0 (0%) 0 (0%) 1 (100%) 0 (0%)

c) Protects gums	0 (0%)	0 (0%)	0 (0%)	1 (100%)
e) Ease of chewing	4 (15.4%)	7 (26.9%)	10 (38.5%)	5 (19.2%)
f) All of the above	1 (8.3%)	3 (25%)	5 (41.7%)	3 (25%)

7. If no, what is the reason you are not opting for the dental implant treatment?

a) High cost	12 (52.2%)	7 (30.4%)	3 (13%)	1 (4.3%)
b) Need of surgery	3 (60%)	1 (20%)	1 (20%)	0 (0%)
c) Treatment duration	3 (100%)	0 (0%)	0 (0%)	0 (0%)
c) Rate of failure	4 (50%)	2 (25%)	2 (25%)	0 (0%)
d) No facility around	2 (33.3%)	3 (50%)	0 (0%)	1 (16.7%)
e) Any other reason	3 (42.9%)	2 (28.6%)	1 (14.3%)	1 (14.3%)

8. If dental implant fits in a jaw bone?

a) Yes	15(23.4%)	16(25%)	22 (34.4%)	11(17.2%)
b) No	18(50%)	10(27.8%)	5 (13.9%)	3(8.3%)

9. If Dental implant requires a minor surgical procedure?

a) Yes	16 (26.2%)	14 (23%)	22 (36.1%)	9 (14.8%)
b) No	17 (43.6%)	12 (30.8%)	5 (12.8%)	5 (12.8%)

10.a Will you go for that minor surgical procedure?

a) Yes	5 (10.9%)	11 (23.9%)	20 (43.5%)	10 (21.7%)
b) No	28 (51.9%)	15 (27.8%)	7 (13%)	4 (7.4%)

10.b If no, why?

a) Fear of surgery	2 (40%)	2 (40%)	1 (20%)	0 (0%)
b) Cost of surgery	19 (51.4%)	11 (29.7%)	5 (13.5%)	2 (5.4%)
c) Pain	5 (55.6%)	2 (22.2%)	1 (11.1%)	1 (11.1%)

d) Any other reason 2 (66.7%) 0 (0%) 0 (0%) 1 (33.3%)

11. Can dental implants be placed immediately after extraction of tooth?

a) Yes 4 (11.8%) 7 (20.6%) 13 (38.2%) 10 (29.4%)
 b) No 29 (43.9%) 19 (28.8%) 14(21.2%) 4 (6.1%)

12. Post dental implant placement, fixed restoration will be delivered in how much time?

a) 1 Month 6 (30%) 4 (20%) 7 (35%) 3 (15%)
 b) 2 Months 1 (25%) 3 (75%) 0 (0%) 0 (0%)
 c) 3 Months 3 (13%) 7 (30.4%) 5 (21.7%) 8 (34.8%)
 d) More than 6 months 23 (43.4%) 12 (22.6%) 15 (28.3%) 3 (5.7%)

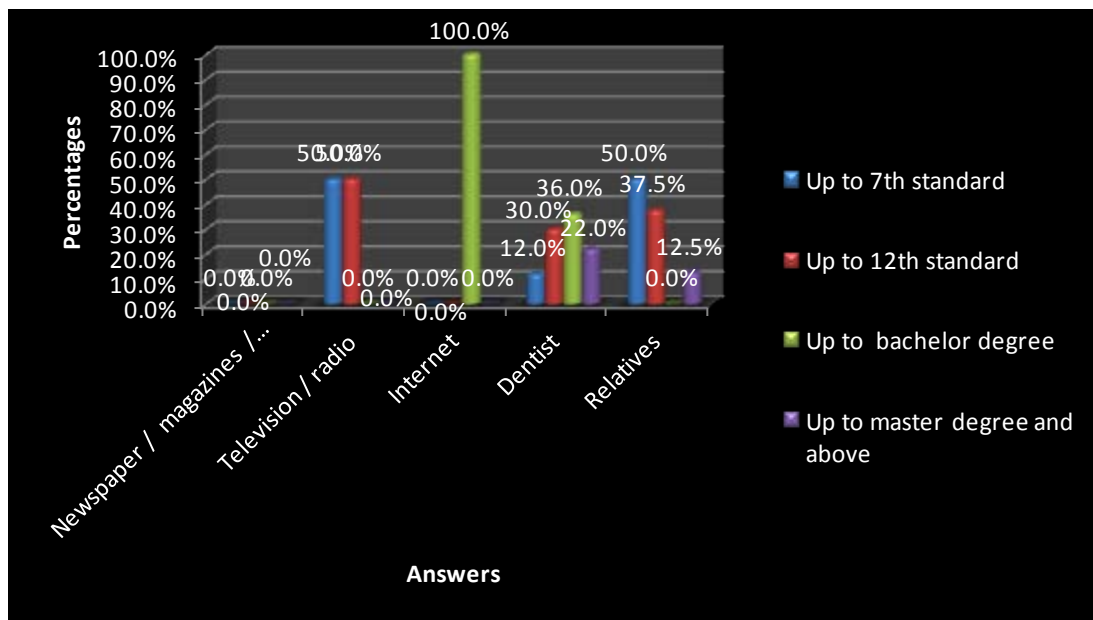


Figure 1: Question 2 and its education wise distribution

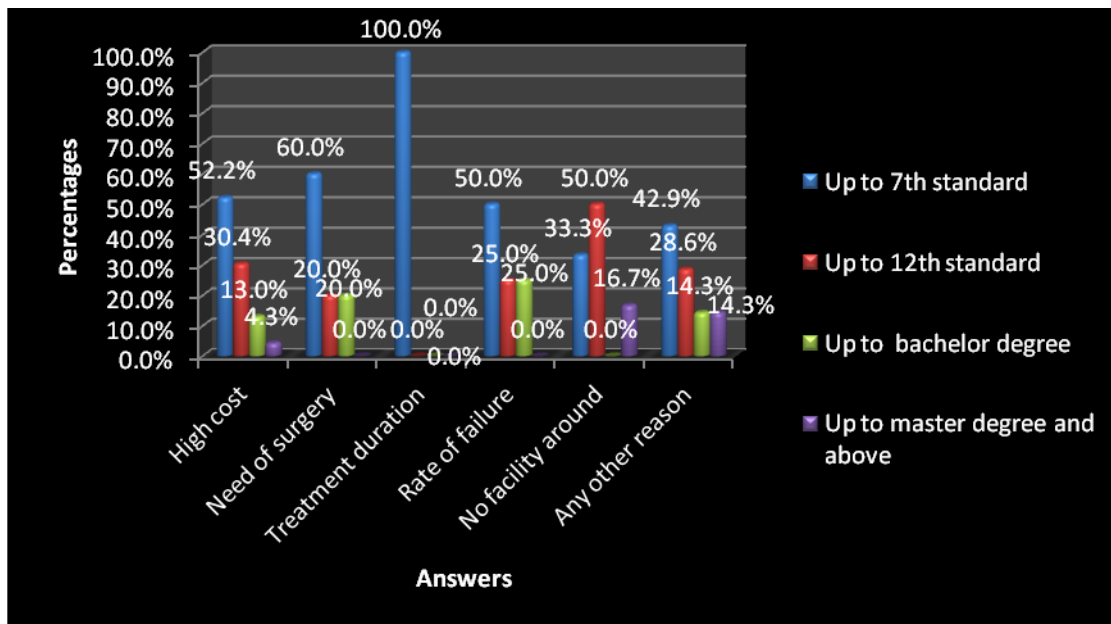


Figure 2: Question 7 and its education wise distribution

Discussion

The patient survey of the level of awareness among Indian public about dental implants differs significantly in different states and districts and different studies has been held for the same. The present survey gives information about the participants' knowledge and their need for more information related to dental implants and its surgical procedure and prosthetic procedure in a sample of dental patients visiting a dental college situated in Visnagar, Gujarat.

It was shown through results that high level of education increased the implant awareness among the participants in this study. The gender did not influence the awareness rate which was similar to that reported by Pommer et al.⁹ In contrast, other studies^{24,25} have reported increased awareness among female participants, while few studies^{26,27} showed increased awareness among male participants. So, in both male and female subjects, major subjects have education up to 7th standard which is the major reason for lack of awareness in them regarding implants.

About 65 study subjects believed that Dental implant is an alternative to replace missing teeth. In this majority of the subjects (35.4%) were having education up to college. About 35 study subjects believed that Dental implant is not an alternative to replace missing teeth. In this most of the subjects (62.9%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels. In the studies conducted by Suwal et al.²⁸, and Al-Johany et al.⁸, 52.6%, and 66.4%, respectively, were aware of implant therapy.

Majority of the study subjects (50) were getting information from dentists in which 36% were having education up to bachelor degree level. Significant difference was present among subjects with various education levels and source of information of Implants. Many studies found that dentists were the main source of information of the subjects conducted by Kohli et al.²², and Tomruk et al.¹⁴ (53.6%, and 44.5% respectively). As it is a dental hospital based study, it is also one of the

reasons that patients here were informed about implants by dentists. Zimmer et al.² found through a survey conducted in the USA that media and friends (77%) play a much more important role. But in this study result shows only few patients were aware about implant through newspaper, television and relatives (15). So In India, media should present more information regarding implants in rural areas.

About 38 study subjects replied that someone has undergone dental implant treatment in their surroundings. In this majority of the subjects (36.8%) were having education up to college. About 62 study subjects replied that no one has undergone dental implant treatment in their surroundings. In this majority of the subjects (41.9%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels. Many study subjects (17) replied that their relative has undergone the treatment in which 23.5% were having education up to primary school. Significant difference was present among subjects with various education levels with above question. So it is clearly showing that education levels are affecting the awareness and willingness for implants.

About 48 study subjects replied that they are willing to go for dental implant treatment, if required. In this majority of the subjects (41.7%) were having education up to college. About 52 study subjects replied that they are not willing to go for dental implant treatment, if required. In this majority of the subjects (51.9%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels. And it can be seen easily that the public which are willing for implants are mainly people with higher education.

Upon asking, why they want to go for implants, majority of the study subjects (26) were replied that they are

willing to go for dental implant treatment as it makes in chewing food easy. In which 38.5% were having education Up to 7th standard. Significant difference was present among subjects with various education levels with reasons for dental implants. The knowledge regarding food entrapment, gum protection and any other reason was very less.

Upon asking the reason regarding the unwillingness of implant, majority of the study subjects (23) were replied that they are not willing to go for dental implant treatment as it is costly. In which 52.2% were having education Up to 7th standard. Significant difference was present among subjects with various education levels with reasons for not going for dental implants because with low education level, low socio-economic level is connected and that is the main reason for patient's rejection towards implants. Similarly, in the other studies the strongest argument against implant therapy was the high costs^{2,25,30,31}. It is important to underline the patients that quality of life outweighs high cost of implants. The advantages and disadvantages of different types of treatment modalities should be properly explained so they can make an informed decision. The other reasons in this study are rate of failure (8) and other reasons like fear of metal in mouth, fear of surgery, no facility around (6). So, the correct information regarding the reasons of failure should be given and in this rural area, more clinics should be made with facilities.

About 64 study subjects believed that dental implant fits in a jaw bone. In this majority of the subjects (34.4%) were having education up to college. About 36 study subjects believed that dental implant does not fit in a jaw bone. In this majority of the subjects (50%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels. Statistically, no any significant

difference was present among subjects with various education levels and knowledge of requirement of minor surgery for implants.

About 46 study subjects replied that they are ready to go for that minor surgical procedure for implants. In this majority of the subjects (43.5%) were having education up to college. About 54 study subjects replied that they are not ready to go for that minor surgical procedure for implants. In this majority of the subjects (51.9%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels.

Majority of the study subjects (37) were replied that they are not ready to go for that minor surgical procedure as it is costly. In which 51.4% were having education Up to 7th standard. Significant difference was present among subjects with various education levels with reasons for not going for surgical procedure of dental implants.

About 34 study subjects replied that dental implants can be placed immediately after extraction of tooth. In this majority of the subjects (38.2%) were having education up to college. About 66 study subjects replied that dental implants can't be placed immediately after extraction of tooth. In this majority of the subjects (43.9%) were having education Up to 7th standard. Statistically, significant difference was present among subjects with various education levels.

Majority of the study subjects (53) replied that they fixed restoration will be delivered in more than 6 months after dental implant placements. In which 43.4% were having education Up to 7th standard. Significant difference was present among subjects with various education levels with time period of fixed restoration placements after dental implant placement.

So regarding the procedure of implant and prosthesis placement, education plays an important role and as this

study is done in a rural area, there is very less education and information regarding implant and even lesser regarding the prosthetic procedure of implant. In rural areas like Visnagar, firstly more schools and colleges should be built so that the education level gets increased in patients. Informative articles should be published in local news papers, and advertisements should be shown on television in regional language. Dental hospitals and doctors should arrange camps which are showing patients audio visual aids regarding implants and address their questions regarding implants as well. All the hospital and clinics should have models and posters regarding implants and dentist should explain it on patient's first visit. In rural areas like Visnagar, street plays can also be done to increase the knowledge and information regarding implants.

Conclusion

The results of this survey among a selected sample indicated that the majority of the questioned participants were aware about dental implants. But majority of them were not willing to go for implants mainly because of the higher cost. Majority of the patients who had heard about implant were unaware of the procedure of implant placement and prosthetic phase. Awareness about dental implants should be increased by implementing various public awareness campaigns and establishing counselling centers in the patient ward and waiting area of private dental clinics and dental colleges. Special effort is needed to improve the knowledge among less educated population. Advertisement in regional language in local newspaper and television and showing models to patients and their relatives in waiting area can be helpful. Efforts should be made by the public sector to lower the cost of the implants so that they can be made affordable to all.

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