

## Awareness of Different Prosthodontic Treatment Options in Partially Edentulous & Completely Edentulous Patients: A Questionnaire Survey Study

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### ABSTRACT

**Background:** Prosthetic treatment involves the replacement of few missing teeth in a healthy but incomplete dentition, the functional replacement of nearly all teeth in a badly damaged dentition, or restoring function by means of removable or FPDs, implants, complete dentures, or over dentures. This survey was therefore initiated with Awareness of different prosthodontic treatment options in partially edentulous & completely edentulous patients visiting Department of Prosthodontics at AMC Dental College and Hospital, Ahmedabad AIM & OBJECTIVES: AIM: The purpose of this survey is to compare and evaluate the Awareness of patients to the various dental prosthetic restorative procedures & patients regarding their choice of treatment. Motivating factors that drives them to avail dental prosthetic replacement therapy.

**Materials and Method:** The participants were informed about the purpose of the study. The informed consent form was signed by each participant who wishes to participate in this study. A questionnaire validated by subject experts was used for the study. The questionnaire included questions concerned with Awareness of different prosthodontic treatment options. It used a Close Ended Questionnaire with Multiple Choice of Answers.

**Results:** In this study ,majority of males(44.17%) and females(44.89%) were aware of complete denture prosthesis.(1.84%) males & (2.04%)females were aware of removable denture prosthesis. males (2.45%)& females (4.08%) were aware of fixed denture prosthesis, (2.72%)females & (0.61%)males were aware of immediate complete denture, (0.68%) females & (1.87%) males were aware of cast partial denture, (36.73%)females & (42.94%)males were aware of all of the prosthesis. In this study majority of males(65.26%) & (63.26%) females were aware through family,(14.96%)females & (15.33%) males were aware through friends.(14.96%)females & (9.81%)males aware through local dentist.(6.80%) females &(9.20%) males were aware through media.

**Conclusion:** The results observed in this study showed that awareness of patients about removable and complete denture prosthesis is high compared with a fixed prosthesis, especially regarding dental implants. This lack of awareness is more in developing area, villages and town due to lack of education.

**Keywords:** Survey, prosthodontic treatment awareness, removable partial denture, fixed partial denture, cast partial denture, dental implants.

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Tooth loss could interfere with stomathognathic system and causing structural and functional changes such as mastication, digestion, phonetic, aesthetic, temporomandibular disorder and also has psychosocial impact. In fact, a systematic review has concluded that tooth loss is associated with impairment of Oral Health Related Quality of Life (OHRQoL). It was also shown that location and distribution of tooth loss affect the severity of the impairment.<sup>1</sup>

Most edentulous patients require treatment to improve mastication, while some patients are professionals such as teachers, singers or actors who prefer prosthesis for either phonetics or esthetics. There are several factors affecting the final treatment decision regarding the replacement of a missing tooth; these factors are case dependent. The acceptability of treatment is determined by three major factors, i.e., comfort, function, and esthetics. Mechanical and biological factors determine comfort and function. However, a variety of social and cultural influences, attitudes, and beliefs may determine acceptance of the esthetic aspects of prosthodontic treatment.<sup>2</sup>

Prosthodontic treatment depends on a variety of factors. The traditional approach resulted in a fairly uniform treatment option based on the fact that the missing teeth should always be replaced. With the advancements and knowledge in dentistry and improvement in oral health with declining edentulousness in many countries, a higher number of people tend to keep more teeth until later in life.<sup>3</sup> Although several prosthodontic options for the replacement of missing teeth are available, some researchers have highlighted that the acceptability of these options depend on the patient's education, economy, cultural background as well as the age.<sup>4</sup>

Rehabilitation of patients with partially edentulous maxillary and mandibular arches entails a very comprehensive diagnosis and treatment planning for the operator. Long term complications and benefit to risk ratio has to be evaluated before selecting a treatment plan. The ultimate choice of prosthetic replacement is mostly determined by the patient's choice and economical status, accessibility of technological advancements and expertise, as well as the number of missing teeth.<sup>5</sup> Tooth loss is

the result of multifactorial causes such as caries, and periodontal diseases. Tooth loss has an undesirable impact on the psychological status of the patients, which results in a important effect on the self-esteem and social life and most likely patients might experience symptoms of depression with those who have difficulties in accepting tooth loss.<sup>6,7</sup>

Determining the need, prevalence, and the pattern of partial tooth loss is necessary to identify the prosthetic needs of the patients. Significance of prevention has gained slight momentum in the past few decades leading to change in trends in Prosthodontics. People now prefer retaining of natural teeth, which may anticipate a decline in the number of complete dentures with an increase in the number of removable partial dentures (RPD).<sup>8,9</sup> For all cases, the indications and contraindications with the treatment plan should be carefully considered. A thorough and careful assessment of the patient's condition should be taken into consideration to reach clinical success. Dental graduates need to have enough skills and experience to provide patients with all types of prosthesis. Moreover, it is essential that the prosthetics teaching provided is adequate to produce confident and "fully qualified trainees." This will ensure the maintenance of patient safety and the delivery of superior care<sup>10</sup>

Therefore, people need to have more awareness about prosthodontic services specific to partial or complete edentulism for effective adaptation into ones individual and social life with positive psychological impact.<sup>5</sup>

## AIM & OBJECTIVES

The purpose of this survey is to compare and evaluate the awareness of patients to the various dental prosthetic restorative procedures & patients regarding their choice of treatment. Motivating factors that drives them to avail dental prosthetic replacement therapy.

**SELECTION CRITERIA:** Inclusion Criteria: All Complete edentulous patients and partially edentulous patients, irrespective of their age, sex and reason for tooth loss were selected for this survey. All patients were selected irrespective of

whether they have any systemic disease or not. The patients who were willing to participate voluntarily by giving their Consent in the Informed Consent Form. Exclusion Criteria: The patients who were not willing to participate in the study and not providing their Written Informed Consent.

## MATERIALS AND METHODS

An Informed Consent Form and Participant information sheet was taken from all the subjects who participated in this survey. A Survey Questionnaire was filled after the subjects gave their consent to participate in this survey. No Equipment's were required for conducting this survey. Method: Prior to start of the study, The participants were informed about the purpose of the study. The informed consent form was signed by each participant who wished to participate in this study. A questionnaire validated by subject experts was used for the study. The questionnaire included 10 questions concerned with Awareness of different prosthodontic treatment options in partially edentulous & completely edentulous patients. The survey included Close Ended Questionnaire with Multiple Choice of Answers. Total 310 patients were participated in this survey who visited Department of Prosthodontics at AMC Dental College and Hospital, Ahmedabad. All the participants were given the questionnaire. Principal investigator collected the questionnaire. The collected data was entered at the end of the study in the master chart prepared in Microsoft Excel on the computer following which Statistical analysis was done.

### A survey questionnaire:

1. Different types of prosthesis are a) Complete denture b) Removable denture c) Fixed partial denture d) All of the above e) None of the above
2. Different treatment options in complete denture are a) Conventional complete denture b) Immediate complete denture c) Implant supported complete denture d) All of the above e) None of the above
3. Different types of over denture are a) Tooth supported b) Implant supported c) All of the above d) None of the above
4. Different treatment options in removable partial denture are a) Conventional removable partial denture b) Cast partial denture c) Flexible

removable partial denture d)All of the above  
e)None of the above

5.Different treatment options in fixed partial denture are a)Metal crown b)Ceramic crown c)Combination of both d)All of the above e)None of the above

6.Through which source are you aware of different prosthodontic treatment options? a)Family b)Friends c)Local dentist d)Media

7.Dental implant is a a)Screw b)Cap/Crown c)Tooth d)I don't know

8.Immediate denture can be fabricated a)Immediately past removal of teeth b)1 week after removal of teeth c)1 month after removal of teeth d)I don't know

9.Treatment options for tooth/teeth which have flourosis are a)Laminates b)Veneers c)Crown d)Composite e)All of the above f)1 & 2 g)1 & 3 h)2 &4 i)i don't know

10.Strongest material for dental crown is a)Zirconia b)Ceramic c)Metal d)Gold e)I don't know

### SAMPLE DESCRIPTION

The sample size for the study was 310. The Sample size formula is  $n = (Z_{\alpha})^2 pq / L^2$ . If level of confidence = 95%, Expected proportion of factor of interest = 73% & Margin of error (L) = 5%, Then the required sample size be 310.

Statistical Analysis & Results: Statistical Analysis: Data were expressed as mean  $\pm$  SD and analyzed by software SPSS Version 20 (IBM SPSS Statistics for Windows), Chi-square test samples were used. P value < 0.05 was considered as significant. Results After surveyed all the question different treatment options are chosen by the patient and Each question was analysed for the frequency, and the relation between the gender difference was tabulated. The study sample consisted of 52.58% males (N=163) and 47.41% females (N=147).

Q1. Different types of prosthesis are...In the first question, when asked if they aware of the different types of prosthesis, majority of males(44.17%) and females(44.89%) were aware of complete denture prosthesis.(1.84%) males & (2.04%)females were aware of removable denture prosthesis. males

(2.45%)& females (4.08%) were aware of fixed denture prosthesis.,(36.73%)females & (42.94%)males were aware of all of the prosthesis.(12.24%)females & (8.58%) males were not aware of any prosthesis. (P value=0.662)

Q2. Different treatment options in complete denture are...In the second question, when asked if they were aware of the different treatment option in complete denture, surprisingly (1.84%) males &(2.04%)females were aware of implant supported complete denture. (49.65%) females & (55.21%) males were aware of conventional complete denture. (2.72%) females & (0.61%) males were aware of immediate complete denture. (18.36%)females &(20.85%)males were aware of all the treatment options in complete denture.(27.21%)females & (%)males(21.47%) were not aware of any treatment options. (P value=0.421)

Q3. Different types of over denture are...In the third question, 14.28% female & 12.88% male were aware of tooth supported prosthesis.5.44% female & 3.68% male were aware of implant supported prosthesis.6.12%female & 6.13% male were aware of all two types of prosthesis.74.14% female & 77.3% male were not to aware of this type of prosthesis (P value=0.863).

Q4. Different treatment options in removable partial denture are....In the fourth question,45.57% female & 49.07% male were aware of conventional removable partial denture. 0.68% female & 1.87% male were aware of cast partial denture. 0.68% female & 0% male were aware of flexible removable partial denture. 20.4%female were aware of all three types of prosthesis.19.63% male were aware of conventional removable partial denture & cast partial denture.32.65% female & 29.44% male were not to aware of any types this prosthesis. P value=0.664

Q5. Different treatment options in fixed partial denture are In the fifth question, surprisingly (7.48%) females & (5.52%) males were aware of ceramic crown, majority of (36.05%) females & (33.74%) males were aware of all types of otions in fixed partial denture.P value=0.773

Q6. Through which source are you aware of different prosthodontic treatment options? In the

sixth question, through which source are you are aware of different prosthodontic treatment option, majority of males(65.26%) & (63.26%) females got aware through family,(14.96%)females & (15.33%) males got aware through friends.(14.96)females & (9.81%)males were aware through local dentist.(6.80%) females &(9.20%) males were aware through media.P value=0.513

Q7. Dental implant is a...In the seventh question,55.68% female & 39.28% male were aware of dental implant.1.36% female & 1.84% male were aware that dental implant is cap/crown.1.36% female & 1.84% male were aware that dental implant is tooth,41.49% female & 57.66% male were not to aware of dental implant. P value=0.034

Q8. Immediate denture can be fabricated...In the eighth question,8.16% female & 4.9% male were aware of immediate denture that fabricated immediatley post removal of teeth .8.16% female & 12.88% male were aware of immediate denture that fabricated 1 week after removal of teeth,10.88% female & 7.97% male were aware of immediate denture that fabricated 1 month after removal.72.78% female & 74.23% male were not to aware of any types of prosthesis. P value=0.307

Q9. Treatment options for tooth/teeth which have flourosis are.. In the nineth question, 2% female & male were aware of laminates,3.4% female & 3.68% male were aware of veneers, 2.72%female were aware of crown,1.22% male were aware of composite, 4.08% female &4.29% male were aware of laminates, veneers,crown,composite,0.68% female were aware of laminates & veneer, 88.12% female & 89.81% male were not to aware of any types of this treatment options. P value=0.193

Q10.Strongest material for dental crown is... In the tenth question 6.8% female &6.13% male were aware of zirconia crown,25.17% female & 22.08% were aware of ceramic,23.8% female & 24.53% male were aware of metal crown,5.44% female & 7.36% male were aware of gold,36.77% female & 39.87% male were not to aware of any type of prosthesis. P value=0.932.

Data were expressed as mean  $\pm$  SD and analyzed by software SPSS Version 20 (IBM SPSS Statistics for

Windows), Chi-square test samples were used. P value < 0.05 was considered as significant

Table 1: Questionnaire

| TABLE                                                                               | P VALUE | TOTAL SAMPLES |
|-------------------------------------------------------------------------------------|---------|---------------|
| Q.1 Different types of prosthesis are...                                            | 0.662   | 310           |
| Q.2 Different treatment options in complete denture are...                          | 0.421   | 310           |
| Q.3 Different types of over denture are...                                          | 0.863   | 310           |
| Q.4 Different treatment options in removable partial denture are...                 | 0.664   | 310           |
| Q.5 Different treatment options in fixed partial denture are...                     | 0.77    | 310           |
| Q.6 Through which source are you aware of different prosthodontic treatment options | 0.513   | 310           |
| Q.7 Dental implant is a...                                                          | 0.034   | 310           |
| Q.8 Immediate denture can be fabricated...                                          | 0.307   | 310           |
| Q.9 Treatment options for tooth/teeth which have fluorosis are...                   | 0.193   | 310           |
| Q.10 Strongest material for dental crown is...                                      | 0.932   | 310           |

## DISCUSSION

General health is mostly affected by dental health. General health and psychological health are compromised with teeth loss. Missing teeth replacement is very much necessary on early basis to stop oral deterioration and general health condition<sup>3</sup> Awareness of the patients play an important role in the selection of suitable dental prosthesis. We can determine the awareness level among patients in a number of ways.<sup>11</sup> In this study ,majority of males(44.17%) and females(44.89%)were aware of complete denture prosthesis .(1.84%) males & (2.04%)females were aware of removable denture prosthesis. males (2.45%)& females (4.08%) were aware of fixed denture prosthesis, (2.72%)females & (0.61%)males were aware of immediate complete denture, (0.68%)females & (1.87%)males were aware of cast partial denture, (36.73%)females & (42.94%)males were aware of all of the prosthesis. Sources of Information for the patients about

Prosthodontic Treatment Options, (33.6%),(39.4%), (10.9%), were aware through relatives, friends, dentist or media respectively.<sup>12</sup> In this study majority of males(65.26%) & (63.26%) females were aware through family,(14.96%)females & (15.33%) males were aware through friends.(14.96)females & (9.81%)males were aware through local dentist.(6.80%) females &(9.20%) males were aware through media.

In this study females (55.78%), males (39.26%) were aware of implants, surprisingly (3.40%) females, (3.68%) males were aware of veneer., Treatment options for tooth/teeth which have fluorosis, 88.12% female & 89.81% male were not too aware of any types of this treatment options. (6.80%)females and (6.13%)males were aware of zirconia material.(25.17%)females and (22.08%)males were aware of ceramic material. SV Siva Teja et al reported in their study that most of the males (71.9%) and females (74.2%) were aware of the removable denture. (66.4%) males & (63.4%)females were aware of fixed denture. Only around one fourth of the subjects were aware of the implants as a mode of prosthodontic rehabilitation.<sup>13</sup> Md Sirajur reported (74.66 %), (56.66%) and (13.33 %) patients were aware for removable partial denture, fixed partial denture and implants respectively.<sup>14</sup> Jayasinghe et al reported , 51.0% male and 45.2% female opted for FPD followed by RPD, no replacement and least chosen one was implant.<sup>15</sup> According to Rehman Ansari et al, Level of awareness and knowledge in his research showed that 77% of patients were aware of RPD. Among these patients, the proportion for the awareness about Cast partial dentures and acrylic dentures was respectively 22.8% and 54.2%. There was no patient who was aware of immediate denture. A average percentage of 5.5% was reported about implant supported prosthesis.<sup>16</sup> Most of participants thought that implant supported prosthesis would be a better option (61.6%) and quite a lot of participants thought that implant supported prosthesis was not.<sup>16</sup> 81.25% (325) were aware about fixed partial dentures, and 63% (252) were aware about dental implants.<sup>17</sup>

According to Kuzhalvaimozhi et al, Among the 250 population, majority (58%) of participants were aware of removable partial denture whereas 42% of participants are not aware of removable partial denture, majority (54%) of the population are not

aware of fixed partial denture, whereas 46% of the population were aware of fixed partial denture.<sup>17</sup>

Lack of awareness of various prosthodontic treatment options amongst patients prevented them from utilising treatment. Dental camps and prosthodontic outreach programmes are possible solution to change of attitude, to spread awareness & provide knowledge about ways and means of artificial teeth replacement.

## CONCLUSION

The results observed in this study showed that awareness of patients about removable and complete denture prosthesis is high compared with a fixed prosthesis, especially regarding dental implants. Hence, measures should be taken to improve awareness of the patients. To achieve this goal, oral health-care providers, relatives have a major role to play. Patients should be made aware of the complications of not replacing missing teeth immediately and also about various treatment options. This will improve the attitude of patients toward the latest treatment options available to replace lost teeth, thereby improving the quality of life in patients. Still there is a need for bringing more awareness about prosthetic treatment option by implementing various public awareness campaigns and establishing counseling centers in the patient outpatient ward of private dental clinics and dental colleges. Special effort is needed to improve the knowledge among females and less educated population.

Dentists 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.

Mobile dental clinics, dental camps, and prosthodontic out reach programs are possible expositions to spread awareness, and thus to alter attitude and behavior towards replacements of missing teeth. Moreover, the availability of reasonable dental resources to the local community must be ensured.

## CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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