

Assessing Patient Awareness and Attitude towards Prosthodontic Options for Missing Teeth: A Study Conducted at a Tertiary Care Dental Hospital in Islamabad

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ABSTRACT

Objectives: The aim of the study was to determine the knowledge gap and the level of awareness about tooth replacement options, among patients visiting a Tertiary Care Dental Hospital.

Materials and Methods: This cross-sectional study was conducted on 170 patients with missing teeth at the Prosthodontic Department of a private Dental College in Islamabad from 10th April 2023 to 10th September 2023, by using convenience non-probability sampling. Upon obtaining informed consent from the participants, a comprehensive medical history was acquired, accompanied by a thorough examination of the oral cavity. Data collection involved querying the participants through a questionnaire designed for this study. SPSS version 23.0 was used to analyze data.

Results: Half of the patients were knowledgeable about acrylic partial dentures and fixed partial dentures, while only 10% were aware about complete denture therapy. Awareness of dental implants was noted in only 5% of the patients, and awareness of cast removable partial dentures was as low as 1.8%. None of the patients had knowledge about immediate dentures and overdenture therapy.

Conclusions: Patients visiting the dental college have a low level of awareness about prosthodontic treatment options.

Keywords: Complete Denture, Fixed Partial Denture, Implants, Removable Partial Denture

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INTRODUCTION

The importance of oral health is such that it can disrupt a person's daily life and work routine. One of the most important factors causing discomfort and at times devastating effects on a person's quality of life is tooth loss.¹ Loss of teeth can significantly impair one's masticatory efficiency and oral functions, which as a result declines oral health quality of life. The major causes of missing teeth include periodontal problems and dental caries. Other may be congenitally missing teeth or tooth loss due to trauma.²

The repercussions of missing teeth include esthetic concerns, deficient mastication, lack of facial support, bone loss, and speech issues. If the teeth are left unreplaced they can lead to drifting of adjacent teeth and supra eruption of opposing teeth which results in more complications during treatment.³ Therefore, to overcome these problems, the missing teeth should be replaced as soon as possible.

Generally, two options are available to replace the missing teeth which are removable prosthesis and fixed prosthesis. Fixed prosthesis may be tooth supported fixed partial denture or implant supported prosthesis.⁴ However, there are several factors affecting the need of missing natural teeth which include age, gender, socioeconomic status and educational level etc. Even if the replacement of the missing teeth is strongly indicated, most patients do not get the treatment done just due to the lack of awareness about the prosthodontic treatment options available.⁵ Moreover, financial issues are also a greater determinant for patients seeking treatment and selecting a specific prosthodontic treatment option.⁴ In a similar study conducted by Ali et. al in Pakistan, revealed that the primary reason for not choosing dental implants as a prosthesis (35.2%) was found to be their high cost.⁶

Therefore, improved awareness and knowledge about the different treatment options available for the replacement of missing teeth can help patients make more appropriate decisions.⁴ In a study conducted in India, 65.1% of the general population showed awareness about prosthodontic treatment and awareness of different treatment options available for tooth replacement.¹³ Likewise, in a similar study conducted in Pakistan showed that 65% of the general population had medium level awareness while only 13.9% had low level of awareness regarding different treatment options

available for missing teeth.² While in a Norwegian study conducted in 2001, the report shows the dental awareness level was about 70%.² The higher level of awareness in western countries reflects better dental awareness due to high level of literacy rate. Studies show that most of the patients consider replacement of anterior teeth more important than posterior teeth, and aesthetics is given more importance than function.¹⁰ The loss of teeth occurs slowly with time; therefore, some individuals adapt to this change and do not feel the need to replace the teeth. Hence, prior to the start of treatment, the prosthodontist should inform and educate the patient. This ensures realistic outcomes.¹¹

This study aimed to evaluate the levels of awareness among patients regarding the treatment options available for replacing missing teeth who were visiting Islamic International Dental College, as well as contribute to the existing literature on this topic in Pakistan where there is scarcity of such research. This would also help determine the knowledge gap between the treatment choice and the amount of awareness, as well as help educate the prosthodontic and dental community thereby leading to more informed counselling.

MATERIALS AND METHODS

This cross-sectional study was conducted in the outpatient department of Prosthodontics at Islamic International Dental College, Islamabad. The duration of the study was five months extending from 10th April 2023 to 10th September 2023. The objective was to determine the knowledge gap and the level of awareness among patients visiting a private dental college. The ethical approval was obtained from the institutional committee. The study used a convenience non-probability sampling method to select 170 patients. The sample size calculation for this study was based on the World Health Organization (WHO) sample size calculator. The confidence level was kept at 95% with a margin error of 5% to determine the sample size.

A self-designed questionnaire was made in both Urdu and English language to cater to patients of varying educational backgrounds. Its validity was established through reference to existing literature, consultation with language experts, and input from the expert prosthodontists. The questionnaire had two parts. The first part asked about the participants' demographic and dental information, such as gender, age, marital status,

education, and edentulous period. The second part measured their awareness of various aspects of tooth replacement, such as the types of dental prostheses and the issues caused by tooth loss. The study included male and female patients aged 20 to 80 years who had no previous prosthodontic treatment and at least one missing tooth (except the 3rd molars) and patients who provided informed consent and who filled out the questionnaire completely. The study excluded completely edentulous patients, partially edentulous patients with compromised remaining natural teeth that needed extraction due to periodontal reasons, patients with mental or physical disabilities or dentoalveolar defects, as well as who did not provide informed consent and who failed to fill out the questionnaire completely.

This study recruited patients with missing teeth who visited the Prosthodontic department's OPD. After obtaining informed consent, the researcher conducted a comprehensive oral examination and collected the patients' medical history. The inclusion and exclusion criteria were then applied to screen the eligible patients. The patients answered the questionnaire about their awareness of prosthodontic treatment options for replacing natural teeth. The questionnaire was filled through face-to-face interviews with patients conducted by a designated trained researcher. This approach

ensures clarity of questions, the anonymity of the patient data, and helps in addressing any concerns or queries raised by the participants.

The analysis of the collected data was done using a Statistical Package for Social Sciences version 23.0. The quantitative variable, age, was intended to be represented using the mean, while the qualitative variable, gender, was to be presented as frequency percentages.

RESULTS

A total of 170 patients were part of the study to determine the level of awareness about prosthodontic treatment among patients visiting IIDC, Islamabad. Patients ranged in age from 20-80 years with mean age of 62.01 with S.D. of ± 10.21 years. Out of them, 85 (50%) were males and 85 (50%) were females.

Table 1 shows the patients' awareness of different prosthodontics treatment within the total sample of 170. Out of the selected patients, 84 (50%) knew about acrylic partial denture, 3 (1.8%) about cast removable partial dentures, 50 (29%) about fixed partial dentures (FPD), 11 (6.5%) about dental implants (DI), and 10 (5.8%) about complete denture treatment. No one was aware of immediate denture or over denture. Only 1 (0.6%) knew about flexible denture.

Table No 1: Awareness level of patient regarding different prosthodontics treatment options

Sr. No	Treatment Modality	Yes (Frequency)	No (Frequency)
1	Acrylic Partial Denture	84(49.4)	86 (50.6)
2	Cast Partial Denture	3(1.8)	167(98.2)
3	Complete denture	10(5.8)	160(94.1)
4	Over Denture	0(0)	170(100)
5	Immediate Denture	0(0)	170(100)
6	Dental Implants	11(6.5)	159(93.5)
7	Flexible denture	1(0.6)	169(99.4)
8	Fixed partial denture	50(29)	120(70)

Table 2 outlines the factors contributing to the need for tooth replacement within the total sample of 170. Among the respondents, 124 (72%) mentioned replacing missing teeth due to chewing difficulties,

while 72 (42%) were motivated solely by aesthetic concerns. Additionally, 58 (34%) of the reported cases expressed both aesthetic and chewing concerns as reasons for tooth replacement.

Table 2: Reasons for tooth replacement

Sr. No	Reason for tooth replacement	Yes Number (%)	No Number (%)
1	Chewing difficulty	124(72.9)	46 (27.1)
2	Aesthetic concern	72(42.4)	98(57.6)
3	Both	58(34.1)	112(65.9)

Whereas table 3 shows the various factors that prevented the patients from getting their teeth replaced within the total sample of 170. Out of them, 41% (71)

could not afford it, 85.3% (144) did not have enough information, and 71.3% (122) were unaware of the benefits.

Table 3: Reasons for delay in tooth replacement

Sr. No	Reason for Not Replacing	Yes Number (%)	No Number (%)
1	Lack of knowledge	145(85.3)	25 (14.7)
2	Lack of awareness	122(71.8)	48(28.2)
3	Lack of financial recourses	71(41.8)	99(58.2)

DISCUSSION

Currently, our nation is facing the challenges of a low literacy rate and poor socioeconomic conditions. An initiative was undertaken to understand the level of awareness among the population visiting our department about prosthodontic treatments for missing teeth. This initiative involved conducting a study to gain insights into patients' awareness of tooth replacement options. By administering a questionnaire and analyzing responses, the aim was to assess patients' knowledge and understanding of dental prosthesis, which can influence their treatment choices. It's been observed that most patients don't seek help from a prosthodontics clinic until they experience issues with mastication and aesthetics. In Pakistan, there is a lack of comprehensive epidemiological data on patients' attitudes towards tooth replacement. Hence, this study was conducted at the Islamic International Dental College, Islamabad, to gain insights into patients' awareness on replacing missing teeth.

The knowledge patients have about dental prosthesis plays a crucial role in their choice of a specific dental prosthesis. There are many ways to determine a patient's knowledge and awareness. In this research, a self-designed questionnaire was utilized, while Meer Rownaq Ali et al. employed a structured questionnaire via Google Forms. He also disseminated the questionnaires in public areas and advertised them on social media for anonymous responses.⁷

Various factors, such as age, gender, educational background, socioeconomic status, geographical location, and the extent of tooth loss, play crucial roles in determining awareness levels regarding various dental prosthesis. Alalawi et al. observed a correlation between age and the number of teeth missing in participants, suggesting that as people get older, they may lose more teeth and consequently need more prosthetic replacements due to their advanced age.⁸ Al-Fareh et al. also discovered that one of the contributing factors was dental phobia, along with the duration required for the treatment procedure especially for implants.⁹

The research by Siddique et al. showed that dental implants were known by most (93.4%) of the patients, who were mainly in the age group of 26–45 years.¹⁰ This was close to the finding of Alajlan et al, who reported that 91.5% of the respondents had heard about implants.¹⁴ Abdulhadi et al. also found a high percentage (49%) of awareness for dental implants among the patients who visited Al Iraqia University-college of dentistry.¹⁶ These results are different from this study, where only a few patients (6.5%) had heard of dental implant as a possibility. This disparity could possibly be linked to the fact that their study was focused on implant-supported rehabilitation, whereas ours was aimed to raise awareness about all available prosthodontic choices. The increased awareness level and the literacy rate in the parts of the country where this research was conducted could be a major reason for this

remarkable difference.

Nevertheless, our study closely aligns with another local research, such as Baqar et al, which reported a 9.8% awareness of implant-supported prostheses.¹¹ A comparable investigation by Khan et al. demonstrated a 26% awareness of dental implants among the participants.¹⁹ Similar results were observed in the international surveys done by Sharan et al. (11.4%)¹², Gupta et al. (15.6%)¹³, Gupta et al. (21%).¹⁵

The study done by Gupta et al. revealed that 71.5% of the surveyed population had awareness for Fixed Partial Denture and 66.5% for removable partial denture (RPD's). Awareness regarding complete denture therapy was found to be 64.5% which is very high compared to this study's finding where only 10% are aware of Complete Denture.¹⁵ This disparity in results can be due to the socio-economic factors and access to healthcare resources, along with higher education levels in developed countries.

Another finding of this study was that the reason for replacement of missing teeth in a great majority of patients was due to difficulty in chewing function that is (72.9%) which is confirmed by the study done by Aslan et al. in which 92% of the participants stated difficulty in chewing to be the main reason for tooth replacement.¹⁷ One possible reason for the difference in results could be attributed to variations in the oral hygiene practices among participants which can influence the prevalence of chewing difficulties and the perceived need for tooth replacement.

Patients were unable to opt for a treatment because they were unaware of the numerous prosthodontic treatment alternatives. According to a study by Menezes et al, dental camps and prosthodontic outreach programs are possible alternatives for changing attitudes, spreading awareness, and providing knowledge regarding methods and means of prosthetic tooth replacement.¹⁸

In general, the results obtained in this study revealed that awareness of patients about different dental prosthesis is very low. There is an immense need to improve awareness of the patients. It is because of awareness, which helps the patients to have early replacement of missing teeth. The timely provision of adequate dental prosthesis will help the patients to achieve a better quality of life.¹⁹

This study has certain limitations. It used a small sample

size and non-probability sampling technique which may have influenced the representativeness of the findings. Furthermore, conducting the study in only one center may have introduced site-specific biases. The small sample size in comparison to other cited studies could have impacted the statistical power and precision of the results as well. These limitations affect the applicability of the results to the local population.

CONCLUSION

Within the confines of this study, it became evident that individuals seeking services at the private dental hospital possess a relatively low level of awareness concerning the available prosthodontic treatment options. Consequently, it is imperative to address this knowledge gap by implementing strategies to educate and inform patients about the diverse range of dental prosthesis alternatives. Enhancing patient awareness in regard to available treatment options available for missing teeth is crucial for fostering informed decision-making and ensuring that individuals are well-informed about the various treatment choices at their disposal. Therefore, there is a pressing need to integrate educational initiatives within the dental healthcare setting to empower patients with comprehensive information about prosthodontic treatments.

DISCLAIMER

None to declare.

CONFLICT OF INTEREST

There is no conflict of interest among the authors.

ETHICAL STATEMENT

The Ethical approval was provided by the Ethical Review Committee at Islamic International Dental College, Islamabad IIDC/IRC/2023/03/13.

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