

Awareness About Prosthesis Among the Patients Visiting Tertiary Health Care Center Seeking Dental Treatment in Nepal

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ABSTRACT

Introduction: Tooth loss can profoundly affect an individual's physical, psychological, and social well-being. It can lead to reduced confidence, compromised speech, altered facial appearance, and restricted food choices. Although dental prostheses can restore function and esthetics, the decision to replace missing teeth is influenced by factors such as knowledge, attitude, socioeconomic conditions, and motivation. Understanding patients' perceptions toward tooth replacement helps clinicians improve prosthesis acceptance and treatment outcomes.

Objective: To assess the awareness, attitude, and practice regarding replacement of missing teeth among patients attending the dental outpatient department (OPD) of Kathmandu Medical College.

Methodology: A cross-sectional observational study was conducted from April to September 2023 among 220 patients aged ≥ 18 years presenting with one or more missing teeth. Convenience sampling was used. Data were collected through a structured questionnaire and analyzed using IBM SPSS Statistics version 21. Descriptive statistics were applied to summarize sociodemographic variables, awareness levels, reasons for non-replacement, and preferences for prosthetic options.

Result: Of the 220 participants, 47.7% were male and 52.3% female; the majority (65.5%) were above 40 years of age. Most participants (69.5%) had been edentulous for less than five years, with dental caries (60.9%) being the primary cause of tooth loss. The main reasons for not replacing missing teeth were lack of knowledge (32.7%), lack of time (30.5%), and financial constraints (24.1%). Awareness of the importance of tooth replacement was reported by 73.2% of respondents, while 50.9% were aware of available treatment modalities. Among these, 65.2% knew about fixed partial dentures (FPD), 19.6% about removable partial dentures (RPD), and 13.4% about implants. Regarding preference, 42.7% favored FPD, 42.3% preferred RPD, and 15% relied on the dentist's recommendation.

Conclusion: Although the majority of participants were aware of the importance of replacing missing teeth, nearly half lacked knowledge about available prosthetic options. Lack of awareness, time, and financial limitations were the main barriers to tooth replacement. Educational and motivational programs are essential to enhance patient understanding and improve the utilization of prosthodontic services.

Keywords: Fixed partial denture; prosthesis awareness; patient motivation; removable partial denture; tooth loss.

Citation

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INTRODUCTION

A person's quality of life can be severely impacted by tooth loss, which is one of the most significant issues that might cause distress. People who experience tooth loss will experience psychological effects such as difficulty accepting tooth loss, low confidence due to speech problems, inability to accept changes in facial shape, and a restriction on food options, to name a few.¹

Replacement of missing teeth is a common concern. A dental prosthesis can be used to replace lost teeth and restore the normal appearance and function of the mouth. Studies show that most patients are more concerned with replacing missing anterior teeth than posterior ones.² Replacing full set of teeth can help promote general and oral health. Unfortunately, many people do not realize that having a missing tooth can affect their health. This is why they must be aware of the various advantages of having a dental prosthesis.^{3,4,5}

Although dental prostheses can restore function and esthetics, the decision to replace missing teeth is influenced by factors such as knowledge, attitude, socioeconomic conditions, and motivation. Understanding patients' perceptions toward tooth replacement helps clinicians improve prosthesis acceptance and treatment outcomes. Therefore, the aim of the present study was to assess the awareness, attitude, and practice regarding replacement of missing teeth among patients attending the dental outpatient department (OPD) of Kathmandu Medical College.

METHODOLOGY

This was a cross-sectional observational study carried out from April 2023 to September 2023. Ethical approval for the study was granted by the Institutional Review Committee (IRC), Kathmandu Medical College Public Limited, Reference Number: 21032023/04. The study was conducted in the Department of Prosthodontics, Kathmandu Medical College by using convenience sampling

technique for the sample collection, and sample size was calculated by taking into consideration the importance of replacement of missing teeth in research conducted by Rathie et al.⁶ 87.5 % of the respondents reported that they were aware of the importance of replacement of missing teeth. Sample size is calculated using the formula: $N = (Z^2 * p * q) / e^2$ Where, $p = 87.5$, $q = (100 - 87.5) = 12.5$, $e = 5\%$ of p ($5 * 87.5 / 100 = 4.37$), $Z = 1.96$ (95% confidence level). Thus, required sample size = (Round off 220).

Patients aged ≥ 18 years who presented to the dental OPD during the study period with one or more missing teeth or seeking replacement/esthetic/occlusal rehabilitation and who could speak Nepali or English and give informed consent were included in this study. But the patients who already had a fixed or removable prosthesis and were currently under prosthesis follow-up, and patients with cognitive impairment, were excluded from this study.

Data were collected using a structured, pretested questionnaire developed after reviewing relevant literature on awareness and attitudes toward tooth replacement.³⁻⁶ The questionnaire consisted of both closed- and open-ended questions covering sociodemographic details, causes of tooth loss, awareness and attitudes toward replacement, and knowledge of different prosthetic modalities.

All the data were inserted into a Microsoft Excel sheet and analyzed using IBM SPSS Statistics for Windows version 29 (IBM Corp., Armonk, N.Y., USA). Descriptive data were presented as mean, standard deviation, frequency, and percentage. Statistical significance was set at $p < 0.05$.

RESULT

The study sample consisted of 220 participants, 105 male (47.7%) and 115 females (52.3%). Most of the study participants were above the age of 40 years (65.5%). The result of this study showed that 24.1% had vocational education, 14.1% went to

primary school, who completed secondary school education were 42.7% and 19.1% had university-level education (Table 1).

When questioned about the period of the edentulousness, the majority of respondents (69.5%) were edentulous for a period of less than five years, and dental caries was the main reason for the extraction of the tooth/teeth, which accounted for 60.9% of the cause behind the missing teeth. When asked about “reason behind not replacing the tooth/teeth till date”, 30.5% of the participants considered lack of time as a major factor for not replacing, whereas 32.7% responded to lack of knowledge, and 24.1 % showed financial problems to be the cause for not replacing. Among the participants, 12.7% found themselves comfortable with the present condition they had. This study showed that half of the participants were self-motivated, and the awareness program only accounts for 17.7% of the replacement of missing tooth/teeth. Similarly, motivation from friends and family members for the replacement of missing tooth/teeth was 6.4% and 25.55% respectively (Table 2).

Regarding the awareness about the importance of replacement, 73.2% of the participants responded that they were aware of the importance, while 18.2% said they were not aware of it and 8.6%

did not have the knowledge about the importance of replacement. The most common reason for the replacement of missing tooth/teeth was function (66.4%), followed by esthetics (28.2%) and speech (4.5%). Only 0.9% of respondents did not want to replace their missing tooth/teeth. More than two-thirds (85%) of the participants showed the intention of replacing teeth after facing difficulties in their daily activities (Table 2).

When asked about the different modalities of replacement, 50.9% of the participants were aware of the modalities, but 49.1% were unaware of them. Among those who were aware of the modalities of replacement 112 (50.9%), 65.18% had known about the FPD, 19.64% had knowledge about RPD, and 13.39% were aware of the implants. Only 1.79% had heard about the Cast Partial Dentures. When the question was asked about the preferences of replacement, 42.7% preferred FPD, 42.3% preferred RPD, and 15.0% didn’t know about their preferences and relied on the dentist for the appropriate replacement. Last question was asked about whether the participants had knowledge about the difference between natural and artificial teeth; 42.3% of participants had knowledge about the difference, but 57.7 % had no idea about it (Table 3).

Table 1: Sociodemographic characteristics of participants (N = 220)

Variables	Category	Frequency (n)	Percent (%)
Sex	Male	105	47.7
	Female	115	52.3
Age (years)	0–20	8	3.6
	21–40	68	30.9
	>40	144	65.5
Level of Education	Vocational	53	24.1
	Primary level	31	14.1
	Secondary level	94	42.7
	University level	42	19.1

Table 2: Awareness and attitudes toward tooth replacement (N= 220)

Variables	Category	Frequency (n)	Percent (%)
1. Period of Edentulousness (years)	0–5	153	69.5
	6–10	47	21.4
	10–15	20	9.1
2. Cause behind Missing Tooth/Teeth	Dental caries	134	60.9
	Periodontal problem	64	29.1
	Trauma	18	8.2
	Congenital missing	4	1.8
3. Reason behind not Replacing till Date	Lack of time	67	30.5
	Lack of knowledge	72	32.7
	Financial problem	53	24.1
	Fine with present condition	28	12.7
4. Factors Motivating Replacement	Friends	14	6.4
	Family	56	25.5
	Awareness program	39	17.7
	Self-motivated	111	50.5
5. Awareness of Importance of Replacement	Yes	161	73.2
	No	40	18.2
	Doesn't know	19	8.6
6. Reasons for Replacement	Esthetics	62	28.2
	Function	146	66.4
	Speech	10	4.5
	Don't need replacement	2	0.9
7. Intention to Replace Teeth After Facing Any Difficulties	Yes	187	85.0
	No	33	15

Table 3: Awareness and preferences regarding tooth replacement modalities (N = 220)

Variables	Category	Frequency (n)	Percent (%)
1. Awareness about Different Modalities of Replacement	Yes	112	50.9
	No	108	49.1
a. Knowledge about Modalities	FPD (Fixed Partial Denture)	73	65.18
	RPD (Removable Partial Denture)	22	19.64
	CPD (Complete Partial Denture)	2	1.79
	Implant	15	13.39
2. Preference of Denture	FPD	94	42.7
	RPD	93	42.3
	I don't know	33	15.0
3. Knowledge about Difference between Natural and Artificial Teeth	Yes	93	42.3
	No	127	57.7

DISCUSSION

The main objective of the present study was to know the awareness about prosthesis among the patients who visited Kathmandu Medical College seeking Dental Treatment. There was a total of 220 participants in the study having various level of education ranging from vocational to university level. The majority of participants (69.5%) were edentulous for less than 5 years of period. In present study the major cause of edentulousness was dental caries (60.9%) which was similar to the findings of Teja et al.⁷ (Male 61%, Female 64.8%) and Thillaigovandan et al.⁸ (52.9%) but findings of Nagarale et al.³ (30.2%), Sekhawat et al.⁹ (32%) were lower to present finding.

Periodontal problems accounted for 29.1% of total tooth/teeth loss which was almost similar to the findings of Thillaigovandan⁸ (27.5%) but more than that reported by Nagarale et al.³ (17.5%), Sekhawat et al.⁹ (14%) and Teja et al.⁷ (Male 14.4%, Female 13.2%). This varies was attributed to the differentiation of person's personal hygiene measure.

Congenital missing of tooth/teeth reported by 1.8% of the participants of study which was similar to the findings of Thillaigovandan et al.⁸ (1%) but other reviewed articles didn't include this parameter in their questionnaire. Trauma related teeth loss was found in 8.2% of participants in present study which was more than that reported by Nagarale et al.³ (4.9%) but less to the findings of Thillaigovandan et al.⁸ (18.6%) and Sekhawat et al.⁹ (16%).

The reason for not replacing the missing tooth/teeth among the participants in the study varied. Lack of time was one of the reasons which accounted for 30.5%, which was more than that reported by the reviewed articles, Jayasinghe et al.⁵ (3%), Nagarale et al.³ (9.9%), Yusof et al.¹ (9%), Shigli et al.¹⁰ (7.1%), Sekhawat et al.⁹ (20%), Dhopte et al.¹¹ (20%) and Teja et al.⁷ (Male 15.8%, Female 12.8%). Lack of knowledge regarding the need of

replacement accounted 32.7% in the present study which was similar to the finding of Sekhawat et al.⁹ study (36%). Reddy et al.¹² reported this value to be 57.36% and varied among other studies Rathie et al.⁹ and is considered to be a serious event in the life of a person, requiring significant psychological readjustment. Objective: Evaluate the prosthetic status and attitude of the patients towards replacement of the teeth among the patients visiting dental department, Noble Medical College and Teaching Hospital (NMCTH (91.85), Teja et al.¹ (7%), Nagarale et al.³ (9.8%), Yosuf et al.¹ (17%) and Shigli et al.¹⁰ (3.8%).

In study conducted by Rathie et al.⁶ 80% of the participants considered the financial problem being one of the major factors for not replacing the missing teeth. In present study it only accounted for 24.1% which was similar to the finding of Sekhawat et al.⁹ (24%) but more than the findings of Jayasinghe et al.⁵ (16%), Yosuf et al.¹ (15%), Shigli et al.¹⁰ (19.7%), Reddy et al.¹² (18.27%), and Teja et al.⁷ (Male 8.9%, Female 6.3%). Nagarale et al.³ and Dhopte et al.¹¹ studies found financial problem to be 56.2% and 36.7% respectively.

About 12% of the respondents found themselves fine without having one or multiple teeth missing, this value was less in the study of Rathie et al.⁶ (2%) and Shigli et al.¹⁰ (6%). Some reviewed literature had the more percentage of respondent who found themselves fine with missing teeth Jayasinghe et al.⁵ (67.32%), Yosuf et al.¹ (35%), Sekhawat et al.⁹ (20%), Reddy et al.¹² (24.37%) and Dhopte et al.¹¹ (43.3%).

Regarding awareness of the importance of replacement, 73.2% participants were aware of importance which was similar to the findings of Teja et al.⁷ (70%) but less than the findings of Yosuf et al.¹ (79%), Rathie et al.⁶ (87.5%), Reddy et al.¹² (95.93%) and Thillaigovandan et al.⁸ (77.5%). Nagarale et al.³ found it in 40.1% of the participants. Those who were not aware about the importance of replacement accounted for 8.6% which was similar

to the findings of Yosuf et al.¹ (8%) but less than that of Nagarale et al.³ (15.5%).

Self-motivation was one of the important factors for the replacement of missing tooth/teeth. In present study there were 50.5% of participants who were self-motivated for the replacement, but most of the reviewed literature didn't consider this parameter in their study. Motivation from friends and family accounted for 31.9% in present study but it varied in the reviewed literature, Nagarale et al.³ (17.9%), Yosuf et al.¹ (52%) and Reddy et al.¹² (85.66%).

17.7% of total participants were motivated from awareness program from various sources for the replacement but this value was 6.8% in Nagarale et al.³ study and 3.43 % in case of the Reddy et al.¹² Yosuf et al.¹ found 52% of the participants were motivated from the awareness program for replacement.

Among the various reasons for replacement of the missing tooth/teeth, function accounted for 66.4% and the finding of present study was more than the reviewed literature, Rath et al.⁶ (20.5%), Shetty et al.⁴ (43.7%), Nagarale et al.³ (59.3%), Shigli et al.¹⁰ (56.2%), Thillaigovandan et al.⁸ (42.57%), Shekhawat et al.⁹ (13%) and Dhopte et al.¹¹ (32%). Esthetic was considered as a main reason for replacement by the participants of Rath et al.⁶ (64.6%) and Shetty et al.⁴ (55.4%) but in our study it was around (28.2%) which was almost similar to the findings of Nagarale et al.³ (26.5%), Thillaigivandan et al.⁸ (36.65) and Dhopte et al.¹¹ (32%). The study done by Shigli et al.¹⁰ (8%) and Shekhawat et al.⁹ (8%) reported esthetic as a main concern for replacement by 8% of participants.

Importance to the speech as a need of replacement was given by 4.5% of the total participants in present study which was more than the findings of Shetty et al.⁴ (0.9%), Shigli et al.¹⁰ (0.5%) and Thillaigovandan et al.⁸ (1.98%). This parameter was given importance by 10.5% respondents of Nagarale et al.³, 14% in Shekhawat et al.⁹, and 12% in Dhopte et al.¹¹ studies. 0.9% of participants of

present study did not need replacement and this number was 14.8% in Rath et al.⁶ study.

When asked about the intention of replacement after facing any difficulties, 85% of participants in present studies said that they will replace only if they have any difficulties due to missing teeth and this value was 70.7% in a study conducted by Rath et al.⁶

Awareness about the different modalities of replacement among the participants was also included in this study and 50.9% of participants were aware about the different modalities of replacement which was more than the findings of Hakam et al.² (17.8%). Among those 112(50.9%), who knew about the different modalities, 65.18 % had knowledge about the fixed partial denture which was almost similar to the findings of Hussain et al.¹³ endodontic technical errors, and periapical status. CBCT images of 101 patients, including total of 212 obturated premolars (256 canals (60.6%) and Teja et al.⁷ (Male 66.4%, Female 63.6%). In most of the reviewed article, knowledge about modalities found to be less than that of our studies, Jayasinghe et al.⁵ (25.2%), Hakam et al.² (4.4%) Yosuf et al.¹ (30%) and Reddy et al.¹² (36.40). Only 19.64% of participants had knowledge about the removable partial denture in present study which was almost similar to the findings of Hakam et al.² (15.6%) but far less to the values of other studies Jayasinghe et al.⁵ (77.3%), Yosuf et al.¹ (44%), Reddy et al.¹² (42.83%), Hussain et al.¹³ endodontic technical errors, and periapical status. CBCT images of 101 patients, including total of 212 obturated premolars (256 canals (54.2%) and Teja et al.⁷ (Male 71.9%, Female 74.2%). Implant, being one of the most advertise treatment modalities in present time, only 13.39% of our participants had knowledge about it, which was similar to the findings of Reddy et al.¹² (10.71%) and more than the findings of Hakam et al.² (1%) and Hussain et al.¹³ endodontic technical errors, and periapical status. CBCT images of 101 patients, including total of 212 obturated premolars (256 canals (5.5%). In Jayasinghe et al.⁵ study, 13.39

% of the participants had knowledge of implant, this value was 49% for the Yosuf et al.¹ and 22 % for Thillaigovinda et al.⁸ studies. In present study only 1.79% of participants had knowledge about cast partial denture which was less than the findings of Hussein et al.¹³ endodontic technical errors, and periapical status. CBCT images of 101 patients, including total of 212 obturated premolars (256 canals (22.8%).

Regarding the preference of the denture, 42.7% of the participants in present study preferred fixed partial denture over other choices and in review literature it varied from Jayasinghe et al.⁵ (16.9%) to Rathi et al.⁶ (76%). Similarly RPD was preferred by 42.3 % of the participants which was more than the findings of Rathi et al.⁶ (8%), Jayasinghe et al.⁵ (27.5%), Shetty et al.⁴ (33.4%) and Teja et al.⁷ (Male 28.9%, Female 35.6%) but less than the findings of Reddy et al.¹² (50.25%). In present study 15% of the participants did not have the preference of denture and they relied on the dentist counselling while selecting the appropriate replacement options.

When the participants were asked about the differences between natural teeth and the artificial replacement, 42.3% knew about the differences while remaining thought that both were the same. Knowledge of the differences varied among the participants as difficulty in chewing, fracture potential, loosening over the period of time, and repeated replacement of the prosthesis, color matching and strength of artificial in comparison to the natural teeth. This finding was almost similar to the findings of Nagarale et al.³ (43.2%) and Yosuf et al.¹ (45%) but lesser than that of Dhopte et al.¹¹ (59%). Majority of the participants (57.7%) didn't

have knowledge about the differences which was more than that reported by Nagarale et al.³ (18.5%), Shigli et al.¹⁰ (32.6%) and Dhopte et al.¹¹ (25.75). In study done by Yosuf et al.¹, (66%) of the participants had no knowledge about the differences between natural and artificial teeth.

The differences between the findings of present study and the literature reviewed mainly depended on the various factors like study setting, education and financial status of the participants, awareness programs conducted through the various means and the history of previous treatment and the availability of the treatment options in the health setting.

This study was limited by its cross-sectional design and reliance on self-reported responses, which may be subject to recall or social desirability bias. In addition, as the study was conducted in a single tertiary hospital setting, the findings cannot be generalized to the wider population.

CONCLUSION

Most participants were aware of the importance of tooth replacement but had not replaced missing teeth due to lack of knowledge, time, and financial limitations. Functional need was the main motivator for replacement, with limited awareness of available prosthetic options. Clinically, targeted oral health education and counseling are essential to improve awareness, promote timely replacement, and enhance overall oral function and quality of life.



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