

Satisfaction towards Removable Dentures among Patients visiting Nobel Medical College and Teaching Hospital

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ABSTRACT

Introduction

The success of a removable prosthodontics hinges upon both the dentists and patient's factors like retention, support, speech, mastication. The finish of the prosthesis which includes finalizing the shape, texture and polishing of the dentures also play vital role in the clinical outcomes. Besides, there are other important aspects that affect the success of dentures. The aim of the study is to determine factors affecting the patient satisfaction undergoing removable prosthodontic rehabilitation.

Methods

This is a cross-sectional descriptive study conducted among 120 patients undergone removable prosthodontic rehabilitation in Nobel Medical College and Teaching Hospital in 1 year assessed from August to November 2025. Demographic details of participants, patient satisfaction score, prosthodontic history and patient behaviors were studied.

Results

Majority of study participants were moderately satisfied with the retention, esthetics, speech, mastication, finish of the denture, and overall satisfaction for maxillary and mandibular dentures. The gender, marital and educational status were significantly associated with esthetics of the denture; $p = 0.014^*$, $p = 0.034^*$, $p = 0.05^*$ respectively. Smoking habits was significantly associated with retention and duration of wear of prosthesis with the aesthetics of the denture. Total number of removable prostheses used by the patient and their behavior were significantly associated with masticatory performance of denture; $p = 0.015^*$ and $p = 0.034^*$ respectively.

Conclusion

In this study, majority of patients were found to be moderately satisfied with the retention, esthetics, mastication, finish and overall satisfaction for denture treatment while majority of them were poorly satisfied with the speech associated to the dentures.

Keywords

Denture; prosthodontic; patient satisfaction; rehabilitation

INTRODUCTION

A beautiful smile is a valuable asset of a person, window to society and an important factor for a healthy life enhancing self-personality.¹ Loss of teeth is an emotional experience that effects self-esteem, social interaction and mental health. It reduces the quality of life and affect physically, socially and emotionally.^{2,3}

Loss of teeth can be managed by three different approaches by a dentist which are removable dentures, fixed dentures and implant prosthesis. The principle functions of removable dentures are to enhance masticatory efficiency, phonetic clearance and esthetic appearance of the patient. The advantages of removable dentures against other modalities are their superior esthetics and function, economical, easy to fabricate, comfortable, non-invasive, reduced risk of complications and improved facial appearance.⁴

Successful dentures depend upon a number of factors primarily being retention, stability and support. Besides these, the quality of residual ridges and abutments, impression techniques, surveying and designing, jaw relations, facebow transfer, teeth arrangement, finishing and polishing, occlusal adjustments and other prosthesis fabricating process are technique sensitive and tedious job to a treating dentist.⁵ The successful delivery of the prosthesis depends upon three broad factors which are judged by the patients. These are aesthetic, masticatory and phonetic functions of prosthesis. Besides these, other factors include quality of residual ridges, patient's psychology, educational status, financial condition, oral hygiene habits, prior experience, expectations and motivations towards the treatment.^{6,7}

Hence, the factors affecting the denture satisfaction are to be considered and studied so that a quality treatment is given to a patient.

METHODS

The present study is a cross-sectional questionnaire descriptive one conducted among 120 patients visiting Nobel Medical College and Teaching Hospital for the replacement of missing teeth with removable dentures during the fiscal year of 2081/82 which includes both partial and complete

dentures. The study patients were followed up from August 2025 to November 2025 to access the level of satisfaction from their dentures. The ethical clearance was obtained from institutional review committee of Nobel medical college and teaching hospital on August 20, 2025 (IRC no. 49/2025)

The study was conducted among patients between 21-60 years of age wearing removable dentures. The patients were approached physically and via telecommunications and social media who were unable to be accessed during study period. Informed consent was taken before the interview. All the patients within 1 year of wearing removable dentures were interviewed and accessed for their satisfaction level of treatment.

Questionnaire for the study consists of four parts. First part consists of demographic details of study participants. Second part consists of prosthodontic history of patients regarding type and duration of wear of prosthesis, number of removal prosthesis used till now, period of edentulousness before first prosthesis, denture given by the type of dentists, number of times the denture had to be repaired and patient behavior assessment using M.M. House mental classification.⁸ Third part consists of questions regarding patient satisfaction with removable prosthesis. Patient Overall patient's response was measured using 3-point satisfaction which are graded as 1, 2 and 3 i.e., poorly satisfied, moderately satisfied and highly satisfied respectively. More the score more is the patient satisfaction.

Demographic details of study participants, patient satisfaction score, prosthodontic history and patient behaviors were determined using descriptive analysis. Factors affecting the patient satisfaction was measured using Chi-Square test. Level of significance was kept at 5%.

RESULTS

In the study majority of participants belonged to 51-60 years of age group which constitute 43.3% of the total study population. Female study participants (55.83%) were more than male participants. Among all study participants, most participants (56.6%) were uneducated while 30% were graduated

and remaining were involved in different educational fields. Study participants with private occupation (55.8%) were more in number than government jobs. Married study

participants (57.5%) were more than others. Smokers (52.5%) and non-drinker (55%) were more than non-smokers and drinkers [Table 1].

Table 1. Demographic details of study participants (n=120)

Demographic variables		n(%)
Age(years)	21-30	11(9.1)
	31-40	16(13.3)
	41-50	41(34.1)
	51-60	52(43.3)
	total	120(100)
Gender	Male	53(44.16)
	Female	67(55.83)
	Total	120(100)
Education	Uneducated	68(56.6)
	Schooling	6(5)
	Graduate	36(30)
	Post graduate	9(7.5)
	PhD	1(0.83)
	Total	120(100)
Occupation	Unemployed	26(21.6)
	Private	67(55.8)
	Government	27(22.5)
	Total	120(100)
Marital status	Married	69(57.5)
	Unmarried	24(20)
	Widow	17(14.2)
	Widower	10(8.3)
	Total	120(100)
Smoking habits	Smokers	63(52.5)
	Non smokers	57(47.5)
	Total	120(100)
Drinking habits	Drinkers	54(45)
	Non drinkers	66(55)
Total		120(100)

Among all study participants, 85.8% study participants possess removable partial denture. Duration of wearing prosthesis of most of study participants (32.5%) was 3-6 months. Majority of study participants, 80.8% had used 1-2 prosthesis till the time of interview. Maximum time of edentulousness before first prosthesis for maximum study participants (52.5%) was 1-5 months.

Most of the dentures (89.17%) were given by consultant prosthodontist. Majority of patients (84.17%) had given their dentures for repair for maximum of 0-2 times. Among all study participants, about 65.83% of them were having philosophical behavior [Table 2].

Table 2. Prosthodontic history and patient behavior of study participants (n=120)

Demographic variables		n(%)
Types of prosthesis	Removable complete denture	17(14.2)
	Removable partial denture	103(85.8)
	Total	120(100)
Duration of wear of prosthesis	0-3 months	23(19.2)
	3-6 months	39(32.5)
	6-9 months	31(25.8)
	9-12 months	27(22.5)
	Total	120(100)
No. of removable prosthesis used till now	1-2	97(80.8)
	3-4	19(15.8)
	More than 4	4(3.3)
	Total	120(100)
Maximum period of edentulousness before first prosthesis	1-5 months	63(52.5)
	5-10 months	25(20.8)
	11-15 months	23(19.2)
	16-20 months	9(7.5)
	Total	120(100)
Denture given by type of dentists	BDS	13(10.8)
	MDS	107(89.17)
	Total	120(100)
How many times the denture had been repaired	0-2 times	101(84.17)
	3-4 times	18(15)
	More than 4 times	1(0.83)
	Total	120(100)
Patient behavior	Philosophical	79(65.83)
	Exacting	16(13.3)
	Hysterical	11(9.17)
	Indifferent	14(11.67)
	Total	120(100)

Among all study participants, majority of study participants were moderately satisfied with the retention (53.3%), esthetics (49.17%), speech (55.83%), mastication (63.3%), finish of the denture (60%) and overall satisfaction for maxillary and mandibular dentures (63.3%) [Table 3].

Table 3. Patient satisfaction among patients undergoing removable prosthodontic rehabilitation (n=120)

Satisfaction parameters	Poorly satisfied n(%)	Moderately satisfied n(%)	Highly satisfied n(%)	Total n(%)
Retention	23(19.17)	64(53.3)	33(27.5)	120(100)
Aesthetics	17(14.17)	59(49.17)	44(36.67)	120(100)
Speech	27(22.5)	67(55.83)	26(21.67)	120(100)
Mastication	14(11.67)	76(63.3)	30(25)	120(100)
Finish of the denture	21(17.5)	72(60)	27(22.5)	120(100)
Overall satisfaction for maxillary and mandibular dentures	19(15.83)	76(63.3)	25(20.83)	120(100)
Total	121	414	185	720(100)

On applying Chi-Square test, various demographic factors that significantly affects the parameters of patient satisfaction were accessed. The gender, marital and educational status of the patients were significantly associated with esthetics of the denture $p = 0.01^*$, $p = 0.03^*$, $p = 0.05^*$ respectively. Smoking habits was significantly associated with retention ($p = 0.04^*$) and

duration of wear of prosthesis with the aesthetics of the denture ($p = 0.04^*$). Total number of removable prostheses used by the patient and their behavior were significantly associated with masticatory efficiency of denture; $p = 0.01^*$ and $p = 0.03^*$ respectively [Table 4]

Table 4. Factors affecting patient satisfaction by using Chi-Square test

	Patient satisfaction											
	Retention		Aesthetics		Speech		Mastication		Denture finish		Overall satisfaction	
	X ²	p	X ²	p	X ²	P	X ²	p	X ²	p	X ²	p
Age	9.94	0.13	5.66	0.46	4.04	0.67	2.00	0.92	4.20	0.65	5.59	0.47
Gender	0.49	0.78	8.58	0.01*	1.26	0.53	0.22	0.89	1.65	0.44	1.48	0.48
Socioeconomic class	4.45	0.34	4.21	0.38	5.22	0.27	0.22	0.89	1.65	0.44	1.48	0.48
Marital status	6.11	0.41	13.61	0.03*	2.83	0.83	4.80	0.57	8.32	0.22	4.54	0.60
Educational status	7.64	0.47	15.28	0.05*	6.32	0.61	4.89	0.77	4.89	0.77	9.44	0.31
Smoking habits	6.25	0.04*	1.28	0.53	5.08	0.08	0.59	0.74	1.28	0.53	2.33	0.31
Drinking habits	0.93	0.63	2.54	0.28	1.14	0.57	0.94	0.62	0.16	0.93	3.04	0.29
Types of prosthesis	2.37	0.31	0.92	0.63	0.19	0.91	4.45	0.11	4.76	0.09	3.29	0.19
Duration of wear of prosthesis	7.27	0.29	12.75	0.04*	8.16	0.23	3.64	0.73	4.47	0.61	9.58	0.14
No. of removal prosthesis used	4.00	0.41	5.97	0.20	5.27	0.26	12.37	0.02*	6.85	0.14	4.52	0.34
Denture given by the type of dentist	1.80	0.41	2.18	0.34	2.45	0.29	1.86	0.39	1.25	0.54	1.77	0.41
No. of times denture repaired	6.19	0.18	1.19	0.75	3.67	0.45	4.38	0.36	5.35	0.25	6.39	0.17
Patient behavior	4.10	0.66	5.72	0.46	6.02	0.42	13.62	0.03*	2.14	0.91	7.72	0.26

DISCUSSION

Denture rehabilitation is one of the oldest, common and most cost-effective methods of treatment for those people who have partially or completely lost teeth due to various reasons and its impact on people's lives can be significant. Edentulous people who lack few or all teeth in the mouth may avoid participation in social activities owing to embarrassment to speak, smile or eat which increasingly leads them towards isolation. On the other hand, dentures could improve the oral appearance of edentulous people resulting in improved social interaction which enhances the self-esteem and thereby contributes to psychological well-being⁹

In a study by Al Quran et al. about 16% of participants consistently and persistently reported problems with their dentures.¹⁰ The patients usually visit back with the complaints of poor retention and instability in their existing dentures, intolerance of the prostheses, poor mastication with food accumulating under the denture, unsatisfactory appearance, retching, pain or discomfort, and speech alteration. When patients experience such problems, they often return to their clinicians for further evaluations and readjustments such

as relining to mitigate poor retention spot or selective grinding to remedy pain and poor mastication and remakes.^{11,12,13} These visits are laborious, costly, and inconvenient to both the patients and the clinicians and at times result in failure of the treatment thereby diminishing oral health quality of life.¹⁴

This study aims to evaluate and identify the most common factors that play role in the patient's satisfaction in their removable dentures. In total 120 patients who received removable dentures are interviewed and the satisfaction parameters are accessed and compared. The majority of patients were female between the age range of 51-61 years who received the denture treatment. This was in accordance to the study done by Reddy et al where 53.6% participants were female between the middle age group (41-60 years).¹⁵ The reason for the early tooth loss and seeking denture replacement in our population could be due to high illiteracy rate, poor socioeconomic status, smoking, chewing tobacco, pan and alcohol consumptions leading to dental caries, periodontal disease or both.^{16,17,18}

In the present study, most of the study participants were having removable partial

dentures and were rehabilitated within 5 months of edentulousness. Duration of wear of prosthesis for majority of study participants was 3–6 months and majority of patients have philosophical attitude. Similar results were seen in study by Sanketh, et al. where most of the patient visiting dental clinic for dentures were philosophic.¹⁹ However, majority of patients presented with exacting behavior in the study conducted by Kavita et al. among Indian population.

Van Waas stated that patients who presented positive attitude during the treatment procedures often resulted in satisfying dentures and Jonkman et al. stated that the attitude toward wearing denture was an important tool for assessing the satisfaction with complete denture wearing.^{20,21}

In the present study conducted among patients visiting Nobel medical college and teaching hospital, majority of patients presented with moderate satisfaction towards retention, aesthetics, mastication, finish and overall satisfaction of dentures. Among these parameters, patients were least satisfied with the speech due to removable prosthesis. Similarly, in the study conducted by Sharma et al, educated and younger patients gave low grade satisfaction points to the esthetics and speech performance of removable partial dentures.²² This may be due to the facts that younger individuals often prioritize the superior aesthetics, comfort, and functionality offered by fixed solutions or dental implants, impacting their acceptance of removable options.^{23,24} In our study, age, socioeconomic status, drinking habits, type of denture prosthesis, treating doctors and number of denture repair times had no significant association with the overall satisfaction parameter of denture. However, educational status, gender and marital status were significantly associated to the esthetics of the dentures. This may be due to the facts that people have become more aware and conscious about their health especially when it comes to developing one's personality and self confidence in their day to day social life. Smoking, chewing tobacco, pan etc. have negative effects on the oral health status especially saliva which has a major role in the retention of dentures. Hence, smoking habit has shown significant association with the satisfaction parameter i.e. retention. In this study, number of prosthesis used by the

patient has significant association with the masticatory performance of the dentures which may be due to early adaptive response of the musculature of the denture wearers as concluded by Shala et al. in their study.²⁵

Limitations of the study include the non-representative sample, hence the results cannot be generalized, and further multicentric studies with larger sample size could give the conclusion more generalizable. Since, the complete and partial dentures studied here are removable ones, both the type of dentures should be fulfilling the satisfaction factors for successful clinical outcomes. However, complete and partial dentures are two different modalities of treatment for treating complete and partial edentulousness, their successful clinical outcomes may also have different variables which need to be studied and compared individually to achieve more conclusive results.

CONCLUSION

In this study majority of patients were found to be moderately satisfied with the retention, esthetics, mastication, finish and overall satisfaction for denture treatment provided in Nobel medical college and teaching hospital. However, majority of patients were poorly satisfied with the speech associated to the dentures and highly satisfied with the esthetics. The study revealed that age, socioeconomic status, drinking habits, type of denture prosthesis, treating doctors and number of denture repair times had no significant association with the overall satisfaction parameter of denture. However, educational status, gender and marital status were significantly associated to the esthetics of the dentures and total number of denture used to the masticatory performance.

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CONFLICT OF INTEREST

The author(s) declare that they do not have any conflicts of interest with respect to the research, authorship, and/or publication of this article.

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