

Factors affecting patient satisfaction among patients undergone removable prosthodontic rehabilitation

Kumari Kavita¹, Md Asad Iqbal², Rohit Singh³, Supriya Singh², Jazib Nazeer⁴, Revati Singh⁵

¹Department of Dentistry, NMCH, Patna Dental College and Hospital, ²Oral Medicine and Radiology, ³Prosthodontics Crown Bridge and Implantology, ⁴Oral Pathology and Microbiology, Patna Dental College and Hospital, Patna, Bihar, ⁵Department of Dentistry, Patna Medical College and Hospital, Patna, Bihar, India

ABSTRACT

Background: Patient's satisfaction is of utmost importance to the dental professionals among all those who have undergone prosthodontic rehabilitation. The success of every dental prosthesis lies in the patient wearing those removable prostheses thereby restoring masticatory function and Phonatics, hence the aim of the present study is to determine various factors affecting the patient satisfaction among patients undergone removable Prosthodontic rehabilitation. **Materials and Methods:** The present study is a cross-sectional questionnaire descriptive study. The study is conducted among 183 patients undergone removable Prosthodontic rehabilitation and visiting private dental clinics for follow-up. The study was conducted in October to December 2019. The study was conducted among patients age between 21 and 60 years of age wearing removable prosthesis. **Results:** Among all study participants, majority of study participants were moderately satisfied with the Retention {79 (43.16%)}, Esthetics {87 (47.54%)}, Mastication {68 (37.15%)}, Finish of the denture {89 (48.63%)}, and Overall satisfaction for maxillary and mandibular dentures {93 (50.81%)}. Patient's behavior was significantly associated with overall patient satisfaction ($P = 0.00^*$). **Conclusion:** Factors affecting any parameter of patient satisfaction was age, Gender, Smoking habits, duration of wearing prosthesis, no. of removal prosthesis used, number of times denture was repaired, patient behavior was significantly associated with overall patient satisfaction.

Keywords: Denture, rehabilitation, patient satisfaction, prosthodontic

Introduction

Rehabilitation in the form of removable prosthesis is mainly concerned with replacing the teeth and soft tissues with a non-permanent corrective measure which are removable. These are usually called prosthesis, and might replace a full arch of teeth and are known as complete dentures, or partially replaced edentulous areas classified as partial dentures.^[1]

Address for correspondence: Dr. Md Asad Iqbal, Lecturer, Department of Oral Medicine and Radiology, Patna Dental College and Hospital, Patna, Bihar, India. E-mail: md.asadiqbal@gmail.com

Received: 19-01-2020

Revised: 12-03-2020

Accepted: 26-03-2020

Published: 30-07-2020

Patient's satisfaction and improvement of oral health is the final aim throughout rehabilitation, it's thought-about is; significant patient satisfaction and an integral part of patient's well-being.^[2] Poor oral hygiene is taken into account because this is the most characteristic issue that initiates caries and periodontic diseases that eventually results in tooth loss.^[3] Tooth loss can lead the patient socially disadvantaged as this was reported by Davis, *et al.* in 2000,^[4] in his study the results showed that most of the subjects who were treated prosthodontically were affected with emotion distress.^[5] Improving patient esthetics and eliminating issues connected to mastication and speech ability associated with tooth loss is the foremost concern of any dental practitioner.^[1]

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Kavita K, Iqbal MA, Singh R, Singh S, Nazeer J, Singh R. Factors affecting patient satisfaction among patients undergone removable prosthodontic rehabilitation. J Family Med Prim Care 2020;9:3544-8.

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_120_20

The lost tooth might be replaced by varied sorts of removable choices reckoning on the condition of patient oral tissues, abutment tooth that support the prosthesis, bone density and patient fiscal condition, based on these factors acceptable levels of prosthesis can be delivered to the needy.^[6,7]

Advancements in corrective fabrication and techniques are improved over the years, but very little attention has been paid towards the psychological impact on the patient who received these prostheses. Psychological factors could play a significant role, and conjointly offer valuable information on the prediction of satisfactory outcome of prosthodontic treatment. Many different factors like improved chewing efficiency and improved phonatics conjointly contribute to the final word of success to the treatment.^[8]

In addition, rehabilitation of the masticatory system, the foremost fundamental issue for the success of replacement or denture treatment is patient satisfaction that is thought to be one in all the foremost troublesome tasks for the dental professional to attain.^[9]

Various studies,^[5,10,11] in the past were done to explore certain factors related to patient satisfaction seeking removable rehabilitation in numerous countries with relatively less number of studies conducted in Asian countries specially India wherever level of satisfaction from removable prosthesis was incredibly low.^[12] Hence, the aim of the current study is to see varied factors affecting the patient satisfaction among the patients undergone removable dentistry rehabilitation.

Materials and Methods

The present study is a cross-sectional questionnaire descriptive study. The study was conducted among 183 patients undergone removable Prosthodontic rehabilitation and visiting private dental clinics for follow-up. The study was conducted in October to December 2019. The ethical clearance was obtained from the institutional ethical committee on 18/09/2019.

The study was conducted among patients age between 21 and 60 years of age wearing removable prosthesis. Informed consent was obtained from the patients before the interview.

In total 30 clinics were selected randomly from the city of Patna and permission from the owner of the clinic was availed and patient appointment chart was obtained to determine the day of appointment of patient follow-up with removable denture. Those patients with minimum of 6 months of denture wear were included in the study. The study was continued for 3 months. A total of 183 patients were interviewed.

A pilot survey was conducted, before the main survey on some of the total study participants to test the validity and reliability of questionnaire. Internal consistency and reliability of questionnaires was measured by applying Cronbach's-Alpha (α)

and test-retest. The value obtained was $\alpha = 0.81$, Kappa (k) = 0.73 Weighted Kappa (k_w) = 0.78. Those questions with less validity and reliability were removed.

Tools and technique of the study

Questionnaire for the study consists of 4 parts. First part consists of demographic details of study participants. Second part consists of Prosthodontic history consists of questions regarding type and duration of wear of prosthesis, no. of removal prosthesis used till now, period of edentulousness before first prosthesis, denture given by type of dentists, times the denture had been repaired, during survey behavior of patient was classified using M.M. House mental classification.^[13] Third part consists of questions regarding patient satisfaction with removable prosthesis. Patient Satisfaction was assessed by using parameters like (i) Retention, (ii) aesthetics, (iii) speech, (iv) mastication, (v) finish of the denture, and (vi) overall satisfaction for maxillary and mandibular dentures. Overall Patients response was measured using 3 point satisfaction. 1 poorly satisfied, 2 moderately satisfied, 3 highly satisfied. More the score more is the patient satisfaction.

Statistical analysis

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

Results

Table 1 shows that majority of study participants {75 (41%)} belonged to 51–60 years of age group. Female study participants {97 (53.01%)} were more male participants. Among all study participants, about 56 (30.60%) of patients had completed their schooling. Study participants with private occupation {74 (40.43%)} were more in number than government jobs. Married study participants {118 (64.48%)} were more than others. Smokers {94 (51.36%)} and non-drinker {104 (56.84%)} were more than non-smokers and drinkers.

Table 2 shows that among all study participants, 103 (43.72%) study participants possess removable partial denture. Duration of wearing prosthesis of most of study participants {85 (46.33%)} was 6–12 months. Majority of study participants {131 (71.58%)} had used 1–2 prosthesis till the time of interview. Maximum time of edentulousness before first prosthesis for maximum study participants {116 (63.38%)} was 1–5 months. Most of the dentures {77 (42.07%)} were given by general dental practitioners. Majority of patients {87 (47.54%)} had given their dentures for repair for maximum of 0–2 times. Among all study participants {(78 (42.62%))} most of them were having exacting behaviour.

Among all study participants, majority of study participants were moderately satisfied with the retention {79 (43.16%)},

Table 1: Demographic details of study participants (n=183)

Demographic variables		n (%)
Age (years)	21-30	17 (9.28)
	31-40	22 (12.02)
	41-50	69 (37.70)
	51-60	75 (41.00)
	Total	183 (100)
Gender	Male	86 (46.99)
	Female	97 (53.01)
	Total	183 (100)
Education	Uneducated	16 (8.74)
	Schooling	56 (30.60)
	Graduate	50 (27.32)
	Post-graduate	41 (22.40)
	PhD.	20 (10.94)
Total	183 (100)	
Occupation	Unemployed	45 (24.59)
	Private	74 (40.43)
	Government	64 (34.98)
	Total	183 (100)
Marital status	Married	118 (64.48)
	Unmarried	5 (2.7)
	Widow	21 (11.47)
	Widower	39 (21.31)
	Total	183 (100)
Smoking habits	Smokers	94 (51.36)
	Non-smokers	89 (48.64)
	Total	183 (100)
Drinking habits	Drinker	79 (43.16)
	Non-drinker	104 (56.84)
	Total	183 (100)

esthetics {87 (47.54%)}, mastication {68 (37.15%)}, finish of the denture {89 (48.63%)} and overall satisfaction for maxillary and mandibular dentures {93 (50.81%)}. Most of the study participants were poorly satisfied with the speech {79 (43.16%)} due to removable prosthesis[Table 3].

On applying Chi-Square test, it was determined that factors affecting various parameters of patient satisfaction was age significantly associated with mastication ($P = 0.00^*$) and overall satisfaction ($P = 0.05^*$). Gender was significantly associated with retention ($P = 0.02^*$) and speech due to removable denture ($P = 0.00^*$). Smoking habits with denture finish ($P = 0.05^*$). Duration of wear of prosthesis was significantly associated with retention ($P = 0.05^*$). No. of removal prosthesis used was significantly associated with aesthetics of denture ($P = 0.05^*$). Number of times denture was repaired was significantly associated with retention of denture (0.05^*). Patient behavior was significantly associated with overall patient satisfaction ($P = 0.00^*$)[Table 4].

Discussion

The present study was conducted among patients undergone removable prosthodontic rehabilitation with age range of

Table 2: Prosthodontic history and patient behaviour of study participants (n=183)

Demographic variables		n (%)
Type of Prosthesis	Removable complete denture	80 (56.28)
	Removable partial denture	103 (43.72)
	Total	183 (100)
Duration of wear of prosthesis	6-12 months	85 (46.33)
	13-20 months	47 (25.68)
	21-30 months	28 (15.30)
	More than 30 months	23 (12.69)
Total	183 (100)	
No. of removal prosthesis used till now	1-2	131 (71.58)
	3-4	47 (25.68)
	More than 4	05 (2.74)
Total	183 (100)	
Maximum Period of edentulousness before first prosthesis	1-5 months	116 (63.38)
	5-10 months	35 (19.12)
	11-15 months	20 (10.92)
	16-20 months	12 (6.58)
Total	183 (100)	
Denture given by type of dentists	BDS	77 (42.07)
	MDS	65 (35.51)
	Dental quacks	41 (22.42)
	Total	183 (100)
How many times the denture had been repaired	0-2 times	87 (47.54)
	3-4 times	84 (45.88)
	More than 4 times	12 (6.58)
	Total	183 (100)
Patient behaviour	Philosophical	38 (20.76)
	Exacting	78 (42.62)
	Hysterical	47 (25.68)
	Indifferent	20 (10.92)
	Total	183 (100)

30–60 years. Most of the study participants were females belonged to age group of 51–60 years. With respect to schooling most of the study participants had completed their schooling. In a study conducted by Silva, *et al.*^[11] it was reported that ages of the patients ranged from 59 to 87 years, with an average of 68.8 years and females study participants were more than males. In this study most of the study participants had not completed their elementary schools. In study by Bhatt, *et al.*^[8] males were more than females which is contrary to present study. While in the study by Ahmed, *et al.*^[5] male study participants were more than females. In this study age range was from 18 to 87 years. In a study by Sanketh, *et al.*^[14] majority of study participants were professional/PG and above.

In the present study majority of the patients had private jobs as compared with study by Sanketh, *et al.*^[14] in which majority of study participants were unemployed.

In the present study, most of the study participants were having removable partial denture. Duration of wear of Prosthesis for majority of study participants was 6–12 months. And majority

Table 3: Patient satisfaction among patients undergoing removable prosthodontic rehabilitation. (n=183)

Satisfaction parameters	Poorly satisfied	Moderately satisfied	Highly satisfied	Total
	n (%)	n (%)	n (%)	n (%)
Retention	55 (30.05)	79 (43.16)	49 (26.79)	183 (100)
Aesthetics	58 (31.69)	87 (47.54)	38 (20.77)	183 (100)
Speech	79 (43.16)	74 (40.43)	30 (16.41)	183 (100)
Mastication	65 (35.51)	68 (37.15)	50 (27.34)	183 (100)
Finish of the denture	44 (24.04)	89 (48.63)	50 (27.33)	183 (100)
Overall satisfaction for maxillary and mandibular dentures	54 (29.50)	93 (50.81)	36 (19.69)	183 (100)
Total	355	490	253	1098 (100)

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

Demographic variables and Patient satisfaction	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 (years)	0.200	0.89	1.399	1.44	0.978	3.50	3.458	0.00*	0.098	1.29	0.119	0.05*
Gender	1.560	0.02*	2.911	1.94	0.369	0.00*	0.335	2.77	1.255	0.08	0.288	3.09
Socioeconomic class	1.289	1.67	2.345	0.05	2.045	2.77	1.205	1.72	1.643	2.36	1.356	1.49
Marital status	2.391	0.25	0.239	2.50	0.988	4.11	0.693	0.39	1.399	1.35	3.799	0.99
Educational status	4.590	1.88	0.563	1.43	1.258	0.10	1.203	0.40	3.442	1.74	2.590	2.78
Smoking habits	0.468	0.46	1.284	4.78	4.522	1.40	4.553	1.30	0.490	0.05*	2.562	0.93
Drinking habits	1.385	2.34	1.652	1.25	1.534	2.38	1.877	2.56	1.284	3.49	0.093	1.56
Type of prosthesis	2.384	1.66	0.306	1.86	0.220	1.29	0.358	1.90	0.457	1.26	1.259	1.84
Duration of wear of prosthesis	2.333	0.05*	4.336	2.44	1.444	3.44	0.044	3.69	1.279	0.27	1.667	3.48
No. of removal prosthesis used	1.903	2.05	3.788	0.05*	1.024	2.84	1.036	0.44	0.094	4.59	0.386	0.13
Denture given by type of dentists	1.459	1.98	1.204	1.48	3.904	1.23	2.358	3.18	1.472	1.68	1.361	0.24
No. of times denture repaired	0.496	0.05*	3.455	0.93	0.736	1.16	0.447	0.92	3.380	1.00	0.344	1.09
Patient behaviour	1.229	1.40	0.096	0.49	0.006	2.57	1.228	1.23	0.431	2.05	1.455	0.00*

P≤0.05*

of patients have exacting attitude. In a study by Epifania, *et al.*^[15] minimum duration of wear of denture by patients was 1 month. Contrary results were seen in study by Sanketh, *et al.*^[14] in which majority of patient were having philosophic attitude.

In the present study among all study participants, majority of study participants were moderately satisfied with the retention, esthetics, mastication, finish of the denture and overall satisfaction for maxillary and mandibular dentures. Most of the study participants were poorly satisfied with the speech due to removable prosthesis. In the study by Bhatt, *et al.*^[8] majority of study participants were either very happy or happy by retention, esthetics, mastication, speech, finish of the denture and overall satisfaction for maxillary and mandibular dentures. While in study by Ahmed, *et al.*^[5] majority of study participants were satisfied with speech, mastication, esthetics after removable denture.

With respect to factors effecting the patient satisfaction, in the present study age significantly associated with mastication and overall satisfaction. Gender was significantly associated with retention and speech due to removable denture. Smoking habits with denture finish. Duration of wear of prosthesis was significantly associated with retention. No. of removal prosthesis used was significantly associated with aesthetics of denture. Number of times denture was repaired was significantly associated with retention of denture. Patient behavior was

significantly associated with overall patient satisfaction. In contrary to this in study by Sanketh, *et al.*^[14] satisfaction grades and gender had a positive correlation. It was reported that higher the educational qualification, higher was the satisfaction with treatment. In study by Ahmed, *et al.*^[5] it was reported that there was significant difference between patients esthetics and age groups.

Material used in removable prosthesis fabrication also have an impact on the patient satisfaction which was reported in a study done by Sherif A. Sadek and Dina Elawady^[16] in which they concluded that patient satisfaction was improved with thermopress removable prosthesis as compared with vitallium removable prosthesis. In one of the clinical trials done by Fueki K^[17] *et al.* reported that patient satisfaction was higher when the removable prosthesis was fabricated with thermoplastic resin as compared with metal clasp retained removable prosthesis.

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.

If the patients are satisfied with the prosthesis in terms of restoring of masticatory function and speech, the psychological problems associated with the prosthesis can be prevented. The

most important function of speech and chewing has to be restored and maintained so that the normal expectations from a person in terms of social engagement and nutritional levels can be maintained.

Conclusion

It was concluded that majority of study participants were moderately satisfied with the retention, esthetics, mastication, finish of the denture and overall satisfaction for maxillary and mandibular dentures. Most of the study participants were poorly satisfied with the speech due to removable prosthesis. Factors affecting parameters of patient satisfaction was age, gender, smoking habits, duration of wearing prosthesis, no. of removal prosthesis used, number of times denture was repaired, patient behaviour was significantly associated with overall patient satisfaction.

Financial support and sponsorship

The present study didn't receive funds or grants from any of the agencies in India or Abroad.

Conflicts of interest

There are no conflicts of interest.

References

1. British Society of Prosthodontics. Removable Prosthodontics. Available from: <https://www.bsspd.org/For+Patients/Removable+Prosthodontics.aspx>. [Last accessed on 2019 Dec 28].
2. Petricevic N, Celebic A, Rener-Sitar K. Improvement of patient's satisfaction and oral health-related quality of life by the implant and prosthodontic treatment. *Oral Health Care - Prosthodontics, Periodontology, Biology, Research and Systemic Conditions*. 2012.p. 27-58.
3. Radzi Z, Yahya NA, Zamzam N, Spencer RJ. Missing tooth: A new technique to maintain the space for prosthetic replacement during orthodontic treatment. *Annal Dent Univ Malaya* 2004;11:1-6.
4. Davis DM, Fiske J, Scott B, Radford DR. The emotional effects of tooth loss: Apreliminary quantitative study. *Br Dent J* 2000;188:503-6.
5. Ahmed N, Faruqui S. Factors affecting dental prosthesis satisfaction in Pakistani population. *Inter J Dent Res* 2015;3:24-6.
6. Swelem AA, Gurevich KG, Fabrikant EG, Hassan MH, Aqou S. Oral health-related quality of life in partially edentulous patients treated with removable, fixed, fixed-removable, and implant-supported prostheses. *Int J Prosthodont* 2014;27:338-47.
7. Cosme DC, Baldisserotto SM, Fernandes Ede L, Rivaldo EG, Rosing CK, Shinkai RS. Functional evaluation of oral rehabilitation with removable partial dentures after five years. *J Appl Oral Sci* 2006;14:111-6.
8. Bhat VS, Prasad DK, Malli P. A survey to assess patient satisfaction after receiving complete denture prostheses in A.B. Shetty Memorial Institute of Dental Sciences. *NUJHS* 2014;4:81-5.
9. Carlsson GE. Facts and fallacies: An evidence base for complete dentures. *Dent Update* 2006;33:134-6, 138-40, 142.
10. Gupta PK, Parmar NK, Mand GS. Patient satisfaction in Prosthetic rehabilitation programme. *Med J Armed Forces India* 2001;57:95-8.
11. Silva JD, dos Santos JF, Marchini L. Factors influencing patients satisfaction with complete dentures: A qualitative study. *Braz Dent Sci* 2014;14:83-8.
12. Shams A, Tavanafar S, Dastjerdi MR, Chaijan KA. Patient satisfaction and complication rates after delivery of removable partial dentures: A 4-year retrospective study. *SRM J Res Dent Sci* 2015;6:225-9.
13. Gamer S, Tuch R, Garcia LT. M. M. House mental classification revisited: Intersection of particular patient types and particular dentist's needs. *J Prosthet Dent* 2003;89:297-302.
14. Sanketh AK, Sridevi J, Kalavathy N, Shetty MM, Kumar R, Pavan TP. A survey of the prosthetic status and post treatment satisfaction of patients among a South Indian population. *SRM J Res Dent Sci* 2016;7:17-22.
15. Epifania E, Sanzullo R, Sorrentino R, Ausiello P. Evaluation of satisfaction perceived by prosthetic patients compared to clinical and technical variables. *J Int Soc Prevent Communit Dent* 2018;8:252-8.
16. Sherif A. Sadek, Dina Elawady. Impact of removable partial denture type on patient satisfaction and abutment survival rate-RCT. *Open Access Maced J Med Sci* 2019;7:2513-25.
17. Fueki K, Yoshida-Kohno E, Inamochi Y, Wakabayashi N. Patient satisfaction and preference with thermoplastic resin removable partial dentures: A randomised cross-over trial. *J Prosthodont Res* 2020;64:20-5.