

Estimation and Evaluation of Satisfaction of the Complete Denture Wearers among Institutionalized Elderly Populace in Bhopal City, India: An Original Research Study

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Abstract

Background: With the increasing life expectancy in the last few decades the number of individuals seeking complete denture have risen significantly. Many of the factors involving fabrication of complete denture prosthesis are controlled by the operator however; the patients ultimate satisfaction is of outmost importance. Hence; this study was outlined and conducted to assess the satisfaction of the complete denture wearers in a tertiary dental college/hospital.

Materials & Methods: The study was completed in the department of Prosthodontics of the institute. All the patients were selected from the department's regular patient's footfall. Author had planned to complete the study on cross-sectional basis wherein it included total of 100 denture wearing patients. The key objectives were assessing the impact of these dentures on the biological, psychological and social health of the patients. For the intricate assessment of the impact of these dentures on the patients, a questionnaire was prepared using which consisted of 8 questions. Various parameters regarding CD satisfactions were evaluated via questionnaire. Author analyzed the data of patients who truthfully responded to this questionnaire. Response was recorded and data was processed statistically to evaluate satisfaction level.

Results: Statistical analysis was done using statistical software Statistical Package for the Social Sciences (SPSS). The obtained data was subjected to appropriate statistical tests to obtain p values, mean, standard deviation, standard error and 95% CI. $P \leq 0.05$ was considered as statistically significant. 52 patients were totally satisfied with the masticatory efficacy of complete dentures. In regards to comfort, retention and phonetics, more than 75 % the patients were quite satisfied in their responses. Majority of the respondents had negatively outlook about the denture odour.

Conclusion: Within the limitations of the study author concluded that most of the studied patients were fairly satisfied with their complete dentures. Additionally, the overall quality of life of the patients receiving artificial dental prosthesis is very minimally affected by complete dentures. More stress on newer clinical trends with better high quality materials must be employed.

Key-Words: Complete denture, Satisfaction, Survey, Prosthodontics, Retention, Stability

Introduction

Complete dentures (CDs) serve as a Prosthodontic treatment option for completely edentulous patients; however, the risk of low patient acceptance should be considered. Previous studies have proved that the great majority of completely edentulous patients are satisfied with their complete dentures. Satisfaction with CDs has been associated with different denture-related, patient-related and oral-related factors.¹ In some patients it is related primarily to the functioning and the appearance of the dentures; however in other patients psychological factors such as patient personality also play a key role with this regards. Although the majority of the publications report high level of patient's satisfaction with CDs in different aspects, there is always a certain percent of those who

are dissatisfied.² The most common reasons for dissatisfaction in CD wearers are unsatisfactory retention and comfort of denture, as well as chewing problems, aesthetic appearance and speech. Over the years, there has been significant improvement in the techniques of fabrication of complete dentures; however, in relation to the psychological impact of the patient receiving artificial dental prosthesis, very little emphasis has been paid.³ In predicting the satisfaction of the patients after receiving complete dentures, an important role is played by psychological factors. For the success of prosthetic treatment, other contributing factors include mastication and speech.⁴ Therefore this questionnaire based study was outlined and conducted to accurately assess the satisfaction level of the complete denture wearers in a dental institution.

Materials & Methods

The present study was planned, abstracted and executed in the department of Prosthodontics (Bhabha College of Dental Sciences, Bhopal, India). It included segregation of complete denture wearing patients from July 2023 to June 2024. All the patients were selected from the department's regular patient's footfall. To avoid any kind of inconsistency in selection procedure, one in every two was selected through systemic random sampling. A total of 100 existing (both old and new) cases were selected from the department. All patients were asked to complete the questionnaire regarding the overall outlook of CD including satisfaction. The main purpose of the study was to assess the impact of these dentures on the biological, psychological and social health of the patients. Ethical approval was taken from the institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. The confidentiality of the respondents and their freedom of expression were completely ensured. The study was conducted over a period of 8 months in which patients are asked to fill the questionnaire. The relative importance of this study was explained in detail to all participants. The results were subjected to statistical analysis using basic statistical test. P value less than 0.05 was considered as significant. Inclusion criteria for the present study included: Patients who have received upper and lower complete denture, Patients more than 40 years of age, Patients without history of any other systemic disorder, Patients without any gross maxillofacial anomaly, Patients with sound neuromuscular control, Patient those are having positive outlook towards their treatment and operator. Authors ensured for uniform denture processing steps and methodologies for all samples dentures. This was particularly attempted to maintain the data quality and to avoid any biasness and possible encroachment of confounders.

Statistical Analysis & Results

All the observational findings were gathered and sent for statistical evaluation using statistical software Statistical Package for the Social Sciences version 22 (IBM Inc., Armonk, New York, USA). The resultant data was subjected to suitable statistical tests to calculate p values, mean, standard deviation, standard error and 95% CI. Total 40 females and 60 male patients participated in the study. Table 1 and Graph 1 shows that age groups 40-50 years had 23 males and 11 females ($P < 0.05$), 51-60 years had 18 males and 12 females, 61-70 years had 11 males and 13 females ($P > 0.05$) and >70 years had 8 males and 4 females ($P > 0.05$). P value less than 0.05 was considered as significant. Table 2 shows that roughly 36 patients were not satisfied with the esthetic of the complete dentures. 52 patients were totally satisfied with the masticatory efficacy of complete dentures. In regards to comfort, retention and phonetics, more than 75 % the patients were quite satisfied in their responses. Majority of the respondents had negatively outlook about the denture odour. When concerning cost factors, the patients were very much satisfied with removable partial dentures. Roughly half of the participants were not satisfied about Fracture Resistance of the prosthesis. The overall measured significant level (p value) was 0.002. It was fairly significant. Few other studied parameters have also been included and illustrated in Table 2. Table 3 shows fundamental statistical description with level of significance evaluation using Pearson Chi-Square Test. This was attempted in relation to each and every question of the questionnaire. Significant inferences were drawn for question no 2,3,6 and 7 respectively ($p < 0.05$ significant). Table 4 illustrates about the estimation amongst all studied Questions using one-way ANOVA. Highly significant inferences were drawn for one-way ANOVA assessments ($p = 0.001$). Graph 2 illustrated about the detailed representation of Mean, SD, SE.

Table 1: Age & gender wise distribution of patients

Age Group	Male	Female	Total	P value
40-50 Yrs	23	11	34 [34 %]	0.01*
51-60 Yrs	18	12	30 [30 %]	0.80
61-70 Yrs	11	13	24 [24 %]	0.90
>70 Yrs	8	4	12 [12 %]	0.40
Total	60	40	100	Significant

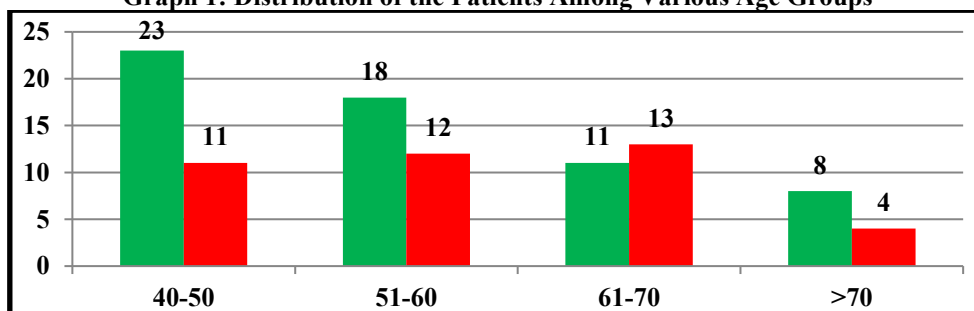
* $p < 0.05$ significant

Table 2: Questionnaire responses compilation with observational statistical inferences

S. No	Questions	Satisfied	Not Satisfied	p Value
1	Are you satisfied with the complete denture's Esthetics ?	64	36	0.002* (* $p < 0.05$ significant)
2	Are you satisfied with the complete denture's Masticatory efficacy ?	52	48	
3	Are you satisfied with the complete denture's Comfort ?	76	24	

4	Are you satisfied with the complete denture's Retention ?	79	21
5	Are you satisfied with the complete denture's Phonetics ?	85	15
6	Are you satisfied with the complete denture's Stability ?	55	45
7	Are you satisfied with the complete denture's strength/durability ?	49	51
8	Are you satisfied with the complete denture's Smell?	26	74

Graph 1: Distribution of the Patients Among Various Age Groups



Graph 2: Detailed representation of Mean, SD, SE



Table 3: Fundamental Statistical Description with level of Significance evaluation using Pearson Chi-Square Test

Qus No.	Mean	Std. Deviation [SD]	Std. Error [SE]	95% CI	Pearson Chi-Square Value	df	Level of Significance (p value)
1	3.32	0.654	0.170	1.96	2.888	1.0	0.090
2	2.44	0.656	0.080	1.96	2.987	2.0	0.010*
3	2.87	1.25	0.049	2.33	2.434	1.0	0.000*
4	2.55	0.498	0.023	1.96	1.673	1.0	0.090
5	2.58	0.453	0.041	1.96	2.859	3.0	0.020
6	1.34	0.376	0.055	1.96	2.872	1.0	0.005*
7	1.89	0.167	0.045	1.96	1.232	1.0	0.002*
8	2.36	0.387	0.022	2.33	1.223	1.0	0.567

*p<0.05 significant

Table 4: Estimation amongst all studied Questions using one-way ANOVA

Variables	Degree of Freedom	Sum of Squares \sum	Mean Sum of Squares $m\sum$	F	Level of Sig. (p)
Between Questions	2	1.530	1.937	1.1	0.001*
Within Questions	15	2.504	0.237		-
Cumulative	101.13	07.234			*p<0.05 significant

Discussion

Although conventional complete denture therapy is not considered the minimum standard of treatment for total edentulism in some developed countries; it is still extensively used for the replacement of missing dentition and the use of it is not expected to decline in the near future especially in less developed populations with limited economic resources.⁵ In addition, more people worldwide are advancing into old age and a growing number of edentulous people are expected. Edentulism has a deep impact on the quality of life, affecting individuals' physiological, biological, social, and psychological state.⁶ It can also cause a state of depression due to disturbances in speech, esthetics, mastication, and a feeling of inferiority because an important part of the person has been lost. Conventional complete dentures are still the treatment of choice in many cases for both economic and biological reasons.⁷ However, a considerable proportion of denture wearers are dissatisfied with their complete dentures. Several studies investigated factors that may affect patients' satisfaction with their complete dentures, such as denture technical quality, condition of the residual ridges, and patient's gender, age, previous denture experience, and personality.⁸ Patients wearing lower conventional complete denture reported inferior oral health-related quality of life, functional outcomes and satisfaction with treatment when compared with patients with fitted implant supported prostheses.⁹ However, some studies reported that patients with mandibular implant supported overdenture had similar impacts on quality of life and satisfaction with treatment when compared with conventional lower complete dentures.¹⁰⁻¹² Here in this study we analyzed 100 patients. Approximately 36 patients were not satisfied with the esthetic of the complete dentures. 52 patients were totally satisfied with the masticatory efficacy of complete dentures. In regards to comfort, retention and phonetics, more than 75 % the patients were quite satisfied in their responses. Majority of the respondents had negatively outlook about the denture odour. Many of the recent pioneer studies have also highlighted somewhat similar inferences in this regards.¹³⁻¹⁸

Conclusion

Within the limitations of the study author concluded that most of the studied patients were fairly satisfied with their complete dentures. Additionally, the overall quality of life of the patients receiving artificial dental prosthesis is very minimally affected by complete dentures. More stress on newer clinical trends with better high quality materials must be employed. However, future studies are required for further exploring various follow-up steps that could be taken for improving the quality of life of patients receiving complete denture prosthesis.

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