



Original Article

Patient Satisfaction with Quality of Dentures at Teaching Hospital of Lahore

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ABSTRACT

Complete dentures are fabricated to restore functional and esthetic needs of edentulous patients. Poor psychomotor abilities undermine their satisfaction level with well fabricated dentures and prosthodontic treatment becomes unsuccessful. **Objective:** To evaluate the patient's satisfaction level with newly inserted complete dentures fabricated by final year students and senior prosthodontists. **Methods:** The cross-sectional observational study population comprised of completely edentulous patients. The study conducted at Prosthodontic department of Lahore Medical and Dental College Lahore; from 8th June till 8th December 2023. A questionnaire was designed to assess parameters. Likert scale was used to answer; ranging from 1 to 5 where 1 is the poorest and 5 is the best value. Dentist, gender and previous experience were compared with patient satisfaction parameters. **Results:** Out of 62 complete denture patients; 72.6% had no denture wearing experience. 43.5% tooth loss was due to caries followed by periodontitis. Tooth loss in past 5 years' time was 61.3%. Denture aesthetics was rated as good 46.8%. Patient satisfaction parameters with age group and doctor group showed significant association. Correlation of patient satisfaction parameters with doctor group was statistically significant for mandibular denture speech, mandibular function and operator service p-value <0.05. **Conclusions:** Patient satisfaction with removable prosthesis determines the success of the prosthodontics intervention. Evaluation of patients' satisfaction level should be carried out routinely after the completion of the treatment as will help in the improvement of the work quality of a dental practitioner.

INTRODUCTION

Edentulism is a worldwide problem where patients lose all his teeth [1]. The rehabilitation of such patients is always challenging due to the involvement of functional and psychological factors that need to be restored through removable prosthesis [2]. The success of complete denture largely depends on two factors i.e. patients' acceptance to the new prosthesis and the denture quality. Certain patient related factors like age, gender, previous denture experience along with the operator related factors such as dentist expertise/experience and quality of newly fabricated dentures affect successful treatment [3]. Out of all the factors the dentist experience greatly affects the patient's satisfaction and acceptance of dentures [1, 3]. Dental literature has documented that 60 % patients

accept their dentures after a week of insertion and 20% need at least 1 month for adaptation [1]. Few studies reported an inconclusive and insignificant correlation between patient satisfactions with dentures and dentist experience [4]. According to few researchers besides providing high quality prosthesis by expert dentists patients satisfaction level with the provided prosthesis is low therefore it is difficult to assess the importance of experience in this field of dentistry [5]. At college of Dentistry Lahore Medical and Dental College Lahore supervised denture fabrication by final year BDS students is carried out every year. Each student is supposed to fabricate 2 dentures under the direct supervision of a qualified prosthodontist. Their clinical work involves

different steps of complete denture fabrication which they perform on their own. The concerned faculty member verifies whether the work has been done correctly and advises if any correction or retake needed. At the end of the rotation students are graded for their performance. For post operational complaints; a recall visit for every patient is planned after 1 week of denture insertion. The attributes of a well-constructed denture include excellent denture qualities like good retention, stability and support of both maxillary and mandibular dentures along with superior aesthetics and comfort [6, 7]. Besides having all the above mentioned qualities, the success of well fabricated complete denture is still assessed differently by prosthodontist and by the patients [8]. Some reports say that technically well fabricated dentures are not accepted by certain patients. Some excellent prosthesis treatments end up in failure due to patient related factors [9]. There is no documented method that can assess the successful denture treatment service. However, patient's satisfaction level could be as efficient way to check the clinical success of a denture [8]. Satisfaction results are also easily measurable and allow effective computation and direct patients opinion about prosthodontic treatment procedures [9].

The objective of the current study was to evaluate the patient's satisfaction level with newly inserted complete dentures fabricated by final year students and senior prosthodontists.

METHODS

This cross-sectional observational study population comprised of all the completely edentulous patients of both genders who reported to Prosthodontic Department of Lahore Medical and Dental College, Lahore from 8th June 2023 till 8th December 2023 in 6 months duration. The age ranged from 40 to 80 years. Non probability purposive sampling was used for sample selection. Sample size was calculated from a previous study done on factors affecting patient satisfaction with complete dentures [13]. The inclusion criteria were patients seeking new complete dentures for the first time or replacement of old complete dentures. Patient with last extraction of at least 3 months, without severe medical conditions e.g. neuromuscular disorder, mental condition and oral pathologies. All the patients who wore dentures for at least one month after denture construction and agreed to participate. Only those complete dentures made by final year dental students supervised by faculty, post graduates and senior faculty were included. Exclusion criteria included patients wearing complete dentures made elsewhere, patients wearing complete dentures for less than a month and those who refused to participate in the study. The selected patients after obtaining informed consent were comfortably seated in a dental chair. Questionnaire including 4 sections was

designed, i.e., personal information, assessment of denture with respect to aesthetics, speech, mastication and comfort. Likert scale was used to answer each section ranging from 1 to 5 where 1 is the poorest and 5 is the best value. Operator service was divided in to 2 groups, seniors with 5 years' minimum experience group 1 and students in group 2 under supervision of senior prosthodontists. Age was also divided in to 2 groups, less than 50 years and more than 50 years. Patients were given confidence and encouraged to give frank opinion about the newly inserted dentures. The questionnaire was explained and questions asked in their own mother tongue. Ethical clearance was obtained from Dental College Ethical Review Board. Patients' demographic information such as age, gender and prior denture use experience was registered. Dentist, gender and previous experience was compared with satisfaction. The data were entered and statistically analyzed using SPSS version 26.0. Descriptive statistics were computed. The Kruskal Wallis test was used to find out the association between patients' satisfaction with age groups and doctor groups. P-value <0.05 was kept as significant level. Pearson correlation between doctors' group and previous denture experience verses all parameters of patients' satisfaction was obtained; p-value <0.05 was the level of significance.

RESULTS

The studied sample included 62 complete denture patients where 29 (46.8%) were males and 33 (53.2%) were females, the age of the patients ranged from 40 to 77 years and mean age recorded was 60.40 ± 8.01 years. 18 (29.0%) patients were employed and 44 (71.0%) patients were unemployed. 17 (27.4%) had previous denture experience where majority patients had good denture experience 7 (11.3%) however poor denture experience was documented by 4 (6.5%) patients. 45 (72.6%) had no denture wearing experience. The main reason of tooth loss was caries 27 (43.5%) followed by periodontitis 24 (38.7%), trauma 7 (11.3%) and least frequent was patients with tooth loss due to other causes 4 (6.5%). Maximum patients lost teeth in past 5 years' time 38 (61.3%) and least number of patients lost their teeth for more than 10 years 6 (9.7%). Denture aesthetics was rated as good 29 (46.8%), very good 20 (32.3%), average 13 (21.0%), none has reported poor aesthetics 0 (0.00%). Maximum patients were satisfied with their dentures (Table 1).

Table 1: Frequency Distribution of Patient Satisfaction Levels with Denture Attributes (N=62)

| Patient Satisfaction Level | Maxillary Denture Function N (%) | Maxillary Denture Speech N (%) | Mandibular Denture Function N (%) | Mandibular Denture Speech N (%) | Operator Service N (%) |
|----------------------------|----------------------------------|--------------------------------|-----------------------------------|---------------------------------|------------------------|
| Very Poor | 2 (3.2%) | 1 (1.6%) | 6 (9.7%) | 7 (11.3%) | 0 (0.00) |
| Poor | 2 (3.2%) | 3 (4.8%) | 4 (6.5%) | 4 (6.5%) | 2 (3.2%) |
| Acceptable | 4 (6.5%) | 4 (6.5%) | 27 (43.5%) | 40 (64.5%) | 13 (21.0%) |

| | | | | | |
|-----------|------------|------------|------------|-----------|------------|
| Good | 34 (58.8%) | 31 (50.0%) | 20 (32.3%) | 3 (4.8%) | 42 (67.7%) |
| Very Good | 20 (32.3%) | 23 (37.1%) | 5 (8.1%) | 8 (12.9%) | 5 (8.1%) |

Kruskal-Wallis test significance was calculated for patient satisfaction with age group and doctor group; statistically significant association of maxillary denture speech, mandibular denture function and speech and operator service within group of doctors was found p-value <0.05 (Table 2).

Table 2: Association of Denture Functions with Age and Group of Doctors (N=62)

| Variables | Group of Doctors | | p-value < 0.05 | Age Groups | | p-value < 0.05 |
|---------------------|----------------------|---------------------|----------------|-----------------------|-----------------------|----------------|
| | Students (Mean Rank) | Seniors (Mean Rank) | | <50 years (Mean Rank) | >50 years (Mean Rank) | |
| Aesthetics | 29.54 | 35.33 | 0.19 | 15.40 | 3.91 | 0.024 |
| Maxillary Function | 32.87 | 28.83 | 0.35 | 25.50 | 32.03 | 0.39 |
| Maxillary Speech | 28.38 | 37.60 | 0.04 | 24.00 | 32.16 | 0.28 |
| Mandibular Function | 24.07 | 46.00 | 0.00 | 28.70 | 31.75 | 0.70 |
| Mandibular Speech | 27.68 | 38.95 | 0.01 | 31.40 | 31.51 | 0.98 |
| Operator Service | 29.43 | 35.55 | 0.12 | 29.50 | 31.68 | 0.75 |

Correlation of patient satisfaction parameters with doctor group was statistically significant for mandibular denture speech p-value 0.06, mandibular function p-value 0.00 and operator service p-value 0.00. However statistically significant results were only found between denture wearing experience and mandibular denture speech p-value 0.01.

DISCUSSION

The current study was conducted on 62 completely edentulous patients who received removable complete dentures made by final year BDS students and senior prosthodontists. Level of patient satisfaction with newly inserted dentures was assessed. High satisfaction level was expressed by majority patients with respect to denture function, speech, aesthetics and operator's performance. These results are in concordance with the results of a study conducted by Waseem et al., in University of Gaza [10]. 92.1% patient satisfaction level was reported furthermore, upper denture was found superior to the lower one in all aspects of denture attributes. In contrast low satisfaction level was reported by Turker et al., in their research conducted on Turkish population [11]. Similarly, Al Essa et al., stated low satisfaction level with removable dentures in their respective study [12]. Yara et al., evaluated patient satisfaction with denture 8 weeks after denture insertion [13]. They stated that 6 to 8 weeks is a required time period to assess satisfaction level with newly installed dentures. The time potentially establish new masticatory muscle memory. The reason for high satisfaction level in the current study could be explained on the basis that the service cost of prosthodontic treatment was very low that

skewed patients level of satisfaction positively. Secondly, prosthodontic faculty mentored the denture fabrication process meticulously. Lastly the edentulous patients considered the loss of natural teeth as a result of aging process and they did not expect much from the complete dentures. All these factors eventually raised their satisfaction levels. Majority patients also rated operator performance good that created a good patient doctor relate. In our opinion all the mentioned factors positively affected the satisfaction levels. In the current study 50.0 % patients rated quality of maxillary denture speech as good whereas 64.5% found mandibular denture speech acceptable. Similarly, Bhatt et al., assessed phonetics in patients using removable prosthesis and reported complains of speech impairment during denture adaption period [14]. They further claimed that the patient's speech gradually improves with practice and persistent denture use. In the present study maximum patients reported good masticatory performance with maxillary denture 54.8%. Similarly, with respect to good speech majority patients reported maxillary denture to be better than mandibular. Only 1.6% patients reported bad phonetics. Likewise, Waseem et al., reported better satisfaction levels with maxillary dentures [10]. Congruent results were seen in other studies as well [15-18]. In contrast a smaller number of patients were happy with masticatory function in a study done by Vinaya et al., [19]. Motivation by patient can overcome this tissue dependent factor efficiently. The denture chewing ability with mandible denture was considered acceptable by majority patients; 43.5%. Yara et al., found dissatisfaction with mandibular dentures [13]. Their patients registered decrease retention, stability and mastication of mandibular denture. Many patients complained of food lodgment under dentures and rest could not function. We believe that better satisfaction results were attributed because of less tongue interference with maxillary denture. Furthermore, large denture bearing area and better seal due to post dam area are additional factors for better performance of maxillary dentures [20]. Whereas, in contrast mandible provides poor control of denture because of the factors like forces via tongue movement, increase ridge resorption and less denture bearing surfaces [18, 19, 21]. All mentioned factors result in poor denture retention and stability. Denture stability and retention improves and affected by impression taking skills of dentist. However, few studies compared psychological factors like good patient dentist relation and patient expectation with denture outcome are more important than technical, clinical and anatomical factors [22]. This was seen in results of current study where denture fabricated by seniors were more acceptable as compared to junior doctors. Maxillary and mandibular denture speech, function and operator service was all

significantly good in senior doctor group. However, contrasting results were found in a study stating fact that high expectation of patients from senior altered the satisfaction level negatively [13]. Yara et al., found that no correlation between dentist experience and patient satisfaction existed [13]. However, majority were happy with their prosthesis made by junior and claimed that was difficult to investigate the importance of experience in prosthodontics. Maximum patients had good previous denture experience. However, majority patients; 72.6% were getting their prosthesis for very first time. Patients who had good previous denture experience were highly satisfied. Similar results were obtained by Waseem et al., in their respective study and good adaptation was seen [10]. Mandibular denture speech was significantly good in patient with previous denture experience in our study. Similarly, 46.8% patients in the current study were satisfied with their denture aesthetics. Color of artificial dentition as well as denture bases are major contributing factors responsible for achieving acceptable aesthetics. Patient satisfaction level is directly related to denture aesthetics [19, 20]. Nausea speech difficulty, sense of having foreign body, increase salivary flow difficult chewing swallowing and frequent complaints of patients during denture adaptation [23]. When dentures do not match patients' expectation, they refuse to use. It is important to evaluate patient satisfaction in routine prosthodontic practice that will help in improvement of the quality of services provided.

CONCLUSIONS

Patient satisfaction with removable prosthesis determines the success of the prosthodontic intervention. Evaluation of patients' satisfaction level should be carried out routinely after the completion of the treatment as will help in the improvement of the work quality of a dental practitioner.

Authors Contribution

Conceptualization: MM

Methodology: SHAR, RAA, HA

Formal analysis: FY, SN

Writing, review and editing: KQ, SN

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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