

ORIGINAL ARTICLE

Evaluation of Satisfaction of Patients Wearing Fixed Partial Denture Coming to Khyber College of Dentistry

NAJMUSSAHAR¹, UZMA AFRIDI², SANA ABDUL RAHMAN³, MUNIBA SALEEM⁴, FAROOQ TAJ⁵, UZMA KHALIL⁶

¹⁻³Trainee Medical Officer, Prosthodontics, Khyber College of Dentistry, Peshawar, Pakistan

⁴Demonstrator, Dental Materials, Bacha Khan Dental College, Mardan, Pakistan

⁵Assistant Professor, Prosthodontics, Khyber Medical University-Institute of Dental Sciences, Kohat, Pakistan

⁶Assistant Professor, Prosthodontics, Rehman College of Dentistry, Peshawar, Pakistan

Correspondence to: Uzma Khalil, Email: Uzma_khalil@hotmail.com

ABSTRACT

Background: Patient satisfaction is an important patient-reported outcome in prosthodontic rehabilitation and reflects the extent to which functional and esthetic expectations are met. Fixed partial dentures (FPDs) remain an important option for replacing missing teeth.

Objective: To evaluate patient satisfaction with tooth-supported fixed partial dentures regarding mastication, speech, esthetics, and overhanging margins among patients attending the Department of Prosthodontics, Khyber College of Dentistry, Peshawar.

Material and Methods: A cross-sectional descriptive study was conducted in the Department of Prosthodontics, Khyber College of Dentistry, from February 2023 to August 2023. A total of 246 patients aged over 18 years and under 50 years who had worn a tooth-supported FPD for at least six months were recruited using non-probability consecutive sampling. Satisfaction was assessed using a five-point Likert scale for mastication, speech, esthetics, and overhanging margins. The combined score was categorized from poorly satisfied to satisfied. Data were analyzed using SPSS version 20, with statistical significance set at $p \leq 0.05$.

Results: The mean age was 30.37 ± 7.03 years and the mean overall satisfaction score was 17.30 ± 3.42 . Overall, 200 (81.3%) participants were satisfied with their FPD, 30 (12.2%) were somewhat satisfied, 8 (3.3%) were neutral, 2 (0.8%) were not very satisfied, and 6 (2.4%) were poorly satisfied. Satisfaction was 80.4% for mastication, 77.2% for speech, 76.0% for esthetics, and 65.0% for overhanging margins. Satisfaction differed significantly across age groups ($p=0.008$), whereas no significant difference was observed by gender ($p=0.99$).

Conclusion: Most participants reported satisfaction with their tooth-supported FPDs, particularly regarding mastication, speech, and esthetics. Overhanging margins showed comparatively lower satisfaction. Age was associated with satisfaction, while gender was not. Attention to prosthetic design, marginal adaptation, functional performance, esthetics, patient counselling, and follow-up may help improve patient-reported outcomes.

Keywords: Fixed partial denture; patient satisfaction; mastication; overhanging margins

INTRODUCTION

Loss of natural teeth can adversely affect mastication, speech, appearance, oral comfort, and the overall quality of life of affected individuals. Replacement of missing teeth is therefore an important component of prosthodontic rehabilitation. Several treatment options are available for partially edentulous patients, including removable partial dentures, implant-supported prostheses, resin-bonded prostheses, and conventional tooth-supported fixed partial dentures (FPDs).¹ The choice of treatment depends on several clinical and patient-related considerations, including the location and extent of the edentulous space, condition and periodontal support of the potential abutment teeth, occlusal requirements, esthetic expectations, patient preference, and financial considerations.²

Fixed partial dentures have traditionally played an important role in the rehabilitation of partially edentulous patients.³ Their fixed nature provides a stable replacement for missing teeth and can restore important oral functions without requiring the patient to remove the prosthesis during daily activities. In addition to replacing missing teeth, an appropriately designed FPD should restore or improve mastication, speech, and appearance while maintaining the health of the supporting teeth and periodontal tissues.⁴

Patient satisfaction is increasingly recognized as an important patient-reported outcome in prosthodontics. Unlike purely clinical measures, satisfaction reflects the patient's subjective experience of treatment and incorporates the extent to which the delivered prosthesis meets individual expectations. Satisfaction can be influenced by several interacting factors, including chewing ability, speech, esthetic appearance, comfort, prosthesis retention, marginal adaptation, oral hygiene, previous dental experiences, expectations, communication with the dentist,

and the quality of follow-up care.⁵

Functional performance is one of the major reasons for providing an FPD. Missing teeth can compromise chewing efficiency and may alter the distribution of occlusal forces.⁶ A fixed prosthesis is expected to restore an effective and comfortable masticatory function by providing an appropriate occlusal relationship and stable replacement teeth. Masticatory satisfaction is, however, subjective and may differ between patients even when the prosthesis appears clinically acceptable. Mastication is an important component of FPD assessment and discusses the use of clinical and chewing-related methods to evaluate masticatory performance. Patient perception of the ability to eat comfortably therefore remains an important component of treatment evaluation.⁷

Speech is another important functional consideration, particularly when anterior teeth are replaced. Tooth loss and prosthetic rehabilitation can influence the production and intelligibility of speech sounds. An appropriately designed anterior FPD should reproduce suitable tooth position, contour, and relationships with the surrounding oral structures to facilitate normal phonetics.⁸ Patients may become aware of speech changes immediately after prosthetic treatment, and their perception of speaking ability can consequently influence satisfaction with the restoration. Assessment of speech-related satisfaction can therefore provide information that may not be apparent from a purely clinical examination.⁹

Esthetics is also a major determinant of satisfaction with fixed prosthodontic treatment. Patients commonly expect a replacement tooth or teeth to resemble the natural dentition in shade, shape, size, alignment, contour, and overall appearance. Esthetic outcomes may be particularly important when an FPD replaces teeth visible during smiling or speaking. The patient's perception of appearance may depend not only on the restoration itself but also on gingival contour, emergence profile, tooth position, and harmony with the adjacent natural teeth. Because esthetic expectations vary among individuals, patient-reported

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assessment provides valuable information regarding whether the restoration has achieved the desired appearance.¹⁰

Patient satisfaction is not determined exclusively by the physical characteristics of the prosthesis. Patient-related factors such as age, sex, education, socioeconomic circumstances, oral hygiene, previous dental experiences, and expectations may influence perceptions of treatment. Dentist-related factors, including clinical skill, communication, explanation of treatment alternatives, and counselling regarding expected outcomes and maintenance, may also influence satisfaction. Similarly, laboratory procedures can affect the fit, occlusion, contour, shade, and overall quality of an FPD. Regular maintenance and follow-up are important because biological and mechanical complications may develop after treatment and can influence satisfaction over time.¹¹

Previous studies have reported generally high levels of satisfaction with fixed partial dentures, although satisfaction varies according to the functional and esthetic domain assessed. For example, the findings from a study in Singapore¹² in which satisfaction was high for esthetics, chewing comfort, and speech, while another study from Sudan¹³ reported comparatively lower satisfaction with chewing ability than with esthetics. These differences indicate that patient satisfaction may vary according to population, treatment characteristics, assessment methods, and clinical setting. Local evidence is therefore important for understanding the experience of patients receiving prosthodontic treatment in different healthcare environments.

Despite the importance of patient-reported outcomes in prosthodontics, there is limited local evidence describing satisfaction with tooth-supported fixed partial dentures among patients attending dental teaching hospitals in Pakistan. Evaluating satisfaction in a local clinical population can provide useful information about the outcomes perceived by patients and can identify specific areas of prosthetic care that may require greater attention. In particular, examining mastication, speech, esthetics, and overhanging margins together provides a broader assessment of the patient's experience than assessment of a single clinical parameter alone.

Therefore, the present study was conducted among patients attending the Department of Prosthodontics, Khyber College of Dentistry, Peshawar, to evaluate satisfaction with tooth-supported fixed partial dentures. The study specifically assessed satisfaction regarding mastication, speech, esthetic appearance, and overhanging margins and examined the distribution of overall satisfaction according to age and gender. The findings may contribute to a better understanding of patient-centered outcomes of FPD therapy and may help clinicians identify aspects of treatment that can be improved through careful prosthetic design, clinical execution, patient counselling, and follow-up.

MATERIALS AND METHODS

This cross-sectional descriptive study was conducted in the Department of Prosthodontics, Khyber College of Dentistry, Peshawar, from February 2023 to August 2023. The study included 246 male and female patients aged more than 18 years and less than 50 years who had been wearing a tooth-supported, permanently cemented FPD for at least six months. The study defined an FPD as a permanently cemented prosthesis replacing up to two missing teeth. Patients with implant-supported FPDs and patients wearing a removable prosthesis in the opposite arch were excluded. Non-probability consecutive sampling was used.

A pre-designed proforma was used. Satisfaction was assessed on a five-point Likert scale: 1=poorly satisfied, 2=not very satisfied, 3=neutral, 4=somewhat satisfied, and 5=satisfied. Four domains were assessed: mastication, speech, esthetics, and overhanging margins. The overall score was obtained by combining the four domain scores (range 4–20) and categorized as 4=poorly satisfied, 5–8=not very satisfied, 9–12=neutral, 13–16=somewhat satisfied, and 17–20=satisfied.

Mastication was assessed using the procedures, including clinical assessment and chewing-related tests. Speech was

assessed in relevant anterior cases by asking patients to pronounce fricative and sibilant sounds. Esthetics was assessed using a visual analogue scale. Overhanging margins were assessed clinically using dental examination instruments and by asking patients about sharp margins and food impaction. Assessments were performed by the researcher under supervision of an expert prosthodontist.

The study received approval from the institutional research ethical review committee. Patients meeting the eligibility criteria were invited to participate and oral informed consent was obtained before assessment.

Data were analyzed using SPSS version 20. Frequencies and percentages were calculated for categorical variables, while means and standard deviations were calculated for quantitative variables. Overall satisfaction was stratified by age and gender. A 95% confidence level was used and $p \leq 0.05$ was considered statistically significant.

RESULTS

A total of 246 patients were included. The mean age was 30.37 ± 7.03 years. There were 126 (51.2%) males and 120 (48.8%) females. Regarding age, 109 (44.3%) participants were 18–28 years, 69 (28.0%) were 29–35 years, and 68 (27.6%) were older than 35 years (Table 1).

Table 1: Sociodemographic characteristics of study participants (n = 246)

Variable	Frequency (n)	Percentage (%)
Male	126	51.2
Female	120	48.8
18–28 years	109	44.3
29–35 years	69	28.0
>35 years	68	27.6

Table 2: Distribution of participants according to overall satisfaction with tooth-supported fixed partial dentures (n = 246)

Overall satisfaction category	n	%
Satisfied	200	81.3
Somewhat satisfied	30	12.2
Neutral	8	3.3
Not very satisfied	2	0.8
Poorly satisfied	6	2.4

Table 3: Domain-specific satisfaction with tooth-supported fixed partial dentures regarding speech, mastication, esthetics, and overhanging margins (n = 246)

Domain	Poorly n (%)	Not very n (%)	Neutral n (%)	Somewhat n (%)	Satisfied n (%)
Speech	7 (2.8)	7 (2.8)	12 (4.8)	30 (12.1)	190 (77.2)
Mastication	8 (3.2)	10 (4.0)	12 (4.8)	18 (7.3)	198 (80.4)
Esthetics	10 (4.6)	10 (4.6)	19 (7.7)	20 (8.1)	187 (76.0)
Overhanging margins	12 (4.8)	14 (5.6)	20 (8.1)	40 (16.2)	160 (65.0)

Table 4: Association between overall satisfaction with fixed partial dentures and age group (n = 246)

Satisfaction category	18–28 years, n	29–35 years, n	>35 years, n	Total, n
Poorly satisfied	3	3	0	6
Not very satisfied	1	1	0	2
Neutral	2	1	5	8
Somewhat satisfied	21	8	1	30
Satisfied	82	56	62	200
Total	109	69	68	246

Note: Pearson's chi-square test; $p = 0.008$.

The mean overall satisfaction score was 17.30 ± 3.42 . Overall, 200 (81.3%) participants were satisfied, 30 (12.2%) were somewhat satisfied, 8 (3.3%) were neutral, 2 (0.8%) were not very satisfied, and 6 (2.4%) were poorly satisfied (Table 2).

Domain-specific satisfaction varied across the different aspects of fixed partial denture treatment. The highest proportion

of satisfied patients was observed for mastication (80.4%), followed by speech (77.2%) and esthetics (76.0%). Satisfaction regarding overhanging margins was comparatively lower, with 65.0% of patients reporting satisfaction. These findings indicate that although most patients were satisfied with their fixed partial dentures, marginal adaptation represented a relatively less satisfactory aspect of treatment (Table 3).

Overall satisfaction differed significantly across age groups ($p=0.008$). Among participants classified as satisfied, 82 (41.0%) were aged 18–28 years, 56 (28.0%) were aged 29–35 years, and 62 (31.0%) were older than 35 years. The study reports greater satisfaction among the youngest age group. Satisfaction did not differ significantly by gender ($p=0.99$); among satisfied participants, 102 (51.0%) were male and 98 (49.0%) were female (Table 4).

DISCUSSION

This study found a high level of patient-reported satisfaction with tooth-supported FPDs. More than four-fifths of participants were categorized as satisfied overall, with the highest domain-specific satisfaction reported for mastication, followed by speech and esthetics. Satisfaction with overhanging margins was comparatively lower, suggesting that marginal adaptation and related local factors may be particularly important areas for improving patient experience. The mean overall satisfaction score of 17.30 ± 3.42 fell within the study's 'satisfied' category. The high level of masticatory satisfaction (80.4%) indicates that most participants perceived their FPDs as restoring chewing function adequately. This is consistent with the rationale for tooth-supported fixed prostheses, which provide stable replacement of missing teeth and may facilitate comfortable mastication.

Speech satisfaction was reported by 77.2% of participants. Prosthetic replacement of missing teeth can influence phonetics, particularly when anterior teeth are involved, and appropriate prosthesis design, contour, and adaptation are important for satisfactory speech. The present findings are broadly consistent with the high functional satisfaction reported in previous studies.¹⁴ Esthetic satisfaction was 76.0%. Esthetics is a major patient-centered outcome in prosthodontics and may depend on shade, contour, tooth dimensions, pontic form, and the relationship of the restoration with the surrounding gingival tissues. The previous work reporting similarly high esthetic satisfaction among patients with fixed prostheses.¹⁵

Satisfaction with overhanging margins was lower than for the other domains, with 65.0% reporting satisfaction. This finding is clinically relevant because inadequate marginal adaptation or overextension can contribute to plaque retention, periodontal inflammation, discomfort, food impaction, and other complications. Careful clinical and laboratory procedures are therefore important for both biological health and patient satisfaction.¹⁶ Age was significantly associated with satisfaction in this study ($p=0.008$), with the youngest age group showing a higher proportion of satisfied participants. The study suggests that differences may relate to oral hygiene practices and general health; however, these explanations were not directly tested in the present cross-sectional analysis and should therefore be considered hypotheses rather than established causes. Gender was not significantly associated with satisfaction ($p=0.99$), indicating similar satisfaction distributions between male and female participants.¹⁷

The findings should be interpreted in light of the study design. Consecutive non-probability sampling from a single prosthodontic department limits generalizability to other populations and settings. Satisfaction was assessed at the time of the study, so longitudinal changes in satisfaction could not be evaluated.¹⁸ The study also focused on selected functional and

esthetic domains and did not comprehensively assess other potential determinants such as socioeconomic status, treatment cost, expectations, dentist-patient communication, type of FPD material, location, span length, or duration beyond the minimum six months.

CONCLUSION

Most patients in this study were satisfied with their tooth-supported fixed partial dentures. Satisfaction was particularly high for mastication, speech, and esthetics, whereas satisfaction with overhanging margins was comparatively lower. Age was significantly associated with overall satisfaction, while gender was not. These findings support the importance of patient-centered prosthodontic care that integrates functional performance, esthetic expectations, accurate marginal adaptation, appropriate counselling, oral hygiene instruction, and follow-up.

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