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Original Research Article

Patient satisfaction and maintenance of fixed prosthesis

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ABSTRACT

Background: Fixed partial dentures (FPDs) are commonly used to rehabilitate partially edentulous individuals with functional and aesthetic functions. Patient satisfaction is one of the strongest predictors of treatment success in prosthodontics. The objective was to assess the satisfaction score of patients regarding pain perception, mastication and aesthetics of fixed partial dentures.
Methods: An observational cross-sectional study was performed at the Department of Prosthodontics, Military Dental Centre, Dhaka. Selection of study population A total of 30 patients with fixed partial denture were selected based on convenience sampling. Data for the paper-based structured questionnaire and clinical examination were collected. Patient evaluations of pain, chewing ability and aesthetics were recorded and analyzed descriptively.
Results: Fixed partial dentures were reported to be satisfactory by the most patients. Eighty-three percent of patients were satisfied with their overall care, and half of the patients reported pain relief. For mastication, 40% of patients expressed satisfaction; aesthetic satisfaction was highest (56%). A minority of patients were dissatisfied with all parameters.
Conclusion: Fixed partial dentures yield a good level of patient satisfaction, particularly in terms of aesthetic and functional outcome. Well-designed prosthetic devices improve comfort and quality of life for patients tremendously. But long-term success requires keeping up oral hygiene and attending follow-up appointments.

Keywords: Maintenance, Prosthesis, Satisfaction

INTRODUCTION

Essentially, dental rehabilitation is a crucial part of current dentistry focusing on re-establishing oral function, appearance or eating quality of life in patients with partial or complete loss of teeth and/or alveolar support due to tooth pathology[1]. Tooth loss is a common problem of oral health in the world and has important implications for mastication, speech, face esthetics and psychological aspects.[2,3] With the advances in oral healthcare systems, there is still an increase in demand for prosthodontic rehabilitation among partial edentulous patients globally.[4,5]

Missing teeth is not just a functional impairment, but rather also one of the major psychosocial issues. Compromised facial aesthetics and impaired oral function where the patients commonly suffer with diminished self-esteem and

social harassment.[6] Untreated dental caries and periodontal diseases are thought to be the two main causes of tooth loss through ongoing destruction of supporting oral structures.[7] Thus, prosthodontic rehabilitation is important for the restoration of function and aesthetics and patient-centred outcomes.

Complete and partial removable prostheses, fixed partial dentures, single tooth implants (STIs) or any combination of these treatment modalities are currently offered as the options for replacement of missing teeth. Out of these, fixed partial dentures (FPDs) are most commonly preferred due its stable and durable restoration as well as aesthetic potential.[8,9] FPDs are not removable and can be permanently bonded to either natural teeth or implants; they also fulfill the requirements of partially edentulous spaces restoring its function with improved chewing efficiency and speech.[9,10] The clinical performances of full-arch FPDs are not the only dimensions for long-term success but also considerations of patient satisfaction, maintenance of good oral hygiene and periodontal conditions around abutment teeth.[11]

Patient satisfaction is a complex multidimensional phenomenon that depends on many functional, psychological, and aesthetic factors. Other studies have shown that even though fixed prosthodontic well-being has a high degree of patient satisfaction, the patients' anticipated expectations for treatment frequently surpass the clinical results.[12,13] Thus, for prosthodontic success patient perception is one of the salient factors.

Designing and following preventive maintenance of fixed partial dentures will lead to a better outcome of oral surrounding tissues in terms of biology. Poor pontic design or improper oral hygiene habits can lead to inflammation, plaque buildup and periodontal disease among abutment teeth.[14,15] Evaluation of both clinical outcomes as well determinants of patients' satisfaction with prosthetic treatment is essential to define the overall success or failure of fixed prosthodontics.

To assess fixed partial dentures and evaluate their functional outcome, aesthetic outcome and oral hygiene maintenance after prosthetic rehabilitation.[16]

METHODS

It is a cross-sectional clinical study conducted in the Department of Prosthodontics at Military Dental Centre (MDC), Dhaka Cantonment, Bangladesh. The study lasted one year from February 2022 to January 2023. Its primary objective was to evaluate the patient perceived comfort, function, aesthetics and condition of the surrounding oral tissue with their fixed partial denture.

Thirty patients with fixed partial denture wore. Participants were conveniently sampled along if they were available during follow-up visits and were willing to participate.

Study population and criteria

Patients were carefully selected to ensure a relatively uniform clinical condition of fixed prosthesis users.

Inclusion criteria

Inclusion criteria included patients who had partial tooth loss and were rehabilitated with fixed partial dentures, were between 18 and 78 years of age, had at least one natural tooth supporting the fixed prosthesis, maintained acceptable oral hygiene or were under controlled periodontal conditions, agreed to participate voluntarily and provided written informed consent and were available for clinical evaluation during the study period

Exclusion criteria

Patients were excluded if they had complete tooth loss in the arch, showed advanced periodontal destruction or hopeless abutment teeth, had untreated root caries or fractured roots, suffered from uncontrolled systemic illnesses that could influence oral health, demonstrated poor compliance with oral hygiene instructions, had psychological or behavioral conditions that could affect response reliability and those who declined participation in the study.

Data collection procedure

Data were collected through a self-administered structured questionnaire adapted from published prosthodontic studies and suitably modified to the study objectives. The information was highly concentrated on some patient-reported outcomes, including pain report, chewing ability, speech clarity report, taste perception (Dawn–touch test), esthetic satisfaction with the prosthesis and comfort with wearing the prosthesis (visual analog scale) and oral hygiene habits were also decided daily.

Besides the questionnaire, all patients had a clinical oral examination. The gingiva, mucosa around the pontic area, and the supporting abutment teeth were evaluated using standard dental instruments (mouth mirror, explorer, periodontal probe). The systematic clinical recording of the observed tissue response.

A pre-designed data recording sheet was used for documentation of both subjective (patient responses) and objective clinical findings (examination).

Statistical analysis

The collected data were processed and analyzed using SPSS software version 25. Descriptive statistics such as frequency and percentage were used to summarize the variables. Associations between categorical variables were tested using the Chi-square test, and statistical significance was considered at a p-value of less than 0.05.

Ethical consideration

Ethical approval for the study was obtained from the institutional ethical review board of Military Dental Centre, Dhaka. All participants were informed about the purpose of the study, and written consent was obtained prior to data collection. Confidentiality of patient information was strictly maintained throughout the study, and no personal identifiers were disclosed at any stage.

RESULTS

This section presents the findings of the cross-sectional study evaluating patient satisfaction with FPDs and associated clinical outcomes.

Table 1, below shows the distribution of study participants according to age and gender. The majority of patients were in the 30–39 years age group, while the smallest number was observed in those aged above 80 years. In terms of gender distribution, males were slightly more in number than females, but the overall difference was not large.

Table 1: Demographic distribution of patients (n=30).

Age group (years)	Male	Female
18–29	3	2
30–39	7	3
40–49	1	2
50–59	2	2
60–69	3	1
70–79	3	0
>80	1	0

Table 2 below presents the distribution of patient satisfaction regarding pain associated with fixed partial dentures. Most patients reported being satisfied with the prosthesis, while a smaller proportion expressed moderate or neutral responses. Only a few patients reported low satisfaction or dissatisfaction, indicating an overall positive outcome in terms of pain perception.

Table 2: Patient satisfaction regarding pain (FPD) (n=30).

Response	Frequency (n=30)	Percentage (%)
Satisfied	15	50
Somewhat satisfied	7	23
Neutral	3	10
Not very satisfied	4	13
Unsatisfied	1	3

Table 3 summarizes patient responses regarding satisfaction with fixed partial dentures. The majority of patients reported being satisfied with the prosthesis, while a smaller proportion expressed varying levels of partial satisfaction or neutrality. Only a few patients reported low satisfaction or dissatisfaction, indicating an overall positive perception of the treatment outcome.

Table 3: Patient satisfaction regarding mastication (FPD) (n=30).

Response	Frequency (n=30)	Percentage (%)
Satisfied	12	40
Somewhat satisfied	6	20
Neutral	6	20
Not very satisfied	4	13
Unsatisfied	2	7

Table 4 shows patient satisfaction regarding aesthetics of fixed partial dentures. The majority of patients, 17 (56%), reported being satisfied with the aesthetic outcome. This was followed by 8 (27%) who were somewhat satisfied and 2 (7%) who remained neutral. Only 2 (7%) patients were not very satisfied, while 1 (3%) reported being unsatisfied, indicating an overall positive aesthetic perception

Table 4: Patient satisfaction regarding mastication (FPD) (n=30).

Response	Frequency (n=30)	Percentage (%)
Satisfied	17	56
Somewhat satisfied	8	27
Neutral	2	7
Not very satisfied	2	7
Unsatisfied	1	3

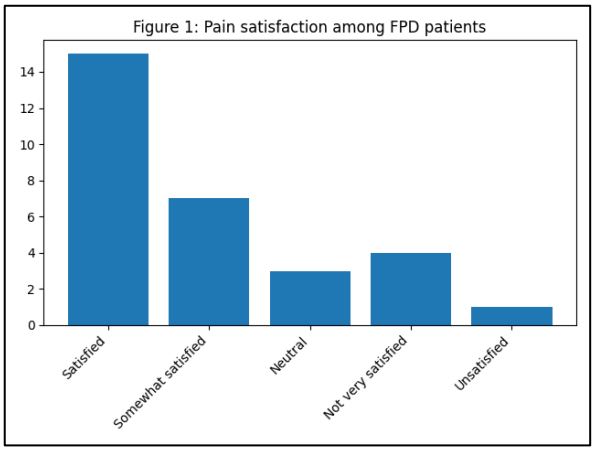


Figure 1: Pain satisfaction of the respondents (FPD) (n=30).

Figure 1 illustrates the distribution of patient satisfaction regarding pain associated with fixed partial dentures. The highest number of patients, 15, reported being satisfied, followed by 7 who were somewhat satisfied. A smaller proportion of patients reported neutral (3), not very satisfied (4), and unsatisfied (1) responses, indicating

generally positive pain-related outcomes after FPD placement.

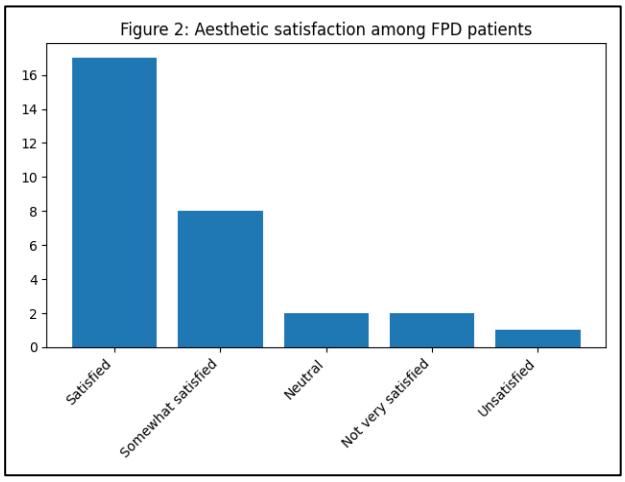


Figure 2: Aesthetic satisfaction (FPD) (n=30).

Figure 2 shows the distribution of patient satisfaction regarding aesthetic outcome of fixed partial dentures. The highest number of patients, 17, reported being satisfied, followed by 8 who were somewhat satisfied. Only 2 patients reported neutral responses and another 2 were not very satisfied, while 1 patient was unsatisfied, indicating an overall positive aesthetic perception among FPD users.

DISCUSSION

The current study was undertaken to assess the patient perception regarding FPDs for pain, mastication and esthetics. Conclusions overall, the results reveal a generally high level of patient satisfaction in all domains assessed and indicate that fixed prosthetic rehabilitation provides acceptable functional and psychological-benefit outcomes among partially edentulous patients.

One of these aspects dealt with pain perception, where 15 (50%) replied completely satisfied and only one patient (3.33%) declared not being satisfied. Notably, this suggests that the majority of patients generally tolerate fixed prostheses with few adverse effects with time. These results are supported by the literature, where suitable established prosthesis had higher comfort and less post-operative discomfort owing to their stability and load distribution.[17] FPDs are generally more predictable and stiffer, which likely leads to less irritation of oral tissues compared with removable solutions.

With respect to mastication, a significant number of patients rated their chewing ability as good. This functional enhancement is one of the primary purposes of fixed prosthodontic treatment. Training data up to October, 2023 FPDs can restore occlusal function and improve food breakdown efficiency so that means FPD will make our diet comfortable. Early studies have shown that making multiple fixed prostheses with proper abutment support and occlusion improves masticatory efficiency, but whether both retainers have disappeared during a long time or not is still questionable.[18] Nevertheless, partial patient dissatisfaction was also observed in a minority of patients and this could be linked to adjustment period, occlusion or residual periodontal sensitivity around abutment teeth.

In this study, aesthetic satisfaction was significantly high, with 17 (56%) patients reporting full aesthetic satisfaction. This mirrors the enormous cosmetic benefit that fixed prostheses provide, especially in terms of natural tooth morphology and smile aesthetics. Aesthetic outcome is undoubtedly viewed as potentially the most clinically significant contributing factor to patient-prognosed success of prosthodontic treatment. The literature notes that when tooth contour and appropriate material choice is used, the aesthetic outcomes of modern fixed restorations are highly acceptable.[19] This study shows a low dissatisfaction rate which further strengthens that FPDs meet patient needs in the aesthetic zone.

The overall positive trend seen for satisfaction in most parameters may also be due to improved patient education, enhanced clinical procedures and the advent of new prosthodontic materials. However, the subjective evaluation of prosthesis performance is often determined by psychological acceptance, which makes patient-centered treatment planning important in improving satisfaction levels.

Though several patients also reported positive experiences, 2% of individuals were neutral or negative. This could relate to individual differences in oral adaptation, oral hygiene behaviors or periodontal history. The long-term success of fixed prostheses not only depends on mechanical design, but also effective maintenance of periodontal health and plaque control around abutment teeth.[20]

Moreover, the patient satisfaction is a multicomponent phenomenon that is determined by expectation, knowledge about oral health and some socioeconomic factors. Previous studies have shown that patients' survival appraisal of oral rehabilitation usually do not align with clinical assessment and highlight the need for combining objective and subjective outcome measures in prosthodontics research.[21] Thus, for the functional and biological success of FPDs, consistent follow-up and reinforcement of oral hygiene instructions is mandatory.

The results of this research are consistent with the previous studies describing a high level of patient satisfaction with fixed partial dentures when these prostheses were designed and maintained appropriately. In addition, the results reaffirm the benefits individualizing treatment planning and patient educational measures to maximize longer-term outcomes.[13]

Limitation of the study

This study has some limitations which need to be taken into account when interpreting the findings. Third, the number of patients included was relatively small (30), which may weaken the generalizability to a wider population. Also, the study was performed in a single institutional setting and thus results may not translate to other clinical settings or patient populations. The cross-sectional design of our study provides data about the patient satisfaction at a given time point only and does not evaluate the long-term performance of fixed partial dentures. Furthermore, the patient responses were based on perception which may differ from individual to individual and this might introduce subjective bias.

CONCLUSION

Within the scope of this study, it can be concluded that fixed partial dentures are generally well accepted by patients, showing a high level of satisfaction in terms of comfort, chewing ability, and aesthetic improvement. Following prosthetic rehabilitation, the majority of patients achieved excellent functional and aesthetic results. Conclusion: Well-designed fixed prostheses greatly improve oral functioning and patient confidence. Long-term success is contingent upon maintaining oral hygiene, follow-up assessments and meticulous clinical planning. Conclusions Fixed partial dentures are a predictable and effective treatment approach for restoring partially edentulous patients when used according to sound clinical guidelines.

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