

Original Article

Assessment of Patients' Satisfaction with Fixed Partial Denture and its Correlation with Patients' Evaluation of Clinicians

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Abstract

Introduction: Patient satisfaction affects clinical outcomes, patient retention, and patient-centered delivery of quality health care. It is a very effective indicator to measure the success of doctors and healthcare organizations. Hence, the present study was designed to investigate the relationship between patients' satisfaction with Fixed Partial Denture and their perception regarding their clinicians' in a dental school in India.

Methods: A cross-sectional survey was carried out among 250 patients attending the OPD of the Department of Prosthodontics of a dental college in Faridabad, India. Patients having atleast 3 unit fixed prosthesis were interviewed regarding the demographic details, oral hygiene aids used, and dental care utilization. Patient satisfaction questionnaire and patients' evaluation of dentist questionnaire was also administered. Data were statistically analysed using SPSS version 21.0 and significance was set at $p < 0.05$

Results: The overall PSQ score for the present study was 6.58 ± 0.59 . It was higher in males and increased with social class. Most of the patients agreed or strongly agreed with positive dentist conduct. There was a strong positive correlation between patient satisfaction scores and patient agreement with the dentist.

Conclusion: The majority of patients were satisfied with the services received at the facility. Social class was associated with a difference in the level of patient satisfaction

Key words- Dental patients, fixed prosthesis, oral health, satisfaction

Introduction

Patient satisfaction is an important and commonly used indicator for measuring quality in health care.

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Patient satisfaction affects clinical outcomes, patient retention, and malpractice claims. It affects the timely, efficient, and patient-centered delivery of quality health care. Patient satisfaction is thus a proxy but a very effective indicator to measure the success of doctors and healthcare organisations.¹

Patient satisfaction leads to customer (patient) loyalty and improved patient retention.² Patient satisfaction leads to customer (patient) loyalty. It also leads to Improved patient retention – according to the

Technical Assistant Research Programs (TARPs), if one customer is satisfied, the information reaches four others. If there is one unsatisfied customer, it spreads to 10, or even more if the problem is serious.³

There is sufficient evidence to prove that organizations with high customer loyalty can command a higher price without losing their profit or market share. It is now universally accepted that various accreditation agencies like the International Organization for Standardization (ISO), National Accreditation Board for Hospitals (NABH), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), etc., all focus on quality service issues.⁴Satisfying patients should be a key task for all dental providers.

As with general healthcare, patient satisfaction has also been shown to influence compliance and, in turn, treatment quality. This is relevant to all aspects of dentistry: When planning treatment, dentists should take into consideration objectives such as function, structure, esthetics and biology. This requires the clinician to rely on several disciplines in dentistry to deliver the highest level of dental care, which should lead to a higher level of patient satisfaction.⁵

Edentulism and dental disease have been shown to affect patients adversely. Patients with dental disease suffer from an altered self-image.⁶Dento-facial problems have known effects on patient's satisfaction with their dentition as they affect esthetics, performance, and function.⁶

Fixed partial dentures (FPDs) have been the treatment of choice for the replacement of missing teeth for some years. The dental literature has more than 10,000 articles on the topic of FPDs. However, only a few numbers of them deal with patients' perceptions of clinical outcomes and level of satisfaction with FPD treatment. FPD is indicated in short span edentulous arches, presence of sound teeth that can offer sufficient support adjacent to the edentulous space.

Early prosthodontic patient satisfaction studies focused on removable prostheses, while most current studies have focused on implant treatment for the edentulous patient there are few studies for the fixed partial denture. Verbal, numeric, Likert (combined verbal/numeric), and visual analog scales (VASs) are employed routinely to record responses in questionnaire-based studies. No one scale is accepted universally as the gold standard, and all four have been used to assess prosthodontic patient satisfaction.⁷

Patient-evaluated prosthesis satisfaction questionnaires should be simple to understand and short enough to facilitate compliance but broad enough to evaluate treatment objectives. They should gather information without causing coercion (limiting invasive questions, ensuring nonidentity), be easy to use in other study centers, and provide data that is simple to collate. They provide a practical basis for patient evaluated dentistry, which is increasingly being recognized as a necessary consideration of overall prosthodontic success.⁸

An English questionnaire to explore patients' satisfaction with fixed prosthodontic treatment was developed, with reference to guidelines published by the International Epidemiology Association European Questionnaire Group. The questionnaire was formulated from literature-based evidence, nominal group expertise.⁹The general conclusion is that patient satisfaction is a complex and multidimensional phenomenon, much of which remains unclear. Studies to investigate patients' satisfaction were carried out in different countries, including Sweden, Finland, The Netherlands, Croatia, and Singapore, and all concluded that patients' satisfaction with FPD was very high; however such studies have not been carried out in India.¹⁰⁻¹³

Nowadays health care is being transformed from a provider-centered approach to a patient-centered approach in which satisfaction of the patients' needs is part of the definition of quality. Hence, a commitment to providing high-quality service and to

achieving patient satisfaction is important for the oral health care provider. Dental school clinics must also constantly strive to find a balance between meeting the needs of the patient and meeting the needs of the student, all the while knowing that “patients and their satisfaction are critical to the education of the students as well.

Therefore, the present study aimed to investigate the relationship between patients’ satisfaction with Fixed Partial Denture and their perception about their clinicians’ in a dental college, Faridabad, India.

Methodology

A cross-sectional survey was carried out in the patients at a dental college in Faridabad, India. Faridabad is the most populous city and also known as the industrial hub in Haryana, India. It has a geographical area of 742.90 square kilometers. Faridabad District and Division is located on the South-Eastern part of the State. Its dense shape located in the south of Delhi.

The study was conducted after ethical approval from the Institutional Ethical Review Board (IERB), Manav Rachna Dental College, Faridabad.

The sample size was calculated using prevalence data from previous literature, by taking an estimated proportion of (83.3%) from a previous study.¹⁴ Using the given prevalence, 95% confidence interval, absolute precision of 5%, and a design effect of 1, the sample size was calculated to be 223 which was further rounded off to 250.

Non Probability (Convenience) sampling technique was used as patients with recently delivered FPD therapy could be approached easily at the tertiary care hospital. The study was scheduled over five months (September 2019 to January 2020). Patient reporting to the Out Patient Department (OPD) at the Department of Prosthodontics, Manav Rachna Dental College, Faridabad for Fixed Partial therapy were checked for the eligibility criteria. Those found eligible were recruited in the study. Informed

consent was administered to the participants in the Hindi/ English language. The aims and objectives were explained to the patient before taking consent. The study included patients above 18 years of age, partially having at least 3 units fixed prosthesis and giving written informed consent for participation in the study. The exclusion criteria included patients with Implant prosthesis, patients not able to understand the content of the questionnaire, and patients who were mentally and visually challenged and completely edentulous patients.

The investigator (UK) was trained for interviewing the patients in the department on ten patients. The eligible participants were interviewed by a single investigator (UK) and questionnaires were administered using face to face interview method. Baseline data including the demographic details (name, age, sex, occupation, level of education, and annual income), oral hygiene aids (brushing frequency, duration of brushing, oral hygiene aids used), and dental care utilisation (number of missing teeth replaced by FPD, time span of prosthesis) was collected for each subject. The participants were interviewed one week after the treatment.

The Patient Satisfaction Questionnaire

The Patient Satisfaction Questionnaire (Layton D & Watson TR, 2011)⁹ and Patient evaluation of Dentist (adapted from Siqueira GP et al. 2012)¹⁴ were used in the current study.

The Patient Satisfaction Questionnaire (PSQ) was used for the study which assessed the patients’ satisfaction with appearance (2 questions), mastication (1 question), and cleansibility (1 question) of their prostheses. Apart from the above, two questions further assessed the patients’ perceived satisfaction and cost when their prostheses were inserted initially. One question was asked whether they would recommend their friends for treatment. Patients answered the questions using a Visual Analog Scale (VAS). They were directed to cross a 10-cm line at the point representing the appropriate response between

the worst possible satisfaction/discontent and the best possible satisfaction. A single question (yes/no response) sought whether the patients would undergo the same treatment again.

Patient evaluation of dentist questionnaire consisting of 9 close-ended questions, using a 5 point Likert scale (Strongly Disagree to Strongly Agree), was also used to note patients' evaluation of the dentists' conduct.

The data was entered into the computer (MS-Office, Excel 2010) and subjected to statistical analysis SPSS (Statistical Package for Social Sciences) Version 24.0. The values were represented in numbers, percentages, and Mean±S.D. The association between patient satisfaction/ Patient evaluation of dentist and various demographic factors, utilization of dental services, oral hygiene practices was subjected to the statistical test of significance by using Independent Students unpaired t-test, One-way Analysis of Variance (ANOVA). Correlation Analysis (Pearson rho) was also performed. The statistical significance was set at a 5% level of significance. ($p < 0.05$)

Results

The study population comprised of 250 subjects in the age range of 20 to 64 years. A modified Kuppuswamy scale was used to classify the subjects according to their socioeconomic status (SES). The majority of the subjects i.e. 45.2% ($n=113$) belonged to the upper lower class. The majority of the study population (62.4%; $n=156$) brushed only once in the day. A total of 73.6% ($n=184$) brushed atleast for two minutes. Most of the study subjects (64.8%; $n= 162$) wanted replacement of either two or more teeth.

The overall PSQ score for the study participants was 6.58±0.59. The mean PSQ score regarding esthetics was 8.50±1.05 on the day of treatment and 8.73±1.12 on the day of the interview. Regarding chewing capacity, the mean PSQ was 8.25±0.96. (Table 1)

Concerning the questionnaire regarding patients'

evaluation of the dentists' conduct, it was seen that there was a positive response from the patient regarding the dentists' conduct. Most of the patients agreed or strongly agreed with positive dentist conduct. A significant positive correlation was found between various PSQ scores such as esthetics and comfort with phonetics and esthetics on the day of the interview. (Table 2) The mean PSQ score (6.62±0.51) was highest in the age group of 20-34 years and was least in the 35-44 years age group but the differences were not statistically significant ($p= 0.60$). The mean PSQ score was higher in males (6.57±0.63) as compared to females (6.60±0.54) but again the difference was not statistically significant ($p=0.74$). The mean PSQ score increased with raise in social class but this difference was also not significant ($p=0.76$).

On the questionnaire items that concerned the patients' evaluation of the dentists' conduct, statistically significant differences were found for patients' scores for satisfaction with for different answers to question 1 (i.e. 'The dentist I saw thoroughly explained the recommended treatment before it commenced') on comfort in cleaning ($p= 0.026$), cost ($p=0.044$), overall experience ($p=0.0001$) and desire to get treated again ($p = 0.012$). Also, question 2 "I am confident that I received good dental care", question 8 "The dentists I saw were impersonal or indifferent towards me " and question 9 "The dentists I saw answered my questions" were also significantly correlated with patients satisfaction with their denture with regards to chewing capacity and esthetics.

When the patients' evaluation of the dentists' conduct was assessed based on age and gender separately, there was no significant difference among the age groups and gender for any of the nine questions asked. When the patients' perception of dentist conduct was assessed based on SES, it was seen that study subjects from almost all the SES had a positive evaluation of the dentist. However, regarding the dentists' behaviour in answering the questions ($p=0.012$) and carefulness in examining the

Discussion

In health care, considerable efforts are being made to ensure services are effective, beneficial, evidence-based, and acceptable to the patient. In this context, patient satisfaction is considered an essential component of quality improvement plans. Patients' perceptions of their oral health status are important outcomes in prosthodontics. The present study found that 80.9% were satisfied with their prosthesis. This similar level of patient satisfaction with their fixed prosthesis was described in some studies. Kashbur et al.¹⁵ reported that 80.9% patients and Zavanelli et al.¹⁶ reported that 72.58% of the patients were satisfied with their fixed prosthesis. Tan et al.¹⁷ and Kola et al.¹⁸ and an 18-year retrospective study by Napankangas et al.¹⁹ observed very high levels of satisfaction in relation to functional aspects of fixed prosthesis like aesthetics, mastication, speech, and comfort levels. This high satisfaction level could be attributed to the fact that fixed restorative treatment might have restored the feeling of "normality" to the patient, as he/she felt the prosthesis more like a natural tooth as observed by Al-Quran et al.²⁰

Geiballa et al.²¹ described that almost half of their patients had noticed an improvement in their masticatory function while in the present study, around one-fifth of the group were not happy with their masticatory function. Thus, patients have to be aware that having regular checkups after receiving their prosthesis is important to avoid additional impairment to their masticatory ability. Geiballa et al.²¹ also reported that 20% of their patients were not satisfied with the esthetic aspect of their prosthesis. In the present study, only 14.7% found their fixed restorations esthetically unpleasant. Their dissatisfaction was related to the mismatch in color with the natural teeth (9.1%), mismatch of shape and size, or improper artificial tooth position in the fixed prosthesis (4.4%) whereas 1.2% of the participants were told by other people that their prosthesis looks not good. Therefore, the clinician needs to pay great attention to select the proper shade of the prosthetic

teeth, particularly where anterior teeth are involved. Another important aspect is matching the position and angulation of the prosthetic teeth and natural teeth. In the present study, a significant positive correlation was found between various PSQ scores such as esthetics and comfort with phonetics which was similar to the study done by Banerjee et al which reported that more than 90% of the individuals had no phonetic alteration with their FPD.²²

The high percentage of males among the investigated sample suggests that males were more concerned about getting a replacement to their missing teeth may be due to financial independence deciding to get the treatments done as most females were financially dependent on their male relatives or spouses to bear the cost of the treatments which is not as per the several other studies done abroad where females were more concerned about replacement of missing teeth.

Considering the importance of the patient/professional relationship to the success of prosthodontic therapy a questionnaire was used to assess an important component of this relationship (i.e. the patients' evaluation of the dentists' conduct), which showed a clear predominance of positive ratings for all questions. The most satisfactory attribute of dental care in this study was the communication skills of treating students. Patients were also highly satisfied with the quality of care, particularly the interpersonal aspects of care. Karydis A et al.²³ concluded that the largest quality gap was also observed in characteristics regarding responsiveness which was found positive in this study. It enables dentists to determine a proper diagnosis and treatment plan empowering patients to take responsibility for their health leading to better patient education, adherence with treatment, and better treatment outcomes.

Dewi FD et al.²⁴ concluded that priority should be given to the dentist's communication and dental assistant's knowledge of patient's needs to enhance the service quality. A proper explanation of treatment

procedures is an important aspect of the patient-dentist relationship and in this study was reported to be very high. Aldosari MA et al.²⁵ also reported that patient satisfaction is increased with friendly and understanding staff. Moreover, meeting patient expectations by taking time to understand the needs and giving the right instructions is associated with higher satisfaction, and the fact that patients were highly satisfied with the clinician's communication abilities indicates that clinician's in this facility pay proper attention to explaining treatment options/procedures to patients.

In the current study, patients are capable of differentiating between technical (quality, interpersonal aspects) and non-technical (aesthetics) aspects of care and improving satisfaction is more about improving quality and interaction and communication with providers rather than amenities. Based on these findings, patient experience measures provide important information, are the best judges to evaluate some aspects of quality, and their viewpoint is the keystone of patient-centered care. Therefore, healthcare quality cannot be defined as seen from healthcare professional perspectives. It is a distinct, complementary aspect of quality that can be used along with conventional clinical measures. Thus, the null hypothesis was defeated in the present study.

However, few limitations of this study included that since the sample was a convenience sample, its external and generalizability can be affected, and also the satisfaction of current patients was assessed rather than former patients, responses could have been varied if the former patients were also assessed.

Conclusion

Overall, the results of this study indicate that the majority of the patients were satisfied with the services received and the patient's assessment of care may be influenced by several other factors that extend beyond the actual care received. In the present study, social class was associated with a difference in the level of satisfaction with some aspects. Dental students must

be aware of socio-demographic and health status disparities in satisfaction identified in the population receiving care at this dental faculty. Such information may help them to target improvement efforts.

The information obtained from this study could be useful in establishing new strategies to improve patient experiences with the dental services delivered. One effective means for addressing patients' concerns is to focus on how they perceive care. Moreover, the objective of patient-centered care could not be achieved without gathering data on patient satisfaction and responding to it appropriately. The study provides important information on important aspects of quality from patients' perspectives and identifies areas that may need improvement.

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