



ISSN Print: 2394-7489
ISSN Online: 2394-7497
IJADS 2018; 4(1): 91-93
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www.oraljournal.com
Received: 18-11-2017
Accepted: 19-12-2017

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Evaluation of patient satisfaction for retention, masticatory efficacy, aesthetics and comfort for Removable Partial denture: A Retrospective study

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Abstract

Background: The prevalence of use of the all-acrylic RPD among adults is very high as all-acrylic RPD is more affordable and easier to fabricate. However, some disadvantages of using the all-acrylic resin dentures are increased risk of developing caries, gingivitis and periodontal disease relative to other RPD frameworks.

Aim of the study: To evaluate patient satisfaction for retention, masticatory efficacy, aesthetics and comfort for Removable Partial denture.

Materials and methods: The present study was conducted in the department of prosthodontics of the dental institution. For the study sample, we contacted 50 patients from the previous medical records of 5 years who got treatment for partially edentulous ridge with removable partial denture. The patients were recalled. On the day of reporting at department, the patients were asked to fill up a questionnaire. The acceptance of RPD was marked as excellent, good or bad.

Results: We observed that majority of patients reported excellent aesthetics, comfort, hygiene, masticatory efficacy and retention. 11 patients in total reported bad experience with Removable partial denture.

Conclusion: The treatment for partially edentulous ridge with Removable partial denture is satisfactory for majority of cases. Only few cases reported to be having bad experience with RPD.

Keywords: RPD, acrylic, denture, retention

Introduction

Individuals seek replacement of their missing teeth to improve their appearance, speech, social confidence and self-esteem, ability to chew more comfortably and to preserve the remaining natural teeth. Among Indians, aesthetics has been indicated as a major reason for replacing missing teeth. Functional and aesthetic restoration of partially edentulous mouth may be done using a variety of treatment options, each with its advantages and disadvantages [1, 2]. The options are removable partial dentures (RPDs), fixed partial dentures and dental implants. The factors that may affect the choice of prosthesis used are the periodontal status, aesthetic requirements, cost, anatomical constraints and patient's acceptability [3, 4]. RPDs outnumber conservative implant tooth replacements because of their accessibility to lower socioeconomic groups in whom the highest rates of tooth loss occur.⁵ RPDs may be made with cast metal, acrylic resin with or without wrought metal component and acrylic resin with some cast units and those made with thermoplastic resin. The use of all-acrylic RPDs in the replacement of missing teeth varies with countries, with more frequent use in developing countries. The prevalence of use of the all-acrylic RPD among adults is very high as all-acrylic RPD is more affordable and easier to fabricate. However, some disadvantages of using the all-acrylic resin dentures are increased risk of developing caries, gingivitis and periodontal disease relative to other RPD frameworks [6, 7] There is also difficulty in choosing a suitable path of insertion while maintaining close adaptation to the tissues in the presence of soft and hard tissue undercuts. In addition, acrylic dentures are made in thicker sections to compensate for its low impact strength, and this makes them bulky [8] Hence, we planned the study to evaluate patient satisfaction for retention, masticatory efficacy, aesthetics and comfort for Removable Partial denture.

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Materials and methods

The present study was conducted in the department of prosthodontics of the dental institution. The protocol of the study was approved from the ethical committee of the institute prior to starting the study. For the study sample, we contacted 50 patients from the previous medical records of 5 years who got treatment for partially edentulous ridge with removable partial denture. The patients were recalled. All the patients responded and visited the department on the desired date. The protocol and procedure of the study was explained to the patients and an informed consent was obtained from them. The age of the patients ranged from 18 to 60 years. It was made sure that each patient had either one of the maxillary or mandibular RPD for the evaluation. On the day of reporting at department, the patients were asked to fill up a questionnaire. The acceptance of RPD was marked as excellent, good or bad. The patients were asked to rate the acceptance of RPD for aesthetics, comfort, masticatory efficacy and retention. After completion of questionnaire, the patients submitted them to the operator. The data was analyzed and data was tabulated for further evaluation.

The statistical analysis of the data was done using SPSS program for windows. Student's t test and chi square test were used for checking the significance of the data. The statistical significance was predefined at $P < 0.05$.

Results

Table 1 shows the evaluation of aesthetics, comfort, hygiene, masticatory efficacy and retention according to patient. We observed that majority of patients reported excellent aesthetics, comfort, hygiene, masticatory efficacy and retention. 11 patients in total reported bad experience with Removable partial denture. The results were statistically significant ($P < 0.05$) [Fig 1].

Discussion

In the present study, we assessed the patient's satisfaction to the Removable partial denture after 6 years. We observed that majority of patients reported excellent experience with RPD. Very few patients reported bad experience. The patients were highly satisfied with respect to aesthetics, comfort, hygiene, masticatory efficacy and retention. The results were found to be statistically significant. The results were compared with previous studies and results were consistent with previous studies. Shala KS *et al* assessed patient's satisfaction with removable partial dentures (RPDs), as retention, chewing ability, aesthetics during the observation period. A total of 63 patients with RPDs, participated in this study. The following data was collected: Kennedy classification, denture design, denture support, satisfaction and success of RPD. The results showed that 73.6% of patients were wearing RPD for the first time and were finally satisfied. According to the denture support of RPDs, clasp-retained quadrangular RPDs were 100% effective, followed by triangular dental support 81% and linear dental support 47.7%. Comparison of RPDs with attachment with RPDs with clasps assessed through Fisher exact test, confirmed statistically significant difference, despite retention; however, chewing ability and aesthetics showed no statistically significant difference with X 2 test on patient's satisfaction with RPD with or without attachment. They concluded that patients often would prefer not showing the anterior buccal clasps of RPD, therefore are generally satisfied more with RPD with attachment based on level of retention, chewing ability and aesthetics. Knezović Zlatarić D *et al* examined patients' satisfaction with RPDs in relation to

some socio-economic variables, patients' habits of wearing and cleaning RPDs, comfort of wearing RPDs and different RPDs characteristics. A questionnaire was devised for the purpose. Two hundred and five patients were required to assess satisfaction with RPDs. They graded RPDs, depending on the level of satisfaction, on scale ranging from 1 to 5. A dentist determined Kennedy classification, material and denture support, denture base shape, number of missing teeth and evaluated denture construction. Majority of the patients were satisfied with the prosthesis. The patients of a higher education level gave lower grades ($P < 0.05$) to aesthetics of maxillary RPDs. Almost half of the patients were wearing RPDs during the day. Most of the patients cleaned RPDs three times a day. A significant difference was found between the patients' grades for comfort of wearing mandibular RPDs and number of missing teeth and between hygiene of mandibular RPDs and habits of cleaning them. Majority of the patients treated with RPDs were satisfied with the prosthesis. Dissatisfaction was related to mastication, esthetics, number of missing teeth and maintenance of oral hygiene^[9, 10]

Bilhan H *et al* evaluate the frequency and type of prosthetic complications in relation to type and properties of removable dentures and to investigate the influence of these complications and several data about the existing dentures on patient satisfaction. Ninety nine patients (44 males and 55 females) wearing removable dentures have been included in the study. The complications of the patients were recorded; patient satisfaction was determined with a Visual Analog Scale (VAS) and the relationship of complications and patient satisfaction with several data about the dentures such as denture age, type of denture, centric relation and vertical dimension was investigated. Need for addition of artificial teeth for dentures with correct centric relations was found to be significantly lower than dentures with wrong centric relations ($P < 0.01$). Loss of retention, ulcerations and high vertical dimension affected the VAS chewing ability scores negatively and ulcerations affected the VAS phonation scores negatively. Considering the results of this study, it can be concluded that loss of retention, ulcerations and high vertical dimension caused patient dissatisfaction. Additionally, dentures with wrong centric relations caused need for addition of artificial teeth. Zlatarić DK *et al* studied patient's satisfaction with their partial dentures in relation to some socio-economic variables. Patient's satisfaction with denture retention, speech, aesthetics, comfort of wearing dentures, chewing ability was also studied in relation to different denture classification, construction, material, denture base shape (major connectors), denture support and the number of missing teeth. A total of 165 patients, 59 males and 105 females between 38 and 87 years took part in this study. A questionnaire, devised for a purpose of the study, was divided into three parts. In the first part, patients answered questions about age, gender, marital status, education, general health, socio-economic status, self-supporting life, period of tooth loss and number of previous denture experiences and in the second part, patients graded their partial dentures, depending on the level of satisfaction, by using a scale from 1 to 5. In the third part a dentist determined Kennedy classification and their modifications, denture material and denture support, denture base shape and the number of missing teeth and graded a denture construction. Influence of these factors on patient's satisfaction was analyzed. A majority of the examined patients were satisfied with the partial prosthesis, but a small amount of dissatisfaction existed. More than half of them scored all the examined parameters to the best score

category. Considering chewing with lower partial dentures, women were more satisfied than men. Patients with more missing teeth gave lower grades for the comfort of wearing dentures. Patients of higher education gave lower grades for

the aesthetics. Patients were not satisfied with speech if the dentist graded a construction of a lower partial denture low. Dissatisfaction was related to mastication, aesthetics, number of missing teeth and ability of speech ^[11, 12]

Table 1: Assessment of esthetics, comfort, hygiene, masticatory efficiency and retention according to patient

	Esthetics	Comfort	Masticatory efficacy	Retention	p-value
Excellent	24	28	30	26	0.001
Good	18	11	12	16	
Regular	6	8	6	4	
Bad	2	3	2	4	
Total	50	50	50	50	

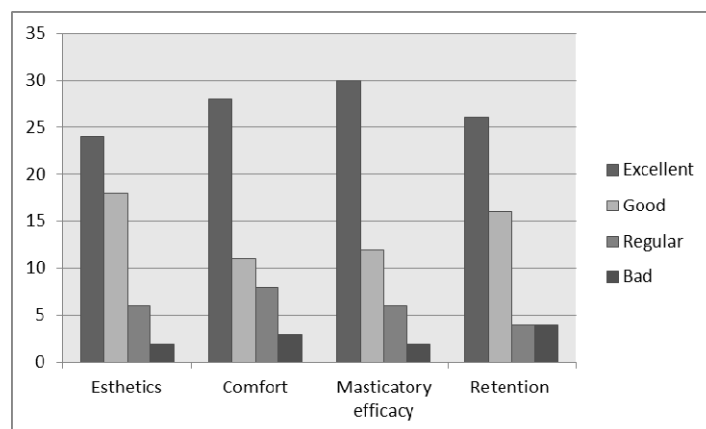


Fig 1: Showing assessment of esthetics, comfort, hygiene, masticatory efficiency and retention according to patient

Conclusion

From the results of present study, we conclude that the treatment for partially edentulous ridge with Removable partial denture is satisfactory for majority of cases. Only few cases reported to be having bad experience with RPD.

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