

# Post-Insertion Complaints of Removable Partial Dentures and Their Association with Age and Gender

Post-Insertion  
Complaints of  
Removable  
Partial Dentures

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## ABSTRACT

**Objective:** To figure out the presence or absence of post-insertion complaints of removable partial dentures and their association with age and gender.

**Study Design:** A retrospective study.

**Place and Duration of Study:** This study was conducted at the Sir Syed College of Medical Sciences (dental section) for Girls and Dental OPDs of Dow University of Health Sciences, Karachi in December 2022 till January 2023.

**Materials and Methods:** 140 participants were included in this study in which 66 were males and 74 females. All the participants included in this study were using removable partial dentures for more than 3 months' time period. Presence or absence of post-insertion complaints with removable partial dentures were recorded including details regarding age and gender. Statistically the data was analysed using version 24 of SPSS. To observe the association of presence or absence of complaints with age and gender, chi-square was applied. Statistically value of  $p < 0.05$  was considered significant.

**Results:** Majority of the participants complained for difficulty in mastication i.e. 47.1% while 42.9% complained about pain and soreness. Chi-square showed statistically significant association of fracture of artificial teeth with age factor while speech problems and aesthetic concerns were statistically significant with gender.

**Conclusion:** Complaints of removable partial dentures and their rectification is one of the prime concern which needs to be addressed. Basic reason of wearing a prosthesis can be fulfilled if it is devoid of complaints.

**Key Words:** Complaints, removable partial denture, age, gender

**Citation of article:** Mehtab B, Jabeen B, Aslam K, Bajwa WN, Kumar B, Lone MA. Post-Insertion Complaints of Removable Partial Dentures and Their Association with Age and Gender. Med Forum 2023;34(5):44-47.

## INTRODUCTION

Masticatory system including teeth and associated components plays an important role in a person's daily routine for proper functioning.<sup>1</sup> Decreased masticatory ability may lead to alterations in dietary selection leading to risks to an impaired and diminished nutritional status.<sup>2</sup>

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Received: February, 2023

Accepted: March, 2023

Printed: May, 2023

Tooth loss is mainly caused by dental caries and periodontitis.

Loss of dentition not only creates problems in mastication, aesthetics and speaking but also creates a negative effect on quality of life which has to be restored with a prosthesis.<sup>3</sup> It has been observed that percentage of partially dentate adults is increasing because of increased life expectancy along with a shift from total tooth loss towards partial edentulism.<sup>4</sup>

Management of people presenting with partial tooth loss is a common duty for dentists.<sup>5</sup> Information about patient's use of removable partial dentures could help the clinicians and patients as they make choices about prosthodontic treatment.<sup>6</sup> There are several treatment modalities for rehabilitation of partial edentulism, such as, implant-supported prosthesis, tooth-supported bridges and removable prosthesis, from which removable prosthesis are considered the easiest and economic treatment option.<sup>7</sup> The need for removable prosthesis is increasing due to betterment of life observed in older population.<sup>8</sup>

Removable partial denture is used for partially dentate patients who desire to replace missing teeth for functional or aesthetic reasons. There could be several problems associated with this type of prosthesis<sup>9</sup> but

they are not costly and patient can discontinue with this sort of treatment at any time.

The main purpose of this study was to gain knowledge about the presence or absence of post insertion complaints of removable partial dentures and their association with age and gender.

### MATERIALS AND METHODS

A retrospective study was conducted in which 140 participants were included who were wearing removable partial dentures for more than three months' time period. Out of 140 participants 66 were males and 74 were females. Purposive sampling technique was used through which participants were selected based on inclusion and exclusion criteria. This study was carried out at Sir Syed College of Medical Sciences (dental section) for Girls and Dow University of Health Sciences (Dental OPDs), Karachi in December 2022 till January 2023. Self-administered questionnaire was designed through which data was collected. Detailed medical and dental history was also obtained and data regarding age and gender was also collected. Verbal consent was taken from each patient. Data was analysed on SPSS v 24. Association of age factor (independent variable) having categories i.e. less than 50 years (category 1) and greater than 50 years (category 2) with presence or absence of complaints (dependent variables) was assessed through chi-square. To observe the association of gender (independent variable) with categories i.e. male (category 1) and female (category 2) with presence or absence of complaints (dependent variables) was also assessed by chi-square. Statistically, p-value less than 0.05 was considered as significant. Following prosthodontic complaints<sup>9</sup> were recorded as present or not present.

1. Retention loss
2. Fracture of artificial teeth
3. Presence of ulceration
4. Denture base fracture
5. Difficulty in mastication
6. Fractured clasp
7. Difficulty in speech
8. Pain and soreness
9. Aesthetic concern

**Inclusion Criteria:**

1. Acrylic and cast partial denture
2. All Kennedy's classes with or without modifications
3. Single arch or both arches.
4. More than 3 month time period with present prosthesis

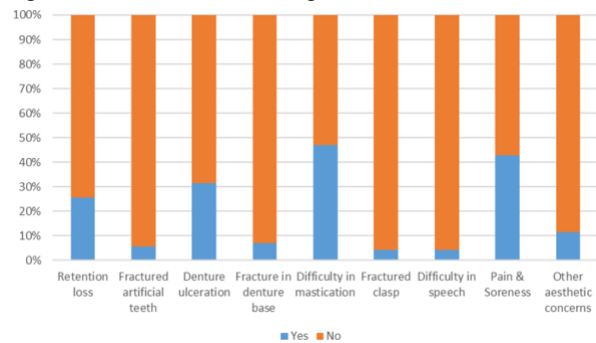
**Exclusion Criteria:**

1. Unilateral partial dentures
2. Any restoration in upper and lower arch
3. Any dental treatment (other than prosthodontic treatment) required at present
4. Any extra oral lesion

5. Any systemic condition.

### RESULTS

Graph 1 shows that most of the patients approximately 47.1% presented with the complaint of difficulty in mastication. 42.9% complained of pain & soreness, 31.4% complained of denture ulceration, 25.7% had complaint of their dentures being loose. 11.4% had aesthetic concerns, 7.1% complained of fracture in denture base, 5.7% presented with fractured artificial teeth, while 4.3% of the patients had speech problems and fractured clasps. Chi square test showed statistically significant association of fracture of artificial teeth with age factor (table No. 1). Speech problems and aesthetic concerns also had statistically significant association with gender (table No. 2.)



**Graph No. 1: Frequency of types of complaints**

**Table No. 1: Association of age factor with presence or absence of complaints**

Age factor	Complaints	p-value
(< 50 years) (> 50 years)	Loss of retention	p>0.05
	Fractured artificial teeth	p<0.05*
	Denture ulceration	p>0.05
	Fracture in denture base	p>0.05
	Difficulty in mastication	p>0.05
	Fractured clasp	p>0.05
	Difficulty in speech	p>0.05
	Pain and soreness	p>0.05
	Other aesthetic concerns	p>0.05

p<0.05\*

**Table No. 2: Association of gender with presence or absence of complaint**

Gender	Complaints	p-value
(Male) (Female)	Loss of retention	p>0.05
	Fractured artificial teeth	p>0.05
	Denture ulceration	p>0.05
	Fracture in denture base	p>0.05
	Difficulty in mastication	p>0.05
	Fractured clasp	p>0.05
	Difficulty in speech	p<0.05*
	Pain and soreness	p>0.05
	Other aesthetic concerns	p<0.05*

p<0.05\*

## DISCUSSION

Incomplete dentition can be seen in a huge number in population of Pakistan. Some of them would like to have a prosthesis while others would be satisfied without feeling the need of any restoration. Consuming of removable dentures is still widely used due to it's an economic and easy treatment procedure among the patients who need partial denture treatment but heavily influenced by patient satisfaction.<sup>10</sup>

Ease in design of removable partial denture not only improves mechanical and biological factors but also enhances general satisfaction.<sup>11</sup> It would be expected that patients having a previous experience of denture would tolerate them better. Dissatisfaction with the removable partial denture increases as the complaints with the denture such as loss of retention and stability are increased which in turn results in residual ridge resorption leading to difficulty in mastication. These complaints though being present with the removable partial denture but still widely used as a replacement option for natural dentition. Studies have indicated more affirmative results by regular recall appointments, careful planning, prosthetic adjustments and patient instructions.<sup>12</sup>

Removable partial dentures are completely dependent on teeth, bone and mucoperiosteum for their support.<sup>13</sup> It was revealed that most of patients had complaint of difficulty in mastication which was relieved later on by adjusting the denture. This finding is in accordance to the study of Goguta et al<sup>14</sup> but against the study of Malik et al<sup>9</sup> in which majority of the patients had retentive problems in their partial dentures. This difficulty in mastication can lead to pain and soreness of oral mucosa, which was observed as the second most common presenting complain in this study.

As shown in this study that fracture of denture base was high in percentage when compared to other mechanical complaints such as clasp failure and fracture of artificial teeth. Fracture of denture base is considered as a primary reason of failure of removable prosthesis.<sup>15</sup> Percentage of these failures may vary in researches' due to different assessment methods or time periods. There is no standardization regarding the time period after which these complaints should be evaluated. Different researchers<sup>9,14</sup> have used different time periods for assessment of different types of complaints.

In this study fracture of artificial teeth was statistically significant with age factor while speech and aesthetic factors with gender. This observation is contrary to the finding of Shams et al<sup>10</sup> and reason of difference could be the method of assessment and different time intervals. In age factor (independent variable) none of the participants who were in the category of below 50 years of age reported fracture of artificial teeth however 8 participants reported fracture of teeth who were in the category of above 50 years of age. There are several

reasons of breakage of artificial teeth<sup>16,17</sup> and accidental drop of the prosthesis can be one of the reason which is observed with increasing age because of low motor skills.<sup>18</sup>

As per gender distribution only 6 males reported problem in speech but none of the females had a problem in speaking. However aesthetic was a concern for 14 females with 2 males reporting the same problem. Aesthetics factor is usually a matter of more concern in females because females are treated with more removable partial dentures as also shown in the study of Moreno et al.<sup>19</sup> This study is not a representative of whole population. The results encountered from this research could be a mean to help people understand the consequences of faults in removable partial dentures design and then how to deal with such circumstances.

## CONCLUSION

Removable prosthesis is one option for treating patients with no teeth and providing such a prosthesis needs professional skills. It is imperative that patients should be delivered with an appliance which is devoid of faults. Rectification of these faults not only improves the functioning of the prosthesis but also enhances confidence in the provided treatment.

### Author's Contribution:

Concept & Design of Study:	Beenish Mehtab
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Revisiting Critically:	Beenish Mehtab, Bushra Jabeen
Final Approval of version:	Beenish Mehtab

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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