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**ASSESSMENT OF PERIODONTITIS IN REMOVABLE PARTIAL DENTURE WEARERS IN DISTRICT BUNER**

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Murad Ali<sup>1</sup>, Shafi Ullah<sup>2</sup>, Muhammad Nauman<sup>3</sup>**ABSTRACT:****OBJECTIVES:**

Periodontitis is a severe gum infection that can lead to loss of tooth and other health problems. The present study attempts to evaluate the association of periodontitis with removable partial denture.

**METHODOLOGY:**

A total of 100 subjects visiting the dental department of DHQ hospital Buner, consisting of 65 males and 35 females with age range of 30-60 years having periodontitis were investigated.

**RESULTS:**

The subjects wearing removable partial dentures showed increased prevalence of periodontitis irrespective of age and sex. Lack of awareness and socioeconomic status of the study population were the main contributing factors.

**CONCLUSION:**

The study concludes a strong association of periodontitis and removable partial dentures. Proper and regular maintenance of the oral and denture hygiene can prevent periodontal diseases.

**KEYWORDS:** Periodontal Diseases, Removable Partial Denture, Oral Health, Epidemiology

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**INTRODUCTION:**

Periodontitis is a chronic inflammatory disease that is initiated by the accumulation of dental plaque biofilm, within which microbial dysbiosis leads to a chronic, non-resolving and destructive inflammatory response. The tissue destruction or periodontitis (i.e. breakdown of periodontal ligament, pocketing, and alveolar bone resorption) is primarily caused by the host inflammatory response to the bacterial challenge presented by the biofilm. Healthy people normally have hundreds of different types of

bacteria in their mouth. Periodontitis is typically caused by poor dental hygiene. The body's immune response to this bacterial growth leads to inflammation in the gums. The attachment of the gum to the root of a tooth is disrupted over time, and a periodontal pocket (gap) may form between the gum and root. Harmful anaerobic bacteria colonize in the pocket and multiply, releasing toxins that can damage the gums, teeth, and supporting bone structures<sup>1-3</sup>. A removable partial denture (RPD) is a denture for a partially edentulous patient who desires to have replacement teeth for functional or aesthetic reasons and who cannot have a bridge (a fixed partial denture) for any reason. The patient can remove and reinsert it when required without professional help. Conversely, a "fixed" prosthesis can and should be removed only by a dental professional<sup>4,5</sup>. The two common types of removable partial dentures are cast metal partial dentures and acrylic flippers. Removable partial

dentures are an alternative treatment for the restoration of edentulous areas. The insertion of partial dentures in the mouth has the potential for altering the oral environment and causing further damage, especially to the abutment teeth, to which the clasps are attached. The partial dentures in the mouth increase plaque formation. Plaque is an essential factor in the etiology of periodontitis. It has also been shown that gingivitis and periodontitis can be satisfactorily treated if plaque control is established; it has been shown that removable partial dentures adversely affect the patient's periodontal condition. Longitudinal studies indicate that removable partial dentures have been associated with increased gingivitis, periodontitis, and abutment mobility<sup>6-9</sup>. The aim of this study was to evaluate the influence of removable partial dentures (RPD) on the periodontal health. This study was carried out to describe the periodontal status and to analyze the association of periodontal disease with the wearing of removable partial dentures in the population of district Buner.

#### METHODOLOGY:

This cross-sectional study consisting of a representative sample of 100 individuals aged between 30-60 years was carried out from September 2019 to March 2020. The data was collected from the dental department of DHQ hospital, District Buner by clinical examination in accordance with the World Health Organization Basic Methods Criteria, which included the community periodontal index and dental prosthesis examination. Each patient with a legal willing consent was included in the study and a particular questionnaire was used designed to obtain particular data needed for getting a clear picture of dental Periodontal Index and dental prosthesis. The collected data was analyzed using SPSS version 24.

#### RESULTS:

A total of 100 subjects were evaluated in this study and the male to female ratio was 65:35 (Table 1). Periodontal status showed the presence of calculus in both genders. Subjects wearing removable partial dentures showed increased prevalence of periodontal pocket depth and attachment loss irrespective of age group, gender, educational qualification and poor oral hygiene.

**Table 1: Distribution of Patients on the Basis of Age and Sex**

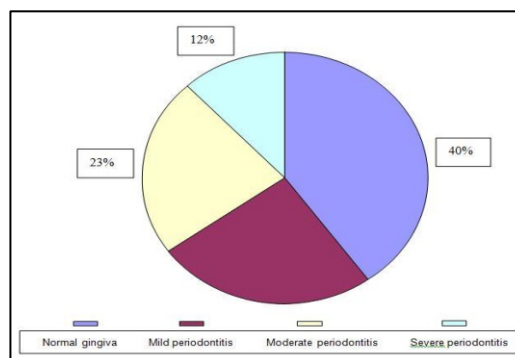
Age Group	30-39	40-49	50-60	Total
Males	13	22	30	65
Females	10	20	5	35
Total	23	42	35	100

60% of the patients with denture age more than six months were using a toothbrush once a day and 40% were not brushing their teeth. Mostly the denture age of patients was between 1 to 3 years. Table 2 shows the types of residual dentition at the time the patients were provided with a denture. A total of 27 dentures with bilateral distal extension saddles were made, 15 for lower jaw and 12 for upper jaw. 19 patients were supplied with a denture with a unilateral distal extension saddle, 9 patients in the upper jaw and 10 lower jaws. 24 patients were supplied with unilateral anterior edentulous and 10 patients were supplied with anterior bilateral edentulous area.

**Table 2: Classification of Edentulous Areas According to Applegate-Kennedy System for the Thirty Patients**

Classification	Class 1	Class 2	Class 3	Class 4	Total
Upper Jaw	12	9	13	5	39
Lower Jaw	15	10	11	10	51
Total	27	19	24	15	100

Figure 1 shows the periodontal status of the abutment tooth. 40% of the patients have normal gingiva. 25% patients have mild periodontitis, 23% of patients have moderate periodontitis and 12% patients have severe periodontitis.



**Figure 1: Periodontal Status of Abutment Tooth**

Table 3 shows that 40% of the patients have grade 1 mobility, 32% patients have grade 2 mobility and 28% of the patients have grade 3 mobility.

**Table 3: Grades of Mobility**

Grade of Mobility	Total	Percentage
Grade One Mobility	40	40%
Grade Two Mobility	32	32%
Grade Three Mobility	28	28%
Total	100	100%

The study further revealed that 60% of the subjects were using toothbrushes, 30% were using miswak and 10% responded to having no teeth care habits.

#### DISCUSSION:

Oral health is an essential component of general health. Good oral health is considered to play a role in chewing, aesthetics and phonetics as well as in personality development. According to the American Dietetic Association 1986, good oral health means chewing properly and food is converted into required size which can be absorbed and directly goes to the cells to produce the energy required<sup>10</sup>. Periodontitis is initiated and perpetuated by a small group of predominantly gram- negative, anaerobic or microaerophilic bacteria that colonize the subgingival area. Indeed, at the 1996 World Workshop on Clinical Periodontics, the relevant working group concluded that most human periodontitis is caused by *Porphyromonas gingivalis*, *Bacteroides forsythus* and *Actinobacillus actinornycteterncornitans*<sup>11</sup>. RPD design plays an important role in the state of the periodontium. Appropriate design and good oral hygiene may decrease the appearance of periodontal disease<sup>12</sup>. In our study, we have assessed education, motivation and awareness of the patients during the stage of RPD's construction. Although minor differences could be regarded as the initial stage in periodontal changes, which is important to diagnose and halt further destruction. These results could be attributed to planned prosthetic treatment, so with an appropriate design and good oral hygiene can reduce changes that may affect periodontal disease of abutment teeth. The results indicate that RPD's wearers should be motivated for extra

adequate oral hygiene instructions. In order to eliminate the periodontal damages caused by RPD's regular recall system is strongly recommended<sup>13-17</sup>. In this study 100 patients visiting the DHQ Hospital Buner were examined and the ratio of male to female 65:35. The reason for high numbers of males was the social norms and if we look at earlier studies conducted in the same cultural area, similar trends for male relative to females were found. The majority of the population living in this area doesn't take care of oral hygiene wear of RPD and also do not visit the dental care units<sup>18</sup>.

#### CONCLUSION:

The study concludes that lack of oral hygiene and health care management is the main cause of Periodontitis. With carefully planned prosthetic treatment and adequate maintenance of the oral and denture hygiene, we can prevent periodontal diseases. Regular recall of appointments plays an important role in preventing changes of abutment teeth and related problems.

**CONFLICT OF INTEREST:** None

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