

## Evaluation of the Hygiene Habits of Removable Partial Denture Wearer Patients Visiting The dental Faculty- Universiti Sains Malaysia

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**Abstract:** It has been observed that patients wear removable partial dentures (RPD) accumulate more plaque on the abutment teeth. Likewise the tissue and polished surfaces of partial dentures become covered with plaque layer. The objective of this study to investigate the hygiene behaviours of partial dentures worn by some patients who visited the department of Prosthodontics in Dental Faculty, Universiti Sains Malaysia (USM). A total of 49 patients were randomly selected from the patients. The results highlight the poor hygiene condition of the partial dentures used by those patients. Nine (18.9%) had clean partial dentures. Thirty-seven (75%) had plaque accumulation over both tissue and polished surfaces of the partial dentures. Whilst, partial dentures of three (6.1%) of the patients had much visible calculus on the polished surface of the partial dentures. The significance of these findings is that other situations need to be current to enhance and progress of denture stomatitis.

**Key words:** Denture Stomatitis • Calculus • Hygiene Habits • Oral Care • Partial Denture • Plaque

### INTRODUCTION

Most of people, those loss of part or all natural teeth leads to deficiency (tooth loss, loss of alveolar bone), disability in chewing and speaking and broader social effects such as minimizing the contacts with other people [1,2]. In quite a number of cases partial dentures or complete dentures are often incorporated into the treatment plan to be able to meet this goal [3]. It has been showed that patients provided with RPD prosthesis enhanced more plaque accumulation on the abutment teeth [4]. Likewise the tissue and polished surfaces of dentures become coated with plaque layers. Increased of plaque accumulation by day and night wear of dentures both on abutment teeth and denture [5]. Various studies have shown that the patients in denture wearers who are not instructed properly for hygiene and maintenance of their dentures, show poorly maintained denture, accumulation of soft debris and calculus and Denture Induced Stomatitis (DIS) [6-8]. Hence, correct use and care of the prosthesis are of great importance to the

patients not only for aesthetics and functions but also for the health of supporting tissue and appropriate conservation of the prosthesis itself. In other instances, patients do not follow up regularly to the dentists for control and maintenance of their dentures at the appropriate intervals [9]. Thus it's the responsibility of the treating dentist to guide their patients properly about denture cleaning and appropriate cleansers to be used. The aim of this study was to evaluate the hygiene habits methods of partial denture patients who visited the department of Prosthodontics in dental faculty, USM by using a specific questionnaire [10]. as a research tool.

### MATERIALS AND METHODS

The study was carried out after approving the ethical clearance from Institutional Ethical committee of dental faculty, USM. The study was employed on 49 patients who were 20-50 years old who visited the department of Prosthodontics in dental faculty, USM. This was part of this study on 124 patients (male and female) who were

randomly selected to participate in this study regardless of whether he or she is dependent or independent, handicapped, dentate and if only he is wearing a partial denture. All partial denture wearers (49) were examined. The, intra-oral examination and examination of RPD of participants were carried out concurrently. Initially the demographic data of participating individuals were collected and he or she was examined by one operator using a mouth mirror, a blunt probe of diameter 0.5mm and natural light. The denture hygiene index ranged from seeing no plaque when a probe is run gently on the tissue and polished surfaces of a partial denture to calculus on a both surfaces of partial denture. SPSS version 20 (IBM) was used for statistical analysis.

## RESULT

Among the participants 18 were females and 31 were males. Out of the 49 partial denture wearers 33 had partial dentures in the upper jaw and 16 had partial dentures in the lower jaw. Nine (18.9%) had clean partial dentures with no debris or plaque on the tissue and polished surfaces of the partial dentures when the probe was run over both surfaces of the partial dentures. Whilst thirty-seven (75%) had plaque seen with the naked eye and was detected by the use of a dental probe run over both surfaces of the partial dentures and classified as having very poor hygiene condition. Furthermore, partial dentures of three (6.1%) of the patients had much visible calculus on the polished surfaces of the partial dentures (Figure 1).

## DISCUSSION

Dental plaque is a complex biofilm that accumulates on the hard tissues like teeth, denture, in the oral cavity

and patients provided with PRD have a tendency to accumulate more plaque on abutment teeth. [2] Calculus promotes plaque accumulation and retention of irritant bacteria deposits which are injurious to the periodontal tissues [11]. Both oral hygiene and denture hygiene are of outmost importance in the prevention of caries and periodontal disease of abutment teeth and consequently the prevention of loss of these teeth [12]. In this study, seventy five (75%) of the individual examined, had plaque seen with the naked eye and demonstrated denture poor hygiene and 6.1% of them had much visible calculus on their denture. Calculus accumulation on dentures is a sign o of oral hygiene disregard. Previous study in this matters confirmed that poor oral hygiene and poor periodontal health [13]. Partial denture surface irregularities and it component like clasp particularly encourage this. Despite an outward smooth appearance, these appliances have pockmarked surface when viewed under microscopic magnification [14]. Furthermore, for Polymethylmethacrylate denture base materials even when it was properly polymerized and polished. These microporosities absorb oral fluids creating a favourable medium for the growth of microorganisms [15-21]. The dental plaque formed on teeth and dental materials after the attachment of certain microorganisms are primary causes for oral diseases such as denture stomatitis, gingival inflammation and secondary caries with their consequent complications [22,23]. Furthermore, continuous swallowing or aspiration of bacteria or fungi from the denture plaque would result in unexpected infections, especially in immune compromised or elderly patients [24,25]. Therefore, microbial adherence and colonization can be considered as key factors in the pathogenesis of biomaterial-centred infections [26-28]. In this study only (18.9%) had clean

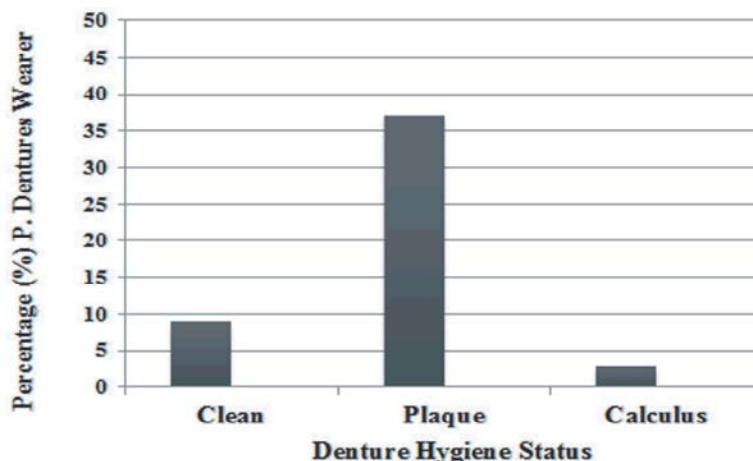


Fig. 1: Partial denture hygiene status of patients who visited the department of Prosthodontics in Dental Faculty, USM.

partial dentures with no debris or plaque on the tissue and polished surfaces. This is a confirmation that other conditions may contribute to the initiation and progress bacteria or fungi growth and enhanced infection like denture stomatitis.

## CONCLUSION

Partial denture wearers among those cohorts of patients exhibited inadequate denture hygiene and calculus which is a sign of oral hygiene disregard was observed in a high percentage of partial denture wearing participants. Their poor denture hygiene rank is indicating of the low oral hygiene of the community they come from.

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