

## Comparison of Microbiological Assessment of Non-adhesive Use and the Use of Adhesive on Complete Dentures

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**Abstract :** Introduction: Denture adhesive aids to provide additional retention, support and comfort for patients with loose dentures, as well as for patients who seek to achieve optimal denture adhesion. But due to its growing popularity, arising oral health issues should be considered, including its possible impact that may alter the microbiological condition of the denture. Changes as such may further resolve to denture-related oral diseases that can affect the day-to-day lives of patients. Purpose: The study aims to assess and compare the microbiological status of dentures without adhesives versus dentures when adhesives were applied. The study also intends to identify the presence of specific microorganisms, their colony concentration and their possible effects on the oral microflora. This study also aims to educate subjects by introducing an alternative denture cleaning method as well as denture and oral health care. Methodology: Edentulous subjects age 50-80 years old, both physically and medically fit, were selected to participate. Before obtaining samples for the study, the alternative cleaning method was introduced by demonstrating a step-by-step cleaning process. Samples were obtained by swabbing the intaglio surface of their upper and lower prosthesis. These swabs were placed in a thioglycollate broth, which served as a transport and enrichment medium. The swabs were then processed through bacterial culture. The colony-forming units (CFUs) were calculated on MacConkey Agar Plate (MAP) and Blood Agar Plate (BAP) in order to identify and assess the microbiological status, including species identification and microbial counting. Result: Upon evaluation and analysis of collected data, the microbiological assessment of the upper dentures with adhesives showed little to no difference compared to dentures without adhesives, but for the lower dentures, ( $P=0.005$ ), which is less than  $\alpha = 0.05$ ; therefore, the researchers reject ( $H_0$ ) and that there is a significant difference between the mean ranks of the lower denture without adhesive to those with, implying that there is a significant decrease in the bacterial count. Conclusion: These results findings may implicate the possibility that the addition of denture adhesives may contribute to the significant decrease of microbial colonization on the dentures.

**Keywords :** denture, denture adhesive, denture-related, microbiological assessment

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