

## A Comparison of Three Different Modalities in Improving Oral Hygiene in Adult Orthodontic Patients: An Open-Label Randomized Controlled Trial

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**Abstract :** Introduction: The objective of the study was to compare outcomes in terms of Bleeding index (BI), Gingival Index (GI), and Orthodontic Plaque Index (OPI) with video graphics and plaque disclosing tablets (PDT) versus verbal instructions in adult orthodontic patients undergoing fixed appliance treatment (FAT). Materials and Methods: Adult orthodontic patients have recruited from outpatient orthodontic clinics who fulfilled the inclusion criteria and were randomly allocated to three groups i.e., video, PDT, and verbal groups. We included patients undergoing FAT for six months of both genders with all teeth bonded mesial to first molars having no co-morbid conditions such as rheumatic fever and diabetes mellitus. Subjects who had gingivitis as assessed by Bleeding Index (BI), Gingival Index (GI), and Orthodontic Plaque Index (OPI) were recruited. We excluded subjects having > 2 mm of clinical attachment loss, pregnant and lactating females, any history of periodontal therapy within the last six months, and any consumption of antibiotics or anti-inflammatory drugs within the last one month. Pre- and post-interventional measurements were taken at two intervals only for BI, GI, and OPI. The primary outcome of this trial was to evaluate the mean change in the BI, GI, and OPI in the three study groups. A computer-generated randomization list was used to allocate subjects to one of the three study groups using a random permuted block sampling of 6 and 9 to randomize the samples. No blinding of the investigator or the participants was performed. Results: A total of 99 subjects were assessed for eligibility, out of which 96 participants were randomized as three of the participants declined to be part of this trial. This resulted in an equal number of participants (32) that were analyzed in all three groups. The mean change in the oral hygiene indices score was assessed, and we found no statistically significant difference among the three interventional groups. Pre- and post-interventional results showed statistically significant improvement in the oral hygiene indices for the video and PDT groups. No statistically significant difference for age, gender, and education level on oral hygiene indices were found. Simple linear regression showed that the video group produced significantly higher mean OPI change as compared to other groups. No harm was observed during the trial. Conclusions: Visual aids performed better as compared to the verbal group. Gender, age, and education level had no statistically significant impact on the oral hygiene indices. Longer follow-ups will be required to see the long-term effects of these interventions. Trial Registration: NCT04386421 Funding: Aga Khan University and Hospital (URC 183022)

**Keywords :** oral hygiene, orthodontic treatment, adults, randomized clinical trial

**Conference Title :** ICDOI 2022 : International Conference on Dentistry and Orthodontic Implants

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** June 27-28, 2022