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Dentistry Congress 2019: Mouthwashes: Effect on surface hardness and accuracy of light-cured composite - Saja Ali Muhsin - Middle Technical University

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Statement of the Problem: Using mouthwashes have been recommended to limit dental caries, periodontal diseases and due to their affection for restorative dental materials. The longevity and durability of the aesthetic composite resin restorative materials are important factors in the oral environment. However, many studies conducted the effect of some mouthwashes on the surface hardness and accuracy of composite resin.

Aim: The purpose of this study is to investigate the effect of both Listerine alcohol-contained and GUM alcohol-free mouthwashes on the surface hardness and dimensional accuracy of light-cured composite resin.

Methodology & Theoretical Orientation: 30 disc-specimen of nanohybrid light-cured composite resin was prepared for this study (Smile USA, shade A2). According to ISO standardization, the disc dimension was of 12(2mm) in diameter and thickness of 3(0.2mm). The sample divided into three groups (n=10) (3-readings each), G1: Control non-treated (distilled water); G2: Listerine (Alcohol-contained mouthwash) (Johnson and Johnson, UK) and; G3: G.U.M (Alcohol-free mouthwash) (Ivohealth, South Africa). The specimens were measured for surface hardness using Shore D and for dimensional accuracy by digital vernier caliper device at different immersion intervals. These include pre-treatment (initial), after 1 week, after 4 weeks, and after re-curing. Data were analyzed via one-way ANOVA (post-hoc Turkey test) performed at a confidence level of 95% and a significant P-value of (P 0.05).

Findings: Within the study limitation, both Listerine alcohol-contain and G.U.M alcohol-free mouthwashes had no effect on the hardness and dimensional accuracy of the composite material before recurring. While after the re-curing process, only GUM mouthwash showed a reduction in the surface hardness of the composite material. Further studies were needed to estimate the effect of mouthwashes on the micro-hardness and wear ability of the composite materials.

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