

## INTISARI

Karies merupakan masalah kesehatan gigi yang umum dan sering ditangani dengan perawatan tumpatan. Resin komposit banyak digunakan karena sifat estetikanya yang memiliki berbagai pilihan warna, namun perbedaan tingkat warna tersebut dapat memengaruhi sifat mekanis bahan salah satunya kekerasan. Penelitian ini bertujuan mengetahui apakah terdapat pengaruh tingkat warna resin komposit *packable nanohybrid* produk Indonesia terhadap kekerasan permukaan.

Penelitian menggunakan resin komposit *packable nanohybrid* produk Indonesia (Replix Universal) tingkat warna A1, A2, dan A3 dengan sampel berbentuk silinder berdiameter 5 mm dan tinggi 2 mm, masing-masing terdiri atas enam sampel. Seluruh sampel disinari selama 20 detik menggunakan *light curing unit*, kemudian diuji menggunakan *Vickers hardness tester* dengan beban 100 gf selama 15 detik. Data dianalisis menggunakan uji *One-Way* ANOVA dan dilanjutkan uji *Post-Hoc* LSD.

Hasil penelitian menunjukkan bahwa terdapat perbedaan nilai kekerasan permukaan antara tiap tingkat warna. Nilai kekerasan tertinggi terdapat pada tingkat warna A1, A2, dan terendah pada A3. Hasil uji statistik menunjukkan bahwa tingkat warna berpengaruh signifikan terhadap kekerasan permukaan resin komposit ( $p < 0,05$ ). Kesimpulan penelitian ini adalah tingkat warna resin komposit Replix Universal warna A1, A2, dan A3 berpengaruh terhadap kekerasan permukaan, dengan warna A3 menunjukkan nilai kekerasan terendah.

Kata kunci: resin komposit, tingkat warna, kekerasan permukaan, *nanohybrid*

## ABSTRACT

Dental caries remains a prevalent oral health problem and is commonly managed using restorative treatment. Composite resin is widely applied as a restorative material because of its favorable aesthetic properties and the availability of various shade levels. Nevertheless, variations in shade may influence the mechanical properties of composite resin, including surface hardness. This study aimed to evaluate the effect of shade level on the surface hardness of an Indonesian-made packable nanohybrid composite resin.

An experimental laboratory study was conducted using an Indonesian packable nanohybrid composite resin (Replix Universal) in shades A1, A2, and A3. Specimens were fabricated using cylindrical molds measuring 5 mm in diameter and 2 mm in thickness, with six specimens in each group. All specimens were light-cured for 20 seconds using a light-curing unit. Surface hardness was assessed using a Vickers hardness tester with a load of 100 gf applied for 15 seconds. Statistical analysis was performed using One-Way ANOVA followed by a post hoc LSD test.

The results demonstrated significant differences in surface hardness among the shade levels. The highest hardness values were observed in shades A1 and A2, whereas the lowest value was found in shade A3. Statistical analysis confirmed that shade level significantly affected the surface hardness of the composite resin ( $p < 0.05$ ). In conclusion, shade level influences the surface hardness of Replix Universal composite resin, with shade A3 exhibiting the lowest hardness value.

Keywords: composite resin, shade level, surface hardness, nanohybrid