

## **ABSTRACT**

*Composite resin is filling material in dentistry is often used. Composite resin will lead to the solubility due to the influence of liquid in the oral cavity. This study aims to determine differences in the level of solubility of the composite resin nanohybrid on carbonated beverages and water soaking pool.*

*The type of this research is experimental. Speciment were prepared 15 mm in inner diameters and 1,3 mm in thickness (n=6). Specimens were immersed in carbonated beverages and water soaking pool within 7 days. Volume and mass were calculated before immersion. Then the specimen were dried in a desiccator in temperature of 37<sup>0</sup>C for 2 days and calculated of mass. Solubility were measured and were analyzed with independent t-tests and level of confidence which were used 95% ( $\alpha = 0.05$ ).*

*The average value solubility of composite resin the immersion carbonated beverages at  $2.5083 \times 10^{-3} \text{ mg/mm}^3$  while on the water soaking pool at  $1.0383 \times 10^{-3} \text{ mg/mm}^3$ . Solubility different in the two groups were significant ( $p < 0.05$ ). The solubility of the composite resin immersion carbonated beverages were higher than the solubility of the composite resin in water immersion pool. Solubility result in this study were in normal llimits because under the standard of ISO 4049:1988 was  $7,5 \mu/\text{mm}^3$ .*

*In conclusion there are differences solubility of the composite resin nanohynrid media carbonated beverages and water soaking pool.*

**Keywords:** *Solubility of composite resin, nanohybrid, carbonated beverages, water pools.*

## ABSTRAK

Resin komposit merupakan bahan tambal yang sering digunakan dalam kedokteran gigi. Resin komposit dapat mengalami kelarutan karena pengaruh dari cairan yang berada pada rongga mulut. Penelitian ini bertujuan mengetahui perbedaan tingkat kelarutan resin komposit *nanohybrid* pada perendaman minuman berkarbonat dan air kolam renang.

Jenis penelitian ini adalah penelitian eksperimental. Spesimen dicetak dengan ukuran diameter 15 mm dan ketebalan 1,3 mm (n=6). Spesimen direndam dalam minuman berkarbonat dan air kolam renang, selama 7 hari. Sebelum direndam, spesimen disimpan dalam *desiccator* dengan suhu 37<sup>0</sup>C selama 24 jam dan diukur massa serta volumenya. Spesimen kemudian dikeringkan dalam *desiccator* dengan suhu 37<sup>0</sup>C selama 2 hari dan dilakukan pengukuran massa kembali. Kelarutan diukur dan dilakukan analisis data dengan uji *t-test independent* dengan tingkat kepercayaan yang digunakan 95% ( $\alpha = 0,05$ ).

Rata-rata nilai kelarutan resin komposit pada perendaman minuman berkarbonat sebesar  $2,5083 \times 10^{-3} \text{ mg/mm}^3$  sedangkan pada perendaman air kolam renang sebesar  $1,0383 \times 10^{-3} \text{ mg/mm}^3$ . Perbedaan kelarutan pada kedua kelompok signifikan ( $p < 0,05$ ). Hasil kelarutan pada penelitian ini masih dalam batas normal karena dibawah standar ISO 4049:1988 yaitu  $7,5 \mu\text{/mm}^3$ .

Kesimpulannya, terdapat perbedaan kelarutan resin komposit *nanohybrid* pada perendaman minuman berkarbonat dan air kolam renang.

**Kata kunci** : kelarutan resin komposit, *nanohybrid*, minuman berkarbonat, air kolam renang.