

ABSTRACT

Koencoro, BhaskaraPradipta. 2016. **Evaluation of the Tensile Strength Nanofiller Resin Composites and Nanohybrid Resin Composites**. Final Assignment, Faculty of Dentistry, Brawijaya University. Supervisors: (1) drg. Yuliana Ratna Kumala, Sp.KG. (2) Delvi Fitriani, drg. M.Kes.

Composites resins serve as replacement or as a cover of lost tooth structure, modifying the colour and contour of teeth to improve face aesthetics. For a long last composite resin fillings in the oral cavity, it must be supported with good mechanical strength of material fillings. One of the mechanical properties of the composite resins is tensile strength. There are 2 types of restorative material nanocomposite resins, which are nanofiller and nanohybrid. Both of these materials shared their similarities with their nano-sized filler particles. However they differ in number of particles and particle sizes entirely. This study aims to determine the difference between the tensile strength of composite resin restorative nanofillers and composite resin nanohybrid. Experimental research laboratories with post test only design involves 2 nanocomposites which are nanofiller composite resin as group I and nanohybrid composite resins as group II. Samples were made with measurements of 57 mm long and 5,9 mm width, as much as 9 samples each group. Followed by irradiation using light curing and samples were kept in an incubator at 37°C for 24 hours. Tensile sample's strength were tested by using a Universal Testing Machine. The results showed the tensile strength in group I is 32.844 Mpa and Group II is 40.644 Mpa. The conclusion of this study is there a significant difference in tensile strength between composite resin and resin composite nanohybrid nanofiller. Nanohybrid composite resin tensile strength is greater than the nanofiller composite resin.

Keyword : Nanocomposite, Tensile strength, Nanofiller, Nanohybrid

