

INTISARI

Resin komposit merupakan material restorasi yang sering digunakan dalam bidang kedokteran gigi. Resin komposit konvensional dengan partikel pengisi *macrofilled* memiliki kedalaman polimerisasi 2 mm. Resin komposit *bulk fill* merupakan inovasi terbaru dengan partikel pengisi *nanohybrid* memiliki kedalaman polimerisasi 4 mm. Tujuan untuk membuktikan adanya perbedaan kedalaman polimerisasi resin komposit konvensional dan resin komposit *bulk fill*.

Sampel berupa resin komposit konvensional Z350 XT dan resin komposit *bulk fill* berbentuk silinder diameter 4 mm dan tinggi 6 mm. Sampel berjumlah 8 sampel dibagi 2 kelompok dengan masing-masing kelompok memiliki 4 sampel. Penyinaran menggunakan *Light Curing Unit* (LCU) selama 20 detik. Bagian bawah sampel yang tidak terpolimerisasi dikeruk menggunakan *plastis instrument*. Kedalaman polimerisasi diukur menggunakan mikrometer ketelitian 0,01 mm. Data hasil dianalisis menggunakan uji *independet t* ($p < 0,05$).

Hasil menunjukkan nilai rerata kedalaman polimerisasi resin komposit konvensional $4,06 \pm 0,27$ mm dan resin komposit *bulk fill* $5,49 \pm 0,28$ mm. Hasil uji *independet t* menunjukkan adanya perbedaan kedalaman polimerisasi resin komposit konvensional dan resin komposit *bulk fill* bermakna ($p < 0,05$). Kesimpulan terdapat perbedaan kedalaman polimerisasi resin komposit konvensional dan resin komposit *bulk fill*. Resin komposit *bulk fill* memiliki kedalaman polimerisasi yang lebih besar dibandingkan resin komposit konvensional.

Kata Kunci : Resin komposit konvensional, resin komposit *bulk fill*, kedalaman polimerisasi.

ABSTRACT

Composite resin is a restorative material that is often used in dentistry. Conventional composite resin with macrofilled particles has a polymerization depth of 2 mm. Bulk fill composite resin is the latest innovation with nanohybrid filler particles has a polymerization depth of 4 mm. The aim was to prove the difference in the depth of polymerization of conventional composite resin and bulk fill composite resin.

Samples were cylindrical conventional composite resin Z350 XT and bulk fill composite resin with a diameter of 4 mm and a height of 6 mm. The sample amounted to 8 pieces divided into 2 groups. Each group have 4 samples. Irradiation using a Light Curing Unit (LCU) for 20 seconds. The underside of the non-polymerized sample was scraped using a plastic instrument. The depth of polymerization was measured using a micrometer with an accuracy of 0.01 mm. The results were analyzed using the independent t test ($p < 0.05$).

The results showed that the mean depth of polymerization of conventional composite resin was 4.06 ± 0.27 mm and bulk fill composite resin was 5.49 ± 0.28 mm. The independent t test showed a significant difference in the polymerization depth of conventional composite resin and bulk fill composite resin ($p < 0.05$). In conclusion, the depth of polymerization of conventional composite resin and bulk fill composite resin are different. Bulk fill composite resin has a greater polymerization depth than conventional composite resin.

Keywords: Conventional composite resin, bulk fill composite resin, polymerization depth