PERBANDINGAN *DEPTH OF CURE* RESIN KOMPOSIT *BULK-FILL* YANG DIAKTIVASI SONIK, VISKOSITAS RENDAH DAN VISKOSITAS TINGGI PADA KETEBALAN YANG BERBEDA

INTISARI

Kualitas polimerisasi resin komposit *bulk-fill* yang dipengaruhi oleh faktor intrinsik dan ekstrinsik dapat diukur dengan pengukuran *depth of cure*. *Vickers Hardness Ratio* merupakan metode tidak langsung pengukuran *depth of cure* resin komposit. Penelitian ini bertujuan untuk membandingkan pengaruh jenis resin komposit dan ketebalan restorasi terhadap *depth of cure* resin komposit bulk-fill diaktivasi sonik, viskositas rendah dan viskositas tinggi.

Subjek penelitian berupa 36 blok resin komposit berbentuk silinder dengan ketebalan 2 mm dan 4 mm yang terbagi menjadi 6 kelompok (n=6) berdasarkan resin komposit *bulk-fill* aktivasi sonik, viskositas rendah dan viskositas tinggi. Seluruh subjek dimasukkan ke dalam inkubator selama 24 jam. Dilakukan uji kekerasan mikro permukaan *top* dan *bottom* menggunakan *Vickers microhardness tester (VHN)* dengan berat 100 gram selama 15 detik. Nilai rasio kekerasan mikro dihitung dengan rumus: VHN *bottom/top*. Data dianalisis menggunakan ANAVA dua jalur.

Hasil penelitian menunjukkan terdapat pengaruh jenis resin komposit terhadap *depth of cure* resin komposit (P<0,05), tidak terdapat pengaruh ketebalan material terhadap *depth of cure* resin komposit (P> 0,05), dan tidak terdapat interaksi jenis resin komposit dan ketebalan material terhadap *depth of* resin komposit (P> 0,05). *Depth of cure* resin komposit *bulk-fill* aktivasi sonik dan viskositas tinggi lebih besar dibandingkan resin komposit *bulk-fill* viskositas rendah.

Kata kunci: *depth of cure*. komposit *bulk-fill*, *microhardness*, viskositas, ketebalan

COMPARISON OF DEPTH OF CURE SONIC-ACTIVATED BULK-FILL COMPOSITE, LOW VISCOSITY AND HIGH VISCOSITY IN DIFFERENT THICKNESS

ABSTRACT

The polymerization quality of composite resin which is influenced by intrinsic and extrinsic factors can be measured by measuring the depth of cure. Vickers hardness ratio is an indirect method of measuring the depth of cure of composite resin. This study aimed to compare the effect of composite resin type and material thickness on the depth of cure of sonically activated bulk-fill composite resin, low viscosity, and high viscosity.

The research subjects were 36 cylindrical composite resin blocks with a thickness of 2 mm and 4 mm which were divided into 6 groups (n = 6) based on sonically activated bulk-fill composite resin, low viscosity, and high viscosity. All subjects were put in an incubator for 24 hours. The microhardness ratio was performed using a Vickers microhardness tester (VHN) with a weight of 100 grams for 15 seconds which calculated by the formula: VHN bottom/top. Data was analyzed using two-way ANOVA.

The results showed that there was an effect of the type of composite resin on the depth of cure of the composite resin ($P < 0.05$), there was no effect of material thickness on the depth of cure of composite resin ($P > 0.05$), and there was no interaction of composite resin type and material thickness to a depth of resin composite ($P > 0.05$).The depth of cure of sonic activated and high viscosity bulk-fill composite resin was greater than low viscosity bulk-fill composite resin.

Keywords: depth of cure, bulk-fill composite, microhardness, viscosity, thickness