

## ABSTRAK

Judul : Perbedaan Kekuatan Geser Semen Resin *Self-Adhesive* Berbahan Dasar 4-Metacryloxyethyl Trimellitate Anhyderide/Methyl Methacryllate Tri Butyl Borane dan Glycerol Phosphate Dimethacrylate terhadap Dentin dan Restorasi Indirek Resin Komposit  
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Restorasi indirek merupakan restorasi gigi yang dilakukan di luar rongga mulut. Restorasi indirek memiliki *marginal fit* yang baik dan lebih resisten terhadap keausan, fraktur, dan diskolorasi. Bahan restorasi indirek bermacam-macam seperti resin komposit untuk meningkatkan estetik. Bahan *luting* digunakan untuk melekatkan restorasi indirek ke gigi. Semen resin *self-adhesive* merupakan bahan *luting* tanpa penggunaan bahan *bonding* maupun pengetsan pada gigi. Perbedaan kandungan semen resin *self-adhesive* berbahan 4 META/MMA-TBB dan GPDM mempengaruhi terhadap kekuatan geser semen. Penelitian ini bertujuan untuk mengetahui perbedaan kekuatan geser semen resin *self-adhesive* berbahan 4 META/MMA-TBB dan GPDM terhadap restorasi indirek resin komposit dan dentin.

Sampel penelitian terdiri dari 14 gigi premolar satu rahang atas dengan kriteria utuh, tanpa karies, dan tanpa kalkulus. Sebelumnya dilakukan pemotongan akar gigi dan pemotongan tonjol gigi. Sampel ditanam dalam cetakan resin akrilik. Sampel dibagi menjadi 2 kelompok secara acak. Kelompok A dilakukan aplikasi semen resin *self-adhesive* berbahan 4 META/MMA-TBB. Kelompok B dilakukan aplikasi semen resin *self-adhesive* berbahan GPDM. Sampel direndam dalam saliva buatan dengan pH 6,8 lalu disimpan dalam inkubator dengan suhu 37°C selama 24 jam. Kemudian dilakukan uji kekuatan geser menggunakan *universal testing machine*.

Hasil uji analisis statistik *Mann-Whitney U* didapatkan signifikansi sebesar 0,000 ( $p < 0,05$ ) yang menunjukkan terdapat perbedaan bermakna antara 2 kelompok. Disimpulkan bahwa kekuatan pelekatan semen resin *self-adhesive* berbahan 4 META/MMA-TBB lebih tinggi dibandingkan semen resin *self-adhesive* berbahan GPDM terhadap restorasi indirek resin komposit.

Kata kunci: kekuatan geser, semen resin *self-adhesive*, 4 META/MMA-TBB, GPDM, restorasi indirek, resin komposit

## ABSTRACT

**Title** : *Comparison Shear Strength of Self-Adhesive Resin Cement Made From 4-Metacryloxyethyl Trimellitate Anhyderide/Methyl Methacryllate Tri Butyl Borane and Glycerol Phosphate Dimethacrylate to Dentin and Indirect Restoration Composite Resin*

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*Indirect restoration is a restoration done outside the oral cavity. It also has good marginal fit and more resistant to wear, fracture, and discoloration. There are many kinds of materials for indirect restoration, such as composite resin, which can increase the aesthetic aspect. Luting agent is used to bond the indirect restoration to the teeth. Self-adhesive resin cement is a luting agent without the use of bonding agent. The difference of the composition of self-adhesive resin cement made from 4-META/MMA-TBB and GPDM can affect the shear strength of the cement. This study aims to determine the differences between shear strength of self-adhesive resin cement made from 4-META/MMA-TBB and GPDM towards indirect composite resin and dentin.*

*The sample consists of 14 maxillary first premolar with criterias including: intact, without caries, and without calculus. The root and cusp of the teeth were cut and planted into acrylic resin molds. The sample were divided into 2 groups randomly. Group A were applied 4-META/MMA-TBB self-adhesive resin cement. Group B were applied GPDM self-adhesive resin cement. The samples were immersed in artificial saliva with 6,8 pH and stored in the incubator at 37°C for 24 hours. Afterwards, shear strength test was performed using univesal testing machine.*

*The result of the Mann-Whitney U statistical analysis showed a significance of 0,000 ( $p < 0,05$ ), which showed significant differences between the 2 groups. Therefore, it can be concluded that the bond strength of self-adhesive resin cement made from 4-META/MMA-TBB is higher than GPDM self-adhesive resin cement for composite resin indirect restoration and dentin.*

**Keywords:** *shear strength, self-adhesive resin cement, 4-META/MMA-TBB, GPDM, indirect restoration, composite resin*