ABSTRAK

Nama : Nurul Fauziyah Zain
Program Studi : Ilmu Kedokteran Gigi
Judul : Efektivitas Penambahan Nanosilika Sekam Padi terhadap Kekuatan Fleksural Lapisan Porselen Opak pada Mahkota Keramik Logam

Kegagalan gigi tiruan yang tidak mampu menahan gaya fleksural sering menjadi masalah utama pemakaian mahkota keramik logam. Pemanfaatan serbuk silika nano sekam padi telah berkembang diteliti dalam bidang kedokteran gigi karena kemampuannya meningkatkan sifat mekanis. Penelitian ini bertujuan untuk mengetahui penambahan efektivitas partikel silika nano dari sekam padi terhadap kekuatan fleksural lapisan opak pada mahkota keramik logam Co-Cr. Jenis penelitian adalah eksperimental laboratories *in vitro* dengan *posttest only control group design*. Sampel penelitian adalah logam Co-Cr persegi panjang dan porselen dilapis diatas bagian tengah logam berjumlah 25 sampel yang terbagi atas 5 kelompok perlakuan. Pengukuran kekuatan fleksural dengan *three-point bending* pada *UTM*. Data dianalisis dengan uji *T test independent* dan *oneway* ANOVA. Hasilnya diperoleh kekuatan fleksural mahkota keramik logam Co-Cr dengan penambahan silika sekam padi 0,25%; 0,5%; 0,75%,1% pada lapisan opak adalah 70,431±4,168; 84,093±2,852; 100,672±4,182 dan 115,092±3,821. Dari hasil penelitian dapat disimpulkan bahwa Ada peningkatan kekuatan fleksural pada mahkota keramik logam dengan penambahan silika 0,25%; 0,5%; 0,75%,1% pada lapisan opak.

Kata Kunci:
Silika sekam padi, Nanosilika, Kekuatan fleksural, Mahkota keramik logam, Porselen lapisan opak

ABSTRACT

Name : *Nurul Fauziyah Zain*
Study Program : *Dentistry*
Title : *The Effectiveness of Adding Nanosilica to Rice Husk against the Flexural Strength of Opaque Porcelain Coating on Metal Ceramic Crown*

Denture failure that is unable to withstand flexural forces is often a major problem in the use of metal ceramics. The use of rice husk nano silica powder has been extensively researched in dentistry because of its ability to improve mechanical properties. This study aims to determine the effectiveness of nano silica particles from rice husks on the flexural strength of the opaque layer on Co-Cr metal ceramic crowns. The type of research is experimental laboratories in vitro with posttest only control group design. The research samples were rectangular Co-Cr metal and porcelain plated on top of the metal center totaling 25 samples which were divided into 5 treatment groups. Flexural strength measurement with three-point bending at UTM. Data were analyzed by independent T test and one-way ANOVA. The results obtained the flexural strength of the Co-Cr metal ceramic crown with the addition of 0.25% rice husk silica; 0.5%; 0.75%.1% in the opaque layer is 70.431±4.168; 84.093±2.852; 100,672±4,182 and 115,092±3,821. From the results of the study it can be concluded that there is an increase in the flexural strength of the metal ceramic crown with the addition of 0.25% silica; 0.5%; 0.75%,1% on opaque coating.

Keywords:
Rice husk silica, Nanosilica, Flexural strength, Metal ceramic crown, Opaque coating porcelain