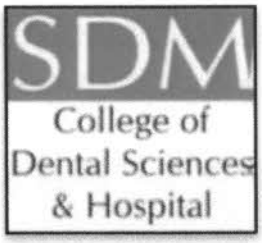

"COMPARATIVE EVALUATION OF COMPRESSIVE STRENGTH AND FLEXURAL STRENGTH OF ZIRCONOMER USED AS A CORE MATERIAL WITH OTHER CONVENTIONAL CORE MATERIALS.

– AN INVITRO STUDY."

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ABSTRACT

Background: A core build-up is a restoration placed in a badly broken down tooth to restore the coronal portion of the tooth. This facilitates subsequent restoration of the broken down tooth by means of extra-coronal restoration.[1] Compressive and flexural strength of core materials is thought to be important because core usually replaces the large bulk of the tooth structure and must resist multidirectional forces. In this study compressive and flexural strength of a newly introduced core material was determined and compared with conventional core materials.

Objective: The purpose of the study undertaken was to determine the compressive and flexural strength of Zirconomer used as a core build-up material and compared it with other conventional core build up materials, like amalgam, resin modified GIC cement and light cured composite.

Methodology: Cylindrical specimens measuring 6mm in height and 4mm in diameter were prepared using a machined Aluminium mold. Ten specimens were prepared in each group.[Amalgam, Resin Modified glass ionomer cement , Light cured Composite, Zirconomer].Compressive strength was determined using a universal testing machine. The maximum load applied to fracture the specimens was recorded and compressive strength calculated in MPa. Rectangular specimen measuring 25x2x2 mm [LengthxWidthxDiameter] were prepared using a machined Aluminium mold. 10 specimens were prepared in each group [Amalgam, Resin Modified glass ionmer cement, Light cured Composite, Zirconomer]. Flexural strength was determined in a universal testing machine by recording the maximum load applied to fracture the specimens. The data obtained was analysed using parametric one way ANOVA test and Tukeys post- hoc procedure.

Results: The mean compressive strength and flexural strength was significantly higher ($p<0.05$) in Paracore group as compared to Zirconomer, DPI alloy and Vitrimer. The differences in compressive strength and flexural strength observed was not statistically significant when compared between DPI alloy, Vitrimer and Zirconomer.

Conclusion: Within the limitations of this study, Paracore had higher strength compared to the other three core build-up materials DPI Alloy, Vitrimer and Zirconomer.

Keywords: Zirconomer; compressive strength; flexural strength; core-build up.