

## **Abstract**

**Title: Comparsion of flexural strength of self adhesive vertise flow composite with a self adhesive resin baced cement and conventional composites**

**Introduction:** Today, the use of resin composites with a toughness close to the strength of the tooth is very much considered. Many studies have been done to investigate the mechanical properties and durability of composite materials in the oral environment, among the composites studied; it is possible to name self-adhesive and conventional composites. This thesis was designed with the aim of comparing the flexural strength of self-adhesive resin cement and conventional composites with Vertise Flow composite.

**Materials and Methods:** This experimental study was carried out on 40 composite materials and one self-adhesive resin cement. Four types of materials, including a type of composite of self-adhesive (Vertise flow, Kerr, USA). A type of Universal composite (Z250, 3MESPE, USA) In color A2 and a self-adhesive resin cement (Embrace, Max CemEute, Kerr, USA), this study was used. The samples were evaluated for measuring the three-point flexural strength according to the International Standard 4049 ISO by Instron 1115 machine. Data was encoded after collecting and was analyzed using descriptive and inferential statistics using SPSS 22 software. ANOVA were used to compare the variables.

**Results:** The results showed that the mean flexural strength for self-adhesive composite of Vertise Flow 80/83 and for Grandio flow composite was 163.39 and for Z250 composite was 80.95 and for self-adhesive cement Embrace is 40/136. The results also showed that the Z250 composite was ranked first in the flexural strength and Grandio flow composite in the second rank and Embrace self-adhesive resin cement in the third place and the Vertise flow composite in fourth place.

**Conclusion:** Composites such as Z250 and Grandio flow with high bending strength increase the likelihood of dental restorations. Therefore, the use of these composites is recommended.

**Key words:** Flexural strength; Vertise Flow Composite; Conventional Composites.