EVALUATIONS AND COMPARISON OF SOME MECHANICAL PROPERTIES OF THE SELF AND HOT – CURE – ACRYLIC DENTURE BASE MATERIALS UNDER DIFFERENT PRESSURES MODALITY

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Abstract :

The objectives of this study were to evaluate and compare some mechanical properties (compressive strength, tensile strength, shear strength, impact strength and transverse strength) of the self and hot-cured acrylic denture base materials under different pressures modalities. 250 samples were constructed, 200 sample were divided into four groups (50 for each, 10 for each test), subjected to different pressure forces (25psi, 50psi, 75psi, 100psi) and compared with 50 samples of hot-cured acrylic resin (10 for each test processed in water bath according to the conventional method -temperature 74°C, pressure 1200psi and time was 8 hours- as a control group). The results showed that at 100psi (compressive strength, tensile strength, shears strength, and impact strength) were improved. At 75psi (transverse strength) was improved, at 50 psi (impact strength, shears strength and transverse strength) were deteriorated. While 25psi lowered the (compressive strength, tensile strength, shears strength, and transverse strength). Using 100 psi pressure improved most of self-cured acrylic resin properties compared with hot-cured acrylic while 75psi improved the transverse strength.

Key words: self-cured acrylic, hot-cured acrylic, pressure modality.