

**Evaluation of *Candida albicans* Attachment to Flexible Denture Base Material (Valplast) and Heat cure Acrylic Resin Using Different Finishing and Polishing Techniques**

**A thesis**

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# **Abstract**

## **Statement of the problem:**

Surface roughness of the denture base material play a major role in the adhesion of microorganisms and plaque formation, surface roughness affected primarily by the finishing and polishing techniques, therefore it is important to know how the finishing and polishing techniques affect the surface roughness of denture base material.

## **Purpose of the study :**

The objectives of this study was to evaluate the effect of two finishing and four polishing techniques on the surface roughness of flexible denture base (Valplast)and heat cure acrylic and its effect on Candida albicans attachment with the effect of saliva on Candidal adhesion .

## **Material and Method:**

Three hundred twenty square samples (2cm\*2cm\*3mm) were prepared (160 flexible acrylic and 160 heat cure acrylic as control), the flexible acrylic and heat cure samples were divided into two major groups according to the finishing method

Group A (80samples flexible acrylic, 80samples heat cure acrylic) finished by stone bur, tungsten carbide bur and sand paper).

Group B (80samples flexible acrylic, 80samples heat cure acrylic) finished by special green cone (silicone finisher bur).

Each group divided to four subgroups according to the polishing method, subgroup contains (20 samples flexible acrylic, 20samples heat cure acrylic).

The mean surface roughness values (Ra)were gained for each sample after finishing and polishing, the samples then incubated in media containing suspension of Candidal cell(conc.of  $1 \times 10^6$ cell/ml)for sixty minutes at room temp,after that they were dried, fixed and stained. Ten samples of each subgroup were incubated in artificial saliva for thirty minutes before adherent assay.

### **Results:**

Statistical analysis revealed that flexible acrylic samples that were finished by special green cone with the different polishing techniques were smoother in profilometric study with significance difference in Candidal attachment.

### **Conclusions**

The using of special green cone with different polishing techniques for flexible acrylic and heat cure acrylic will yield smoother surface more than using stone bur, tungsten carbide bur and sand paper, Candida albicans attachment affected by the finishing and polishing method, the method that yield less surface roughness values have less Candidal attachment, saliva decreases the attachment of C. albicans.