شبكة المعلومات الجامعية

بسم اللّه الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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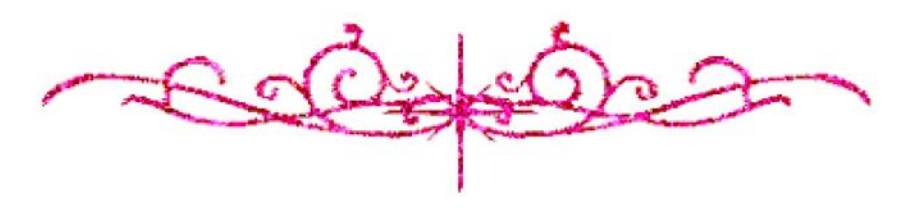

Evaluation of the effect of different finishing protocols on translucency and surface roughness of two different ceramic materials

Thesis

Thesis Submitted for the partial fulfillment of the Master Degree requirements in Fixed Prosthodontics,
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DEDICATION

To my family ..... thank you for unconditional love and support

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To my colleagues and friends …… Thank you for the best times we spent together

I give you this Master's thesis …….

Calling upon the almighty to be crowned with success and acceptance by the members of the discussion committee.

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1. INTRODUCTION

The appearance of natural teeth is best mimicked by ceramic materials. In recent years the popularity of all-ceramic dental restorations has increased due to their high esthetic qualities and metal-free structure. Significant developments in all-ceramic materials have created wonderful opportunities for the fabrication of lifelike restorations that provide reliable, long-term results[1].

However, all-ceramic dental materials are inherently fragile in tension, affected by micro cracking, flaws, and defects that may be introduced during thermal treatment or fabrication procedures. The fabrication process precision, and skills of individual dental technicians, may affect the reliability and clinical performance of all-ceramic restorations[1].

Mechanical properties such as strength and optical properties such as color and translucency are the first parameters assessed to understand the clinical potential and limits of dental ceramics.

Natural glaze is a glazed ceramic layer formed on the surface of porcelain, containing a glass phase when the porcelain is heated to the temperature of glaze for the time specified by the manufacturers. This layer may deteriorate with clinical modifications to the final restoration, leading to a coarse surface that resembles a pre-treated surface[2].

Polishing has been shown to improve structural resistance to oral conditions and ensure visual properties of restoration. The transparency and strength of the slab and the veneer system can be seen in the ceramic system with natural enamel that has a transparency failure[3].

The translucency of dental restorative material is usually determined by Contrast ratio (CR) or Transparency Parameters (TP). Translucency of dental ceramics materials is important for the esthetic quality of the dental restorations[4].

All ceramic crowns allow for greater transfer of light through the crown and can mimic the appearance of natural teeth in terms of surface texture and trans-electivity. Differences in the transparency of the basic materials in the restoration process may affect final results[5].

The objectives of this study were to determine the effects of different surface finishing protocols on the surface roughness and translucency of two different ceramic materials.