ABSTRAK

Glass Ionomer Cement (GIC) ialah bahan restorasi yang telah banyak dipergunakan dalam kedokteran gigi restoratif karena sifat menguntungkannya. Seiring berkembangnya ilmu material dalam kedokteran gigi, sekarang ini teknologi produksi bahan restorasi berkembang cukup pesat. Hal tersebut membuat dokter gigi memiliki banyak pilihan yang bervariasi dalam memilah jenis bahan beserta mereknya guna merestorasi gigi. Penelitian berikut bertujuan guna mengetahui perbedaan kekerasan permukaan di beberapa macam merk GIC konvensional tipe II .

Metode penelitian berikut berjenis analitik eksperimental laboratoris menggunakan rancangan penelitian *post test only design group*. Terdiri dari 4 kelompok GIC dibagi berdasarkan merknya FUJI IX-GC, FX ULTRA, Shangchi, Tehnodent yang masing-masing berjumlah 7 sampel. Spesimen disiapkan dan kemudian disimpan dalam air destilasi di suhu 37 ° C di dalam inkubator selama 24 jam. Sampel dikeringkan serta di simpan selama 24 jam. Sampel diukur dengan alat pengujian kekerasan permukaan *Vickers*. Data yang diperoleh dilakukan uji statistik *Kruskall-Walls* dan *Mann-Whitney*.

Hasil penelitian menunjukan terdapat perbedaan kekerasan permukaan pada beberapa merk GIC. Terdapat perbedaan nilai kekerasan permukaan yang signifikan antara masing-masing kelompok, *kecuali pada merk FUJI IX-GC dengan FX ULTRA, dan Shangchi dengan Tehnodent.* Hasil penelitian menjelaskan rerata kekerasan permukaan GIC merk FUJI IX-GC (68.387 VHN ± 4.4653) lebih tinggi dari 3 merk lainnya. merk FX ULTRA (62,926 VHN ± 12.6746). Kemudian merk Tehnodent (38.217 VHN ± 4,5330). Sedangkan merk Shangchi (36.650 VHN ± 6.2597) paling rendah dari merk lainnya.

Kata Kunci : GIC, kekerasan permukaan, merk.

ABSTRACT

The development of materials science in dentistry leads to the rapid development of production technology in restoration material. Therefore, dentists have many options in choosing the type of materials, brands, and prices for restoring teeth, including the Glass Ionomer Cement (GIC) material. This study aims to determine the differences of the surface hardness among several brands of conventional GIC type II.

This research used a laboratory experimental analytic method with a post-test only design group. The four GIC groups were divided based on the brands, like FUJI IX-GC, FX ULTRA, Shangchi, and Tehnodent, with seven samples for each group. Specimens were prepared and stored in distilled water at 37°C in an incubator for 24 hours. Samples were dried and stored for 24 hours, then followed by measurement using Vickers surface hardness instrument. The obtained data was statistically analyzed by the Kruskall-Walls and Mann-Whitney tests.

The results revealed that several tested GIC brands showed significant differences in surface hardness ($p < 0.05$), except for the FUJI IX-GC with FX ULTRA, and Shangchi with Tehnodent. In addition, the average surface hardness of FUJI IX-GC (68.387 VHN ± 4.4653) was the highest and followed by FX ULTRA (62.926 VHN ± 12.6746), Tehnodent (38,217 VHN ± 4.5330), the lowest was Shangchi (36,650 VHN ± 6.2597).

Keywords: *GIC, surface hardness, brand.*