

## INTISARI

Resin komposit merupakan material restorasi yang banyak digunakan dalam kedokteran gigi. Resin komposit nanofil merupakan resin komposit dengan *filler* berukuran nano yang memiliki sifat estetik yang baik yang menunjang kebutuhan pasien khususnya untuk restorasi gigi anterior. *Narrative review* ini memaparkan perubahan warna resin komposit nanofil dikaitkan dengan kekasaran permukaan setelah resin komposit diaplikasikan pada kavitas di dalam rongga mulut.

Database yang digunakan untuk mencari literature dalam penulisan *narrative review* ini adalah ClinicalKey, Elsevier, Science Direct, SAGE Journals, Pubmed, dan MED LINE. Pencarian pustaka menggunakan kata kunci *Minimally invasive dentistry AND composite resin, Esthetic Dental Restoration AND composite resin, Dental composite resin AND nanofiller particle, Nanofiller dental composite, nanocomposite, dental composite aging AND discoloration, surface roughness AND dental composite, dental composite aging AND surface roughness, dental nanocomposite color alteration, dental nanocomposite AND discoloration, dental nanocomposite AND color stability, dental nanocomposite AND surface roughness, dental nanocomposite AND staining resistance, dan dental nanocomposite AND polish retention*. Pustaka diseleksi menggunakan kriteria inklusi dan eksklusi dan didapatkan sebanyak 42 jurnal.

Degradasi permukaan menyebabkan kekasaran permukaan restorasi resin komposit. Selain itu, kekasaran permukaan resin komposit dipengaruhi oleh ukuran *filler* dan jumlah *filler* material. Degradasi permukaan ini menyebabkan retensi plak dan zat pewarna meningkat. Konsumsi makanan dan minuman yang mengandung zat pewarna menyebabkan material restorasi mengalami diskolorasi. Diskolorasi material restorasi terjadi melalui proses berdasarkan 2 teori yaitu *free volume theory* dan *interaction theory*.

Kata kunci: resin komposit nanofil, kekasaran permukaan, diskolorasi

## **ABSTRACT**

*Composite resin is a restorative material that is widely used in dentistry. Nanofil composite resin is a composite resin with nano-sized fillers that have good aesthetic properties that support the patient's needs, especially for anterior tooth restorations. This narrative review describes the discoloration of nanofil composite resin associated with surface roughness after the composite resin was applied to the oral cavity.*

*The databases used to search for literature in writing this narrative review are ClinicalKey, Elsevier, Science Direct, SAGE Journals, Pubmed, and MED LINE. Library search using keywords Minimally invasive dentistry AND composite resin, Esthetic Dental Restoration AND composite resin, Dental composite resin AND nanofiller particle, Nanofiller dental composite, nanocomposite, dental composite aging AND discoloration, surface roughness AND dental composite, dental composite aging AND surface roughness, dental nanocomposite color alteration, dental nanocomposite AND discoloration, dental nanocomposite AND color stability, dental nanocomposite AND surface roughness, dental nanocomposite AND staining resistance, dan dental nanocomposite AND polish retention. The literature were selected using inclusion and exclusion criteria and obtained 42 journals.*

*Surface degradation causes surface roughness of the composite resin restorations. In addition, the surface roughness of the composite resin is affected by the size of the filler and the volume of the filler material. This surface degradation cause plaque and dye retention to increase. Consumption of food and beverages containing coloring matter causes the restoration material to discolor. The discoloration of restoration material occurs through a process based on 2 theories, the free volume theory and the interaction theory.*

*Key words: nanofilled composite resin, surface roughness, discoloration*