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An eight-year systematic review of restoration techniques: Incremental versus bulk filling

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The purpose of this systematic review was to examine the marginal discoloration and adaptation in incremental layering or bulk fill associated posterior composite resin restorations in adult patients. The fracture risk and the postoperative sensitivity risk were also systematically reviewed. A comprehensive search spanning 1994 to March 2018 was performed in PubMed, LILACS, Scopus, Brazilian Library in Dentistry, Web of Science and SIGLE without restrictions. The abstracts of the annual conference of the IADR (1994-2018) were searched. Dissertations and theses were searched via the ProQuest Dissertations and Periódicos Capes Theses Databases. After the removal of duplicates and the reading of title and abstracts, a total of 12 articles were included in the analysis. Randomized clinical trials were included which compared incremental layering and bulk fill of posterior composite resin restorations of cavities in patients age 22-51 years old. The random effects statistical model and the Cochrane Collaboration's tool for assessing risk of bias were used. Of the 12 articles that were analyzed, nine studies were deemed an unclear risk of bias, and three studies were assessed to be at low risk of bias. There was no evidence of differences between bulk fill and incremental layering observed in any of the study follow-ups for fracture risks, postoperative sensitivity and marginal adaptation and discoloration ($p=0.08$). In conclusion, postoperative sensitivity is not influenced by bulk fill and incremental layering for up to six weeks in posterior composite resin restorations. Marginal discrepancies and risk of fractures are not influenced until eight years of evaluation.

Biography

Mirian M Dang has completed her BSc Hons at York University. She is the Founder and President of Smiles Initiative, a non-profit organization dedicated to advocating healthy oral routines and raising funds to assemble and distribute dental kits to vulnerable communities. She has designed and delivered programs ranging from informal workshops to hosting formal events such as the 2017 Annual Dental Health Fair.

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