

Efficacy of dental floss impregnated with chlorhexidine on reduction of supragingival biofilm: a randomized controlled trial

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- PMID: 25376536 DOI: [10.1111/idh.12112](https://doi.org/10.1111/idh.12112)

Abstract

Background: The use of a toothbrush has a limited ability to control the dental biofilm in interproximal areas. Therefore, specialized devices, such as dental floss, may be useful for these specific areas.

Objective: This study aimed to investigate the efficacy of dental floss impregnated with chlorhexidine gluconate on the reduction of the supragingival biofilm.

Methods: This research was parallel, single-blind, controlled and randomized, and contained a sample of thirty dental students from the Faculty of Pharmacy, Dentistry and Nursing of the Federal University of Ceará, Brazil, who were divided equally into three groups. The negative control group (NC) did not utilize any kind of interproximal cleaning; the positive control group (PC) used waxed floss without impregnation twice a day; and the test group (T) used the same dental floss, which was impregnated with chlorhexidine gluconate each day. For all groups, this study lasted for 15 days. The presence of a biofilm was evaluated on four surfaces (mesiobuccal, distobuccal, mesiolingual and distolingual) by the Quigley-Hein Index, resulting in four scores for each tooth.

Results: Group T had the lowest plaque scores, showing a significant difference compared to group NC ($P < 0.001$) and group PC ($P < 0.001$). Group PC also displayed a significant difference compared to NC ($P < 0.001$).

Conclusion: It was concluded that the use of dental floss impregnated with chlorhexidine gluconate resulted in additional reductions in the supragingival biofilm relative to the results achieved with conventional waxed floss on the anterior teeth of a well-motivated and well-instructed population.

Keywords: biofilms; chlorhexidine; dental devices; dental plaque; dental plaque index; home care; oral hygiene; therapeutic use; treatment efficacy.