The WhiteTeeth app

The development and evaluation of a smartphone app for promoting oral health behavior and oral hygiene in adolescent orthodontic patients

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In the absence of good oral hygiene, patients with fixed orthodontic appliances can develop white spot lesions that remain visible for the rest of their lives. As the opacity or discoloration of these lesions can seriously compromise dental aesthetics, orthodontic treatment may not be entirely successful. It is therefore necessary to establish the extent to which innovative oral health promotion programs can further improve patients' oral health behaviors and outcomes. However, little is known about the effectiveness of continuous behavioral support via mobile phones (mHealth).

This thesis describes the development and evaluation of a mobile app—the WhiteTeeth app—that was designed to promote good oral health behavior among adolescent orthodontic patients. The app’s development was guided by intervention mapping (IM). Development thus starts with an analysis of the health problem, which includes identification of the psychosocial factors related to the health behavior. To identify the psychosocial factors underlying oral health behavior in our target group, we conducted a systematic literature review with meta-analysis and a cross-sectional clinical study. Then, to target these psychosocial factors and facilitate continuous behavioral support, various behavior change techniques were incorporated into the app.

The app provides feedback on users’ oral health behavior and allows users to evaluate and monitor their behavior. Finally, a randomized controlled trial was conducted. This showed that the app improved oral hygiene in adolescent orthodontic patients.
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JANNEKE SCHEERMAN
The WhiteTeeth app

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ter verkrijging van de graad van doctor aan de Universiteit van Amsterdam op gezag van de Rector Magnificus prof. dr. ir. K.J.J. Maex
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Janneke Francisca Maria Scheerman geboren te Heemskerk

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“You can work from websites, you can work with Photoshop, I work with my iPhone.. It’s ridiculous to fight new media. You can’t win, so you just have to incorporate it into your toolbox.”

LUC TUYMANS
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