Periodontal Health and Smoking Cessation

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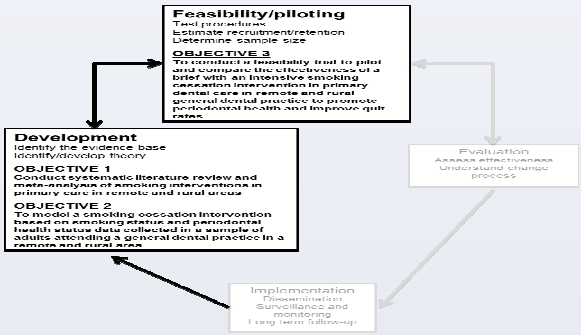
Introduction

This project is a feasibility study which models and compares brief and intensive smoking cessation interventions in their ability to improve smoking cessation rates and promote periodontal health. The design of the feasibility study uses the Framework for Complex Interventions developed by the Medical Research Council as its theoretical underpinning (see Figure 1 below).

Adapted MRC Framework for Complex Interventions for Periodontal Health and Smoking Cessation project.



Objectives

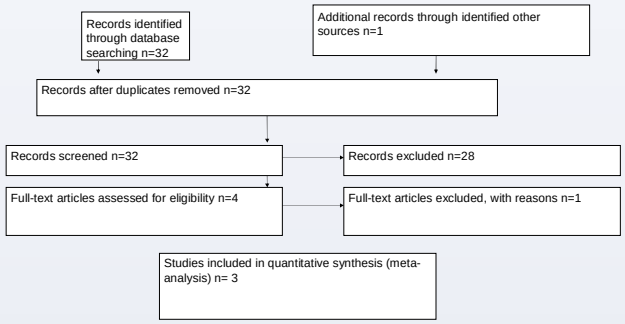
1. To conduct a systematic review and meta-analysis of smoking cessation interventions in remote and rural areas to examine their effectiveness in improving quit rates.
2. To model a smoking cessation intervention based on smoking status and periodontal health status data collected in a sample of adults attending a general dental practice in a remote and rural area.
3. To conduct a feasibility trial to pilot and compare the effectiveness of a brief with an intensive smoking cessation intervention in primary dental care in remote and rural general dental practice to promote periodontal health and improve quit rates.

Systematic Literature Review

Research question
Can an additional benefit in terms of quit status and periodontal health be achieved by an intensive smoking cessation intervention compared with a brief smoking cessation intervention in primary dental care in a remote and rural area?
Study selection criteria
Randomised controlled trials only as effectiveness of an intervention is being assessed.
Study participants
Adult users of tobacco who smoke cigarettes, cigars or pipes, or used smokeless tobacco who received any tobacco cessation intervention in a dental setting, regardless of their motivation to quit.
Interventions
Any study relating to the effectiveness of tobacco-related interventions delivered by a dental care professional in a community or dental setting.
Outcome measures
Point prevalence or continuous abstinence of tobacco use as determined by self-report or biochemical verification with results shown for a minimum of six months.
Data sources and search strategy
Electronic databases, hand searching journal articles, and contacting researchers in the field of smoking cessation in the dental setting. Full text articles were procured for those papers which appeared to meet the inclusion criteria following this initial analysis PRISMA methodology used.

References:
Carr, A. and Ebbert, J. (2006) Interventions for tobacco cessation in the dental setting. *Cochrane Database of Systematic Reviews* (online)
Gansky S., Ellison J., Kavanagh C., Hilton J. & Walsh M. (2002) Oral screening and brief spit tobacco cessation counseling: a review and findings. [Review] [53 refs] *Journal of Dental Education* 66(9):1088-1098
Walsh M., Hilton J., Ellison J., Gee L., Chesney M., Tomar S. and Ernster V. (2003) Spit (Smokeless) Tobacco Intervention for High School Athletes: results after 1 year. *Addictive Behaviors* 28(6):1095-1113
Walsh M., Langer T., Kavanagh N., Mansell C., MacDougal W., Kavanagh C. & Gansky S. (2010) Smokeless tobacco cessation cluster randomized trial with rural high school males: intervention interaction with baseline smoking. *Nicotine& Tobacco Research* 12(6): 543-50

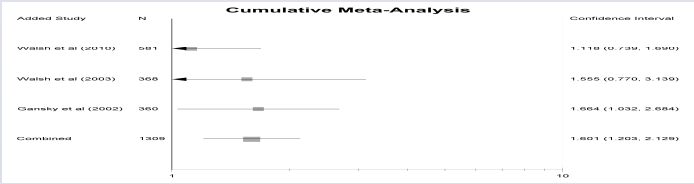
Results



Description of included studies
Published between 2002 and 2010
All research undertaken in rural high schools in USA
Only smokeless tobacco interventions identified
One study used self-report of abstinence, while other two used salivary cotinine measures of a random sample.
Two studies used follow-up periods of 12 months, the other followed up for 24 months.
Each paper used different outcome measure: point prevalence at 7 days, point prevalence at 30 days and continuous abstinence.
Control groups received usual or no care.
All interventions delivered by dental hygienists.
All interventions included a peer-led educational component and oral examinations, followed by face-to-face or telephone counselling.
No nicotine replacement therapy.
Drop out rates comparable in control and intervention groups comparable but ranging from 10% to 48%.
Motivation to quit was not considered in any of the included studies.

Data synthesis and meta-analysis
Those lost to the studies considered to be still smokers – intention to treat analysis
Randomisation strategies examined – only adequate in one study
Effectiveness of the interventions studied were evaluated using the odds ratio
The Mantel-Haenszel method, a fixed effect model, was used to give a pooled weighted average of odds ratios, with a confidence interval of 95%.

Meta-analysis



Conclusions from Systematic Literature Review

- Lack of randomised controlled trials
- Lack of trials examining smoked tobacco
- No trials measuring periodontal outcomes
- Tobacco cessation interventions had a small but positive effect in improving abstinence rates over control groups.
- More research is required to show effectiveness of smoked tobacco cessation interventions in dental settings particularly in
- rural areas.

Next steps

Quantitative and qualitative data collection and modelling of a feasibility study.
Conduct the feasibility study and design a full trial.