Reviewer's report

Title: Applying psychological theories to evidence-based clinical practice: Identifying factors predictive of placing preventive fissure sealants.

Version: 4 Date: 21 November 2009

Reviewer: Susan Michie

Reviewer's report:

This is a well written paper addressing a new and well defined question: identifying factors predictive of a highly cost effective and poorly implemented dental procedure, placing preventive fissures sealants.

• Minor Essential Revisions (which the authors can be trusted to correct)

Abstract

References to “theory level” and “cross theory” analysis are not clear.

Background

p.4 1st para. The recommendation is for children at risk to get sealant treatment, but the data on % of all children getting sealant treatment is given (20%). In order to assess the magnitude of the implementation problem, we need to know the % of children at risk who get the sealant.

3rd para. There is a general statement that psychological models explain behaviour in terms of predictive beliefs. This is not the case, as there are models that focus on emotional drivers and on automatic, nonconscious processes.

p.5, 1st para. Theories are said to have been chosen because of good evidence of predictive value. The implication is that this refers to prediction of behaviour. However, the Stages of Change model does not have good predictive value of behaviour, although it does predict movement between “stages”.

2nd para. Evidence of the association between the behavioural simulation paradigm and actual behaviour should be considered.

5th para. References were given to theoretically derived measures for all theories apart from Operant Learning Theory and Stages of Change – these should be added.

p.6, 1st para: explain what “behavioural, normative, control” means in relation to belief domains.

“in conjunction with with the literature” – which literature? No indication or references are given.

p.7, 1st para. How many participants were invited and how many accepted?

3rd para. What was the rationale for choosing cut-offs of 0.6 and 0.25? The
statistical analysis section should relate to and elaborate the concepts of “theory level” and “cross theory analysis”

Discussion
6th para. The section “given the relationship …” until the end of the paragraph is unclear.

Conclusion
The last sentence is not clear, especially the last seven words.

• Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

The article would be clearer if relevant information was moved to the Design and Participants section from the Procedure section.

More reference could be made to the measurement problems and the low response rate in the Discussion.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

'I declare that I have no competing interests’