Effective oral health promotion: literature review

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Authors' objectives
To identify oral health promotion practices which have been shown to be effective or ineffective.

Searching
MEDLINE was searched (1982-Jan 1996) using the search terms, 'effectiveness', 'evaluation', 'dental health education', 'oral health', 'dental hygiene', 'preventive dentistry', 'mouth diseases - prevention and control', 'tooth injuries', 'gum shields/mouth protectors' and 'oral cancer/oral neoplasms'. Articles were also obtained from printed indices, sources already known to the authors and from the reference lists of retrieved papers. The search was restricted to papers based on studies in developed countries and English language.

Study selection
Study designs of evaluations included in the review
All types of study designs. The review focused on those studies with strong evaluative design (randomised and non-randomised controlled trials).

Specific interventions included in the review
Campaigns, programmes or initiatives with the specific aim of promoting oral health. Specific interventions in the included studies were: self instruction manuals, self monitoring, programmes for teaching plaque control, oral hygiene instruction, videos, and programmes with groups, disabled people and children to modify personal oral health skills.

Participants included in the review
General population. Some of the included studies focused on specific populations such as children, teenagers, adolescents and the well-elderly.

Outcomes assessed in the review
Knowledge, attitudes and behaviour related to oral health. The outcome measure(s) used in each study were allocated to one of the following classes: change in oral health measures, objective measure of behavioural change, self-reported behavioural change, change in knowledge or attitudes, awareness of programme.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The quality criteria used was as follows: a clear description of aims and objectives, study design, methods of allocation and interventions; presence of a control group, as well as a test group; validity and reliability (objectivity) of measures used; a clear presentation of pre- and post-intervention outcome data for all groups; adequate number of participants in each group; and the blinding of examiners. To ensure that the quality criteria were applied in a consistent manner, 25% of the papers were selected at random and were assessed independently by each of the three researchers using the developed criteria. This exercise reached broad agreement on how the criteria should be applied, and areas of difference were discussed and resolved.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. Data were extracted on setting, intervention, main provider of the intervention and outcome measures.
Methods of synthesis
How were the studies combined?
A narrative summary was used.

How were differences between studies investigated?
Studies were grouped by study design and intervention.

Results of the review
Seventy studies in total of which 38 were described as having a strong design. These included 20 quasi-experimental with a non-equivalent control; 13 experimental with an equivalent control, and five randomised controlled trials (RCTs).

Total number of participants not stated.

1. Approaches to oral health promotion:

It is unclear whether one-off oral health promotion initiatives are sufficient to improve individuals' oral health significantly for long periods.

There is evidence that programmes using more innovative approaches than the medical/behavioural model, have more potential for longer-term behaviour changes.

Limited short-term behavioural changes are achievable using simple persuasive approaches, and greater or longer-term changes appear possible by using more tailored approaches which are based around active participation and addressing social, cultural and personal norms and values. The use of appropriate language and simple message is important in avoiding confusion.

Preventative and comprehensive clinical approaches (including the appropriate use of fissure sealants) to oral health promotion can be effective in reducing the incidence of caries. However, this approach is intensive and may not reach those in greatest need.

2. Fluoridation:

Water fluoridation is effective at preventing dental caries. It is cheap, safe and reaches the whole population. There is evidence that it reduces inequalities in health.

Fluoride toothpaste is another important and effective method of delivering fluoride, although it will not reach the entire population. Fluoride supplements have been shown to be effective in clinical trials. Evidence for their effectiveness in home use and community schemes is at best equivocal and often shows them to be ineffective. This literature review has found no measure that will achieve the same levels of prevention as fluoridation for the same resources.

Authors’ conclusions
There is clear evidence that oral health education/promotion can be effective in bringing about changes in people's knowledge and in improving people's oral health.

CRD commentary
The authors have stated their research question and the inclusion criteria. The literature search was limited and may have missed additional studies because only English language publications were included and only one database was searched. The search was deliberately limited to articles which may be of relevance to Wales, and this limitation of the review is recognised by the authors. The authors do not report whom, and how many of the authors, performed the selection of studies. However, there is no text or tabular description of extracted data for the included studies. There is an assessment of validity with studies grouped by study design, however, the process of this assessment is not reported. The authors make statements about the costs of the interventions, but these costs are not reported in the text. Given the limitations of the review, the conclusions should be viewed with caution, and may not be generalisable outside the UK.
Implications of the review for practice and research
Practice: The oral health promotion activities reviewed have mainly fallen within the Ottawa Charter categories of developing personal skills and reorientation of health care services. Future practice and evaluation research should try to develop the other strategic aims of the Ottawa Charter. Practitioners of oral health promotion should look wider afield to explore examples of good health promotion practice, and integrate oral health promotion into general health promotion wherever it is possible.

Research: Researchers should evaluate the effectiveness of future interventions using robust study designs (i.e. RCTs), based on key findings from systematic reviews, with interventions based on a thorough needs assessment, focusing on health gain and change in behaviour, and not focusing on individuals alone. Evaluations should be undertaken over an adequate period (five to 10 years) and consider and report the full resource cost used in an intervention.

Further research is required to establish the value of screening for the early detection of oral cancers and pre-cancers.

Bibliographic details

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.