Intervention and policy issues related to children’s exposure to environmental tobacco smoke


Authors' objectives
To examine the effectiveness of interventions for reducing environmental tobacco smoke (ETS) among young children.

Searching
MEDLINE was searched from 1966 to 1998, HealthSTAR from 1975 to 1998, and Current Contents (Social and Behavioural Science) from 1997 to 1998. The search were conducted using the following terms: ‘environmental tobacco smoke’, ‘passive smoke/smoking’, ‘second-hand smoke’, with ‘intervention study/studies’, ‘treatment outcome/assessment’, ‘follow-up study/studies’, ‘controlled or clinical trial/trials’. The searches were limited to publications in the English language.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) or controlled clinical trials. Studies with less than ten cases were excluded.

Specific interventions included in the review
The interventions included self-help materials and/or counselling (by telephone or home-visits by nurses) and/or physician feedback. The control conditions included minimal contact or usual care.

Participants included in the review
Mothers or families with children less than 18 years of age. The participants included new mothers (smokers and non-smokers), and families with asthmatic children.

Outcomes assessed in the review
ETS exposure reduction in young children. This was assessed by parental reporting of indoor smoking or the number of cigarettes smoked per day, by air nicotine levels, or by biochemical assessment (urinary cotinine levels in children). Descriptive studies that focused on the health effects of ETS exposure, such as respiratory and ear infections, allergic responses and atopic diseases, were excluded.

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 authors do not state that they assessed quality.

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 for the following categories: study identification; target population and sample size; assessment measure; response and follow-up rates; intervention conditions; and outcomes.

Methods of synthesis
How were the studies combined?
A narrative synthesis was undertaken.
How were differences between studies investigated?
The authors described each study separately by year of publication, and in alphabetical order.

Results of the review
Five studies with 1,220 mothers and 163 families were included in the review. Three of the studies were RCTs (103 mothers and 163 families).

None of the studies yielded significant reductions in objective measures of children's exposure to ETS (as measured by urinary cotinine levels and/or household nicotine exposure levels), although a reduction was found in 2 of the 5 studies when exposure was assessed by parental reporting. The authors suggest that there may be bias in self-reporting, and that the specificity of radioimmunoassay as a method for measuring urinary cotinine levels is variable.

Authors' conclusions
Continued research efforts devoted to the evaluation of ETS reduction are needed, especially in light of the literature review, which highlighted how little work has been conducted in this area.

CRD commentary
The review question and the inclusion and exclusion criteria were not well defined. The review question broadly addressed the participants and outcome of interest. Explicit exclusion criteria were limited to studies with very small sample sizes (less than 10 cases), and descriptive studies focusing on adverse health effects. Inclusion criteria were presented only within the search strategy. The authors searched at least three databases, and the search terms and dates were provided. However, the search was limited to English language publications and other retrieval methods were not reported, e.g. handsearches, attempts to locate unpublished literature, and contact with experts in the field. It is therefore possible that some studies might have been missed. The quality of the included studies was not assessed, although the review included only controlled trials. The authors do not state how many of the reviewers selected the studies and extracted the data. Some information on the individual studies was tabulated and presented in the text. However, detailed information on the participants' characteristics, quantitative outcome measures, and results, were lacking. Heterogeneity was not assessed, or addressed in the paper. However, given the evidence presented, a narrative synthesis of the studies appears to have been appropriate. The authors report that there is a dearth of literature targeting ETS reduction in children. In addition, they describe possible reasons for why the results of the studies included in the review may not be valid. As a result, no conclusions were presented on the basis of the available evidence. Given that three RCTs were included in the review, the authors could have drawn some conclusions. A more rigorous presentation and analysis of the studies, e.g. a validity assessment and subgroup analyses, would have added to the value of this review.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors state that there is an urgent need for more research focused on children's exposure to ETS in the home.

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