Cochrane Library

Cochrane Database of Systematic Reviews

Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke (Review)

Behbod B, Sharma M, Baxi R, Roseby R, Webster P

Behbod B, Sharma M, Baxi R, Roseby R, Webster P.
Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke.
Cochrane Database of Systematic Reviews 2018, Issue 1. Art. No.: CD001746.
DOI: 10.1002/14651858.CD001746.pub4.

www.cochranelibrary.com

WILEY

[Intervention Review]

Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke

Behrooz Behbod[1,2], Mohit Sharma[1], Ruchi Baxi[1], Robert Roseby[3], Premila Webster[1]

[1]Nuffield Department of Population Health, University of Oxford, Oxford, UK. [2]Department of Primary Care and Population Health, University of Nicosia Medical School, Nicosia, Cyprus. [3]Monash Children's Hospital, Melbourne, Australia

Contact: Behrooz Behbod, Department of Primary Care and Population Health, University of Nicosia Medical School, Nicosia, Cyprus. behbod.b@unic.ac.cy, bbehbod@post.harvard.edu.

Editorial group: Cochrane Tobacco Addiction Group.
Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 1, 2018.

Citation: Behbod B, Sharma M, Baxi R, Roseby R, Webster P. Family and carer smoking control programmes for reducing children's exposure to environmental tobacco smoke. *Cochrane Database of Systematic Reviews* 2018, Issue 1. Art. No.: CD001746. DOI: 10.1002/14651858.CD001746.pub4.

ABSTRACT

Background

Children's exposure to other people's tobacco smoke (environmental tobacco smoke, or ETS) is associated with a range of adverse health outcomes for children. Parental smoking is a common source of children's exposure to ETS. Older children in child care or educational settings are also at risk of exposure to ETS. Preventing exposure to ETS during infancy and childhood has significant potential to improve children's health worldwide.

Objectives

To determine the effectiveness of interventions designed to reduce exposure of children to environmental tobacco smoke, or ETS.

Search methods

We searched the Cochrane Tobacco Addiction Group Specialised Register and conducted additional searches of the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, PsycINFO, Embase, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Education Resource Information Center (ERIC), and the Social Science Citation Index & Science Citation Index (Web of Knowledge). We conducted the most recent search in February 2017.

Selection criteria

We included controlled trials, with or without random allocation, that enrolled participants (parents and other family members, child care workers, and teachers) involved in the care and education of infants and young children (from birth to 12 years of age). All mechanisms for reducing children's ETS exposure were eligible, including smoking prevention, cessation, and control programmes. These include health promotion, social-behavioural therapies, technology, education, and clinical interventions.

Data collection and analysis

Two review authors independently assessed studies and extracted data. Due to heterogeneity of methods and outcome measures, we did not pool results but instead synthesised study findings narratively.

Main results

Seventy-eight studies met the inclusion criteria, and we assessed all evidence to be of low or very low quality based on GRADE assessment. We judged nine studies to be at low risk of bias, 35 to have unclear overall risk of bias, and 34 to have high risk of bias. Twenty-one interventions targeted populations or community settings, 27 studies were conducted in the well-child healthcare setting and 26 in the

ill-child healthcare setting. Two further studies conducted in paediatric clinics did not make clear whether visits were made to well- or ill-children, and another included visits to both well- and ill-children. Forty-five studies were reported from North America, 22 from other high-income countries, and 11 from low- or middle-income countries. Only 26 of the 78 studies reported a beneficial intervention effect for reduction of child ETS exposure, 24 of which were statistically significant. Of these 24 studies, 13 used objective measures of children's ETS exposure. We were unable to pinpoint what made these programmes effective. Studies showing a significant effect used a range of interventions: nine used in-person counselling or motivational interviewing; another study used telephone counselling, and one used a combination of in-person and telephone counselling; three used multi-component counselling-based interventions; two used multi-component education-based interventions; one used a school-based strategy; four used educational interventions, including one that used picture books; one used a smoking cessation intervention; one used a brief intervention; and another did not describe the intervention. Of the 52 studies that did not show a significant reduction in child ETS exposure, 19 used more intensive counselling approaches, including motivational interviewing, education, coaching, and smoking cessation brief advice. Other interventions consisted of brief advice or counselling (10 studies), feedback of a biological measure of children's ETS exposure (six studies), nicotine replacement therapy (two studies), feedback of maternal cotinine (one study), computerised risk assessment (one study), telephone smoking cessation support (two studies), educational home visits (eight studies), group sessions (one study), educational materials (three studies), and school-based policy and health promotion (one study). Some studies employed more than one intervention. 35 of the 78 studies reported a reduction in ETS exposure for children, irrespective of assignment to intervention and comparison groups. One study did not aim to reduce children's tobacco smoke exposure but rather sought to reduce symptoms of asthma, and found a significant reduction in symptoms among the group exposed to motivational interviewing. We found little evidence of difference in effectiveness of interventions between the well infant, child respiratory illness, and other child illness settings as contexts for parental smoking cessation interventions.

Authors' conclusions

A minority of interventions have been shown to reduce children's exposure to environmental tobacco smoke and improve children's health, but the features that differentiate the effective interventions from those without clear evidence of effectiveness remain unclear. The evidence was judged to be of low or very low quality, as many of the trials are at a high risk of bias, are small and inadequately powered, with heterogeneous interventions and populations.

PLAIN LANGUAGE SUMMARY

Can interventions for parents and people caring for children reduce children's exposure to tobacco smoke?

Background

Children exposed to cigarette smoke (environmental tobacco smoke) are at greater risk of lung problems, infections, and serious complications including sudden infant death syndrome. Preventing exposure to cigarette smoke in infancy and childhood might significantly improve children's health worldwide. Parental smoking is a common source of cigarette exposure for children. Older children are also at risk of exposure to cigarette smoke in child care or educational settings.

Study characteristics

We searched six databases for relevant research. This is an update of a previously published review, and the date of the most recent search was February 2017. We found 78 studies on the effects of interventions aimed at family and carers with the goal of reducing children’s exposure to tobacco smoke. These studies included parents and other family members, child care workers, and teachers involved in the care and education of infants and young children (from birth to 12 years of age), and used a variety of interventions, including different kinds of counselling, brief advice, and educational materials.

Key results

Only 26 studies reported that an intervention was successful in reducing children’s exposure to tobacco smoke. These studies used a range of interventions. Nine studies used more intensive counselling methods or motivational interviewing, but in other studies, these types of interventions were not effective. Of the 52 studies that did not show a significant reduction in child tobacco smoke exposure, 19 used intensive counselling methods or motivational interviewing. One study successfully reduced children's asthma symptoms by using motivational interviewing. This review does not show whether any particular interventions reduced parental smoking and child smoke exposure more effectively than others.

Quality of evidence

The quality of evidence ranged from low to very low. Future studies should aim to provide evidence of higher quality by addressing study design problems, including more participants, and describing interventions in more detail.