Reductions in smoking prevalence and cigarette consumption associated with mass-media campaigns

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Authors' objectives
To evaluate the effect of state and local mass-media campaigns on smoking prevalence and cigarette consumption.

Searching
Internet searches of the Center for Disease Control and Prevention's Office of Smoking and Health website, MEDLINE and other unspecified computerised databases were searched. Peer-reviewed published or unpublished final reports were eligible for inclusion. References in identified articles and books were checked, while experts in tobacco control were asked for details of any additional studies. The included studies were limited to those published since Flay's review in 1987 (see Other Publications of Related Interest).

Study selection
Study designs of evaluations included in the review
The inclusion criteria were not explicitly defined in terms of the study design. The designs of the included studies were not explicitly stated, but it appears that before-and-after studies with and without follow-up and reports from National Statistics databases were included.

Specific interventions included in the review
Studies of state and local mass-media antismoking campaigns were eligible for inclusion. The review focused on studies conducted in the USA. The included studies were of state-wide or community-wide campaigns aimed at the general population and youths in the USA; and of media campaigns and concurrently implemented tobacco control programmes (or policies) aimed at decreasing or stopping smoking, reducing exposure to environmental tobacco smoke, reducing youth access to cigarettes, and countering pro-tobacco messages. Elements considered were: increased excise cigarette taxes; school-based prevention programmes; health care provider education; restrictions on advertising and the promotion of smoking; clean indoor air laws; school- and community-based education programmes; school-based health centers; education and training initiatives; enhanced youth access enforcement; and laws penalising youth for possession.

Participants included in the review
Studies of the general population and young people were eligible for inclusion.

Outcomes assessed in the review
Studies that assessed smoking rates (reductions in smoking behaviour) were eligible for inclusion. The review assessed smoking prevalence and cigarette consumption. In the review, adult smokers were defined as current smokers who had smoked at least 100 cigarettes in their lifetime, while youth smokers were defined as those who had smoked on at least 1 of the past 30 days. Smoking prevalence was estimated as the percentage of smokers in the population (generally aged 18 years or older). Cigarette consumption was measured as per head cigarette consumption (PCC).

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

Assessment of study quality
Although validity was not formally assessed, the authors discussed how the effect of media campaigns was separated from other concurrently implemented antismoking policies.
Data extraction
Multiple researchers independently extracted the data. The change in smoking rate was compared with the initial level where possible. Where the net decrease (or increase) in smoking rates was not reported, the authors calculated it as the change in smoking rate in the study area minus the change in smoking rates of all states without a mass-media campaign or over the USA as a whole.

Methods of synthesis
How were the studies combined?
The studies were grouped according to the campaign reported, the population targeted (general population or youths) and the level of campaign (state level or community level), and a narrative synthesis was undertaken. The effect on youths of campaigns aimed at the general population was also considered.

How were differences between studies investigated?
Differences between the studies were discussed, particularly in terms of the scale and funding of the campaigns and other concurrently implemented policies and political influences.

Results of the review
The number of studies included in the review was not stated.

Mass-media campaigns directed at the general population.

Two well-funded and implemented state-wide campaigns (California $0.5 per capita and Massachusetts $2.0 per capita) plus concurrent coordinated tobacco control programmes reduced smoking rates in the general population; there was a reduction in net smoking prevalence of 6 to 12%. In California, the tax increase was not offset by lower prices as occurred in Massachusetts. These two campaigns had mixed effects on youths. Some studies of the Californian campaign found no significant difference between youths exposed to the campaign and unexposed youths in terms of the rates of thinking about stopping smoking, while other studies found that exposure significantly reduced smoking prevalence and rates of starting smoking. Two studies of the Massachusetts campaign found that fewer exposed youths took up smoking compared with youths in other states: smoking prevalence among eight graders was reduced by 2% in Massachusetts, compared with an increase of 26% in other states, while among tenth graders, the increase in smoking was 16% in Massachusetts versus 23% in other states. Two smaller state wide campaigns of shorter duration in less populated areas (Michigan $0.2 per capita and Oregon $0.6 per capita) found smaller reductions in smoking (net decline 4% and 5%, respectively).

The studies suggested that the greatest reductions were to be achieved in the first 3 years of the campaigns, with decreasing reductions over time thereafter.

Mass-media campaigns directed at youth. Two youth-orientated state-wide campaigns were associated with reductions in smoking rates (Arizona PCC declined by 8% but no baseline rates were reported; Florida net reduction estimated as 5%). These appeared to be more successful than smaller community-level programmes. Community-level programmes that reduced smoking tended to be longer and more intensive than campaigns having less effect.

Cost information
The per capita costs of some campaigns were reported (see Results of the Review).

Authors’ conclusions
Well-funded and implemented state-wide mass-media campaigns targeted at the general population and run in conjunction with tobacco control programmes reduced smoking rates in adults and youth. Studies of campaigns targeted at youths had mixed results. The effect of the media campaigns alone was difficult to disentangle from the effects of concurrently implemented tobacco control measures.
CRD commentary
The review question was clear in terms of the intervention, participants and outcomes. The inclusion criteria were not defined in terms of the study design. Several relevant sources were searched and attempts were made to locate unpublished studies. However, the full list of databases searched was not reported, the search terms were not stated, and the methods used to select the studies were not described. Validity was not formally assessed, but some relevant aspects of study validity were discussed in the text. More than one reviewer independently extracted the data, which reduces the potential for bias and errors.

Adequate information on the included studies was not provided, e.g. sample size, the methods used to select the sample, and the validity of the measures used to assess the outcomes. Furthermore, the number of studies included in the review was not reported, so it is unclear whether all relevant studies were discussed and used in the review. Given the nature of the review, the studies were appropriately grouped under the campaign studied and combined in a narrative. Potential reasons for the different results from the campaigns were adequately discussed in the text of the review. The evidence presented appears to support the authors’ conclusions.

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

Research: The authors stated that randomised controlled trials with appropriate controls are required to assess the effect of campaigns. They recommended that future research should take account of tobacco control policies (both existing and newly implemented). In addition, research is required to address the following issues: the influence of the content of the campaign on smoking; the effect of other sources of anti-tobacco information; the scale and duration of the programmes; the influence of the campaigns over time; and the influence on specific subgroups.

Funding
Substance Abuse and Mental Health Services Administration.

Bibliographic details

PubMedID
11888047

Original Paper URL
http://her.oxfordjournals.org/cgi/content/full/17/1/85

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Adolescent; Adult; Health Expenditures; Health Promotion /economics; Humans; Mass Media; Prevalence; Smoking /epidemiology /prevention & control; United States /epidemiology

AccessionNumber
12002006075
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.