Stand-alone mass media campaigns to increase physical activity: a community guide updated review

Brown DR, Soares J, Epping JM, Lankford TJ, Wallace JS, Hopkins D, Buchanan LR, Orleans CT; Community Preventive Services Task Force

CRD summary
The authors concluded that there was insufficient evidence to determine effectiveness of stand-alone mass media campaigns for increasing physical activity in general populations. There was potential for review bias, but the review was generally well conducted and included a large evidence base. The authors’ conclusions took the limitations of the evidence into consideration and seem reliable.

Authors’ objectives
To assess the effectiveness of stand-alone mass media campaigns to increase physical activity in the general population.

Searching
To update a Task Force review (see Other Publications of Related Interest), 11 electronic databases (including MEDLINE, EMBASE, and Cochrane) were searched between 2001 and 2008. Only peer reviewed studies published in English were sought. Reference lists of retrieved articles and relevant reviews were manually searched for additional studies.

An additional search was conducted to identify studies published between 2009 and 2011.

Study selection
Eligible for inclusion were studies that assessed the effectiveness of stand-alone mass media campaigns (as defined in the review) to increase physical activity in the general population. Eligible studies had to include a comparator group not exposed or less exposed to the intervention. Eligible studies were conducted in countries of high income. Studies had to report at least one of the following outcomes: increased knowledge or awareness, or improved attitudes and beliefs about physical activity, or increased intentions to be physically active.

Studies included in the original Task Force review between 1980 and 2000 were also included in the current review.

Included studies used campaigns aimed at physical activity, walking, diet or weight. Most studies were in adults, but two were in children aged between nine and 17 years, and one in older adults aged 60 years or older. A number of self-report physical activity assessment tools were used and a variety of definitions of physical activity were reported. Study durations ranged from one week to four years.

The authors did not state explicitly how many reviewers screened studies for inclusion, but they acknowledged help from one review member.

Assessment of study quality
Studies were assessed on suitability of design according to the Task Force criteria, and coded as "greatest", "moderate", or "least". The quality of study execution was also assessed based on the number of methodological limitations identified (maximum nine, as defined in the review); rated as "good" (zero to one limitations), "fair" (two to four limitations), or "limited" (five or more limitations). Only studies of good or fair quality and any level of suitability of design were included in the review.

The authors did not explicitly state how many reviewers assessed study quality, but they acknowledged an abstraction team consisting of a team of nine members.

Data extraction
Two reviewers independently extracted self-report outcome data, including changes in the proportion of people self-reporting physical activity and changes in time spent on physical activity.

Any discrepancies were resolved through consensus.
Methods of synthesis
Where it was appropriate to combine data, median relative or absolute percentage changes and interquartile intervals or range of values (such as net effect changes) were calculated. Otherwise data were presented narratively.

Data on design suitability, quality of execution, and net effect change were synthesised according to Community Guide methodology to determine whether stand-alone mass media campaigns showed strong, sufficient, or insufficient evidence of effectiveness for increasing physical activity.

Results of the review
Fourteen studies (16 articles) were included in the review (30,842 participants). Three were controlled trials, five cohort studies, five cross-sectional studies, and three single group before-and-after studies. Eight studies were rated as having greatest design suitability, including three with good, and five with fair study execution. Eight studies were rated as having least design suitability (one good and seven fair execution).

Nine studies (10 articles) used comparable self-reporting physical activity change measures, and when combined they showed a modest effect: median absolute increase of 3.4 percentage points (interquartile interval 2.4 to 4.2 percentage points). Four studies (five articles) with greatest study design showed conflicting findings, with two studies reporting greater physical activity in control groups.

Six studies used other outcome measures. Three of these studies reported a median relative change in self-reported time spent on physical activity; 4.4% increase, range of values 3.1% to 18.2%. The remaining three studies indicated that individuals were more active as a result of the campaign.

Four studies identified in the 2009 to 2011 literature search, also showed modest and inconsistent findings for the promotion of physical activity.

Cost information
Eight studies reported costs of mass media campaigns, ranging from $191,000 for an 18 month campaign to $339 million for a four year campaign.

Authors' conclusions
There was insufficient evidence to determine effectiveness of stand-alone mass media campaigns for increasing physical activity in the general population.

CRD commentary
The review question and supporting inclusion criteria were clearly stated. A large number of sources were included in the literature search, but as this was restricted to published articles and restricted by language, potentially relevant studies may have been missed. Data extraction was undertaken in duplicate, and it appeared that quality assessment may also have been performed in duplicate. It was not clear whether this was true for screening, which meant reviewer error and bias could not be completely ruled out. Quality assessment suggested variable study quality.

A large number of studies and study populations were included in the review. Given considerable heterogeneity among studies, the authors used best methods available to synthesise data. The authors based their conclusions on various factors, including clinical and methodological heterogeneity, use of different outcome measures, reliance on self-report measures that were not validated, inconsistent findings, and evidence suggesting only modest behaviour changes. Details on control groups in the three controlled trials, and how exposure to a mass media campaign was avoided, were not provided.

Although there was some potential for bias in the review, overall, the review was generally well conducted and included a large evidence base. The authors conclusions took the limitations of the evidence into consideration and suitably reflected the findings, and therefore seem reliable.

Implications of the review for practice and research
Practice: The authors stated that stand-alone mass media campaigns may be better used as part of a broader multi-component community-wide intervention to increase awareness and knowledge about the benefits of physical activity.
and change population behaviour.

**Research:** The authors stated that stronger future research methods were needed, including use of valid and reliable self-report measures, or more objective measures of physical activity (which would be preferable). In addition, future studies should assess the safety and cost effectiveness of physical activity interventions.

**Funding**
Not explicitly stated, but part of the Centre for Disease Control.

**Bibliographic details**

**PubMedID**
23079180

**DOI**
10.1016/j.amepre.2012.07.035

**Original Paper URL**

**Other publications of related interest**

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Health Promotion /methods; Humans; Mass Media; Motor Activity; Outcome Assessment (Health Care) /methods; Public Health; Self Report; Time Factors; Weight Loss

**AccessionNumber**
12012049318

**Date bibliographic record published**
03/01/2013

**Date abstract record published**
19/06/2013

**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.