Effectiveness of mass media interventions for HIV prevention, 1986-2013: a meta-analysis

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CRD summary
The authors concluded that mass media interventions may be useful in reducing HIV/AIDS differences between countries, especially those most at need. The authors’ conclusions reflect the evidence presented and the overall review process seemed robust. However, the potential for language bias (missed studies) and the unknown quality of the evidence should be borne in mind when interpreting the conclusions.

Authors' objectives
To synthesise investigations of mass media-delivered HIV prevention interventions, assess their effectiveness on improving the use of condoms and HIV-related knowledge, and to identify moderators of the effectiveness of the interventions.

Searching
PsycINFO, CINAHL, PubMed, and ProQuest Dissertation and Theses were searched from inception up to September 2013. Search terms were reported in a separate online supplement. Relevant web sites, journals, and reference list of previous reviews and included studies were searched manually. Authors were contacted to obtain additional reports. Only studies written in English were eligible for inclusion.

Study selection
Studies were included if they focused on HIV/AIDS prevention interventions, were aimed at young people or the general public, and investigated a specific intervention delivered thorough audio, visual, or printed mass-media in a natural setting. Studies had to provide quantitative data comparing condom use and/or HIV/AIDS-related knowledge in the population pre- and post-intervention. Studies were included if they reported sufficient data to allow the calculation of effect sizes. Studies were excluded if they focused on high-risk populations, used forced exposure to messages, only included individuals who had all been exposed to some campaign content, or if they used interpersonal communication and small media (such as leaflets).

Just over half of the included studies were aimed at the general public, the rest targeted young people. The mean age of participants was 24.25 years. There were approximately equal numbers of men and women participants. The mean proportion of sexually active people was 69%. Most interventions were aimed at condom promotion/education; 42% of interventions included condom distribution. Radio and signage were the most frequently used media channels, with most interventions using a logo, slogan, or brand. Most studies used either a national or a community-based media campaign.

Study data were collected from 1986 to 2005. Half the studies were conducted in Africa. The remaining studies were set in Asia, Europe, the USA, South/Central America, and Australia.

Two authors independently screened papers for inclusion. Any disagreements were resolved in discussion.

Assessment of study quality
It was not reported if a quality assessment was carried out.

Data extraction
Pre- and post-intervention data were extracted to calculate effect sizes (d) for condom use and HIV/AIDS knowledge.

One reviewer extracted data and another reviewer independently coded data for 65% of the studies to ensure accuracy. Disagreements were resolved through discussion.

Methods of synthesis
Pooled effect sizes and corresponding 95% confidence intervals were calculated using random-effects analyses. Heterogeneity between studies was assessed using $I^2$ and the Q statistic. Moderator analyses were also conducted.
Several measures of reporting bias (Begg, trim-and-fill, and Egger’s) were used.

**Results of the review**
Fifty-four reports including 72 separate interventions were included in the review. Sample sizes ranged from 47 to 6,000 people, the mean sample size was approximately 800.

Interventions were associated with a statistically significant increase in condom use \( (d = 0.24, 95\% \text{ CI } 0.19 \text{ to } 0.30, 57 \text{ interventions}) \). HIV transmission knowledge also showed a statistically significant increase \( (d = 0.30, 95\% \text{ CI } 0.18 \text{ to } 0.41, 47 \text{ interventions}) \), and so did HIV prevention knowledge \( (d = 0.39, 95\% \text{ CI } 0.25 \text{ to } 0.52, 65 \text{ interventions}) \). Heterogeneity was detected for all three analyses. This was explored in moderator analyses. Region was a significant moderator with interventions being more effective in Africa for condom use and in Asia for HIV transmission knowledge. Duration of the intervention was a significant moderator of condom use with longer interventions being more effective.

Other moderators were investigated and were reported in the paper.

Checks for possible publication bias were inconclusive.

**Authors’ conclusions**
Mass media interventions may be useful in reducing HIV/AIDS differences between countries.

**CRD commentary**
A number of relevant sources were searched; search terms were reported in a separate online supplement. Attempts were made to identify unpublished studies. As only studies published in English were included, there was a risk that potentially relevant papers in other languages were missed. Independent and duplicated processes were used for study selection and data extraction, which reduced the risk of reviewer error and bias.

Quality assessment of the included studies was not reported, so the quality of the evidence base was unknown. Analyses were of pre-/post-intervention studies only and did not include any studies with control groups. Pre-post study designs have multiple limitations which were acknowledged by the authors.

Suitable methods of synthesis were used. The observed heterogeneity between studies was explored appropriately. The risk for publication bias was assessed in a number of ways, but results from these checks were inconclusive. The authors acknowledged that much of the data focused on short-term effects of interventions, when media effects were likely to be at their peak.

The authors’ conclusions reflected the evidence presented and the overall review process seems to have been robust. However, the potential for language bias and the unknown quality of the evidence should be borne in mind when interpreting the authors’ conclusions.

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

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