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Condom Social Marketing Effects in Low and Middle-Income Countries: A Systematic Review Update, 2010–2019

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Abstract

Objective —to update the prior review from nine-years ago with any additional studies of condom social marketing that examine its effect on condom use.

Data Sources —PubMed, CINAHL, PsycINFO, Sociological Abstracts, and EMBASE. Hand searching of *AIDS*, *AIDS and Behavior*, *AIDS Care*, and *AIDS Education and Prevention*.

Study Inclusion and Exclusion Criteria —(a) published 1990 - January 16, 2019; (b) low- or middle-income country; (c) evaluated CSM; (d) analyses across pre-intervention to post-intervention exposure or across multiple study arms; (e) measured condom use behavior; and (f) sought to prevent HIV transmission.

Data Extraction —Using PRISMA guidelines two reviewers extracted citation, inclusion criteria, methods, study population, setting, sampling, study design, unit of analysis, loss to follow, comparison groups characteristics, intervention characteristics, eligible outcome results.

Data Synthesis —The 2012 review found six studies (combined N=23,048). In meta-analysis, the pooled odds for condom use was 2.01 (95% CI: 1.42–2.84) for the most recent sexual encounter and 2.10 (95% CI: 1.51–2.91) for a composite of all condom use outcomes. Studies had significant methods limitations. Of 518 possible new citations identified in the update, no new articles met our inclusion criteria.

Conclusions —More studies with stronger methodological rigor are needed to help provide evidence for the continued use of this approach globally.

Background

Condom social marketing has historically been a large component of the HIV prevention response globally and condom social marketing programs have been clearly shown to

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increase condom sales (1). However, there is a growing gap between demand for condoms and their availability in settings with a high burden of HIV, which appears to be driven by declining donor support (2). In addition, studies of the impact of condom social marketing on condom use are quite limited(3), and there is also a lack of studies assessing the impact of free condom distribution on condom use (4). Thus, assessing the impact of condom social marketing programs on condom use is important.

In 2012, we published a systematic review and meta-analysis in the *Bulletin of the World Health Organization* of the effect of condom social marketing programs on condom use conducted in low- and middle-income countries and published between 1990–2010 (5). In that review we found six studies that met the minimum inclusion criteria with a combined sample size of 23,048. In meta-analysis, the random-effects pooled odds ratio for condom use was 2.01 (95% confidence interval, CI: 1.42–2.84) for the most recent sexual encounter and 2.10 (95% CI: 1.51–2.91) for a composite of all condom use outcomes. The review found that the rigor of extant studies was weak. We concluded that it would be useful to the field to have research that is more rigorous on the effect of condom social marketing on condom use to guide policy. Herein we update our previous review to examine the evidence base of the efficacy of condom social marketing, and examine the strength of rigor of the extant literature since 2010.

Methods

We conducted an updated systematic review following our previous methods (5) to identify studies published since 2010, the cutoff date for the prior analysis. Our study procedures adhere to PRISMA guidelines (6). Briefly, studies were included if they (a) were conducted in a low- or middle-income country as defined by the World Bank; (b) evaluated a condom social marketing intervention; (c) conducted analyses across pre-intervention to post-intervention exposure or across multiple study arms; (d) measured condom use behavior; and (e) specifically sought to prevent HIV transmission. Our previous search included articles published between January 1990 and March 2010; we updated this search for articles published through January 16, 2019. We searched PubMed, CINAHL, PsycINFO, Sociological Abstracts, and EMBASE using the following updated search terms: (marketing OR sale* OR sold) AND (condom* OR contraceptive*) AND (HIV OR AIDS). We also updated hand searching of four journals (*AIDS*, *AIDS and Behavior*, *AIDS Care*, and *AIDS Education and Prevention*). We screened search results in a two-stage process, first by a single reviewer looking at title and abstract to exclude citations clearly not meeting the inclusion criteria, and then independent extraction of key data by two study staff. Differences identified across the two independently coded data were resolved through an additional review. We made final decisions on article inclusion after full-text review.

Results

The initial search identified 518 unique citations that would possibly meet the inclusion criteria. Of these, 328 were excluded at the first stage of screening and 186 were excluded at the second level of screening by two independent reviewers. Of the four remaining articles which were pulled for full-text review, three (7–9) were excluded for not having pre/post or

multi-arm comparisons, and one (10) was excluded for not having study outcomes meeting the inclusion criteria. We ultimately found no new articles meeting our inclusion criteria with sufficient rigor and measurement of condom use.

Discussion

Condom social marketing has historically been a mainstay of HIV public health interventions, yet the evidence base for impact of condom social marketing on actual condom use is limited. The original meta-analysis analysis we published in 2012 (spanning evidence from 1990 through 2010) showed positive effects, but the number and rigor of studies was a limitation in drawing strong conclusions. We found no new articles meeting our criteria since our last review. The findings from our previous meta-analysis are thus not altered. There is evidence that condom social marketing can increase condom use, but the evidence comes from a limited number of studies with weak rigor. In light of the growing gap in funding for global condom distribution (11) there is a need for more rigorous evaluations of the impact of condom social marketing on condom use.

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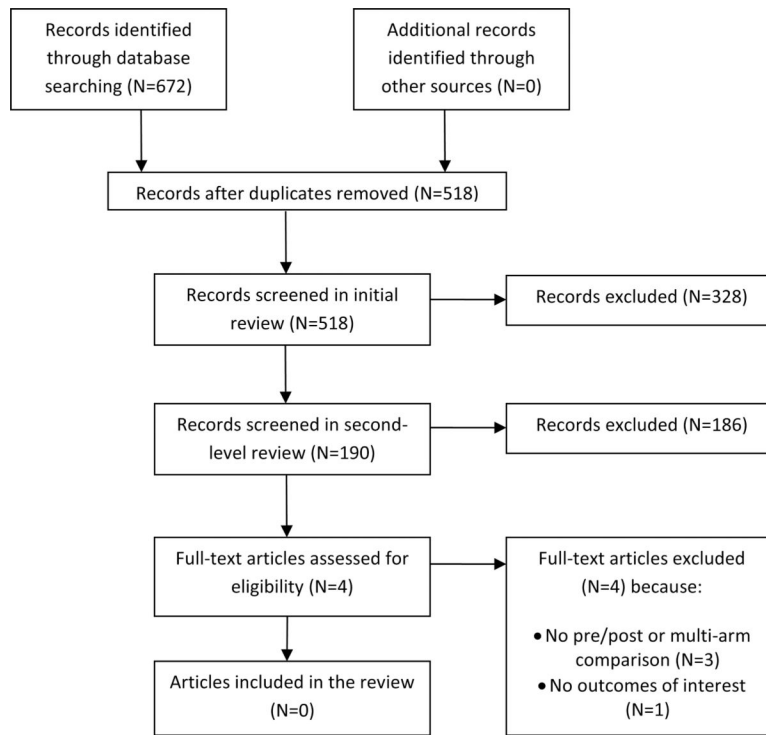


Figure 1.
Flow chart showing disposition of search results