



UKPHA Mini - Symposium

# The effectiveness of social marketing interventions for health improvement: What's the evidence?

Ross Gordon<sup>a,b,\*</sup>, Laura McDermott<sup>a,b</sup>, Martine Stead<sup>a,b</sup>, Kathryn Angus<sup>a,b</sup>

<sup>a</sup>Institute for Social Marketing, University of Stirling, Stirling, UK

<sup>b</sup>The Open University, UK

## KEYWORDS

Social marketing;  
Literature review;  
Nutrition;  
Physical activity;  
Substance misuse

**Summary Objectives:** To review the effectiveness of social marketing interventions designed to improve diet, increase physical activity, and tackle substance misuse.

**Study design and methods:** This article describes three reviews of systematic reviews and primary studies that evaluate social marketing effectiveness. All three reviews used pre-defined search and inclusion criteria and defined social marketing interventions as those which adopted six key social marketing principles.

**Results:** The reviews provide evidence that social marketing interventions can be effective in improving diet, increasing exercise, and tackling the misuse of substances like alcohol, tobacco, and illicit drugs. There is evidence that social marketing interventions can work with a range of target groups, in different settings, and can work upstream as well as with individuals.

**Conclusions:** Social marketing provides a very promising framework for improving health both at the individual level and at wider environmental and policy-levels. Problems with research design, lack of conceptual understanding or implementation are valid research concerns.

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## The growth of social marketing

The last few years have witnessed a growth in interest, research, and practice in social marketing by policy makers, practitioners, and health professionals in the UK. Evidence of the growing interest in social marketing is abundant. The UK govern-

ment's recent public health white paper talks of the 'power of social marketing' and 'marketing tools applied to social good [being] used to build public awareness and change behaviour'.<sup>1</sup> Since then, several government sponsored social marketing initiatives such as the National Social Marketing Strategy (NSMS) for Health (led by the National Consumer Council and the Department of Health<sup>2</sup>) have emerged. The British Medical Journal has responded to this growing interest by publishing articles outlining social marketing's basic precepts.<sup>3,4</sup>

\*Corresponding author. Institute for Social Marketing, University of Stirling, Stirling, FK9 4LA, UK. Tel.: +44 1786 466457; fax: +44 1786 466449.

E-mail address: [ross.gordon@stir.ac.uk](mailto:ross.gordon@stir.ac.uk) (R. Gordon).

As part of the NSMS plan to produce a marketing strategy for health improvement in England, a series of literature reviews were conducted to investigate the effectiveness of social marketing as a health intervention approach. This paper reports findings from three literature reviews that examine its effectiveness in the areas of nutrition, physical activity, and substance misuse.

## What is social marketing?

Social marketing is not a theory in itself. Rather, it is a framework or structure that draws from many other bodies of knowledge such as psychology, sociology, anthropology and communications theory to understand how to influence people's behaviour.<sup>5</sup> Several definitions of social marketing exist, but one of the most useful<sup>6</sup> describes social marketing as follows:

'Social marketing is the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programs designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of society'. (p. 7)

The unique feature of social marketing is that it takes learning from the commercial sector and applies it to the resolution of social and health problems. Four key features are illustrated in this definition. The first is a focus on *voluntary* behaviour change: social marketing is not about coercion or enforcement. The second is that social marketers try to induce change by applying the principle of *exchange*—the recognition that there must be a clear benefit for the customer if change is to occur.<sup>7</sup> Thirdly, *marketing techniques* such as consumer oriented market research, segmentation and targeting, and the marketing mix should be used. Finally, the *end goal* of social marketing is to improve individual welfare and society, not to benefit the organization doing the social marketing; this is what distinguishes social marketing from other forms of marketing.<sup>8</sup>

The emphasis on society as well as the individual also illustrates another key point about social marketing: it can apply not only to the behaviour of individuals, but also to that of professionals, organizations and policymakers. As well as downstream, social marketing can be applied '*upstream*'. It might seek to change the behaviour of professionals (encourage GPs or dentists to be more proactive in prevention, for example); the behaviour of retailers (make them more compliant with

the law on selling tobacco or alcohol to minors, or persuade them not to stock confectionery at checkouts); and the behaviour of policymakers and legislators (convince them to pass smoke free legislation, improve housing policy, or to restrict advertising to children).<sup>9,10</sup>

## Review methods

### Defining social marketing

Three separate literature reviews were undertaken to examine the effectiveness of social marketing in improving diet, increasing exercise, and tackling substance misuse. Although previous reviews of social marketing effectiveness exist, they are few in number and have often failed to state explicitly how social marketing interventions have been defined or conceptualize social marketing in widely differing ways.

In 2002, Andreasen<sup>11</sup> identified what he termed six essential benchmarks of a 'genuine' social marketing intervention (see Table 1). In the current reviews, these benchmarks were used as a set of criteria against which potentially eligible interventions were assessed. If an intervention was judged to meet all six criteria it was defined as having adopted a social marketing approach, regardless of the label which the author used to describe the programme. If it failed to meet even one of the criteria, it was excluded from the review.

### Searching for evidence

Different search strategies were used for each of the three reviews. For full details of these searches please refer to the original reports.<sup>13–15</sup> Only very brief summaries are provided here.

The nutrition review was based upon a previous review<sup>12</sup> and was fully systematic. To update the original review eight electronic databases were revisited and searched for relevant literature from 2003 onwards. This yielded 67 articles that were retrieved in full text and examined against social marketing criteria. Thirty-one studies met all six social marketing criteria and were included in the nutrition review.

For the physical activity review, eight electronic databases were searched using combinations of the terms physical activity, exercise, and social marketing. This yielded 110 articles that were assessed against Andreasen's six criteria for a social

**Table 1** Andreasen's Benchmark Criteria

Benchmark	Explanation
1.	Behaviour change Intervention seeks to change behaviour and has specific measurable behavioural objectives
2.	Consumer research Intervention is based on an understanding of consumer experiences, values and needs Formative research is conducted to identify these
3.	Segmentation and targeting Intervention elements are pre-tested with the target group Different segmentation variables are considered when selecting the intervention target group
4.	Marketing mix Intervention strategy is tailored for the selected segment/s Intervention considers the best strategic application of the 'marketing mix'. This consists of the four Ps of 'product', 'price', 'place' and 'promotion'. Other Ps might include 'policy change' or 'people' (e.g. training is provided to intervention delivery agents). Interventions which only use the promotion P are social advertising, not social marketing
5.	Exchange Intervention considers what will motivate people to engage voluntarily with the intervention and offers them something beneficial in return. The offered benefit may be intangible (e.g. personal satisfaction) or tangible (e.g. rewards for participating in the programme and making behavioural changes)
6.	Competition Competing forces to the behaviour change are analysed. Intervention considers the appeal of competing behaviours (including current behaviour) and uses strategies that seek to remove or minimize this competition

Adapted from McDermott et al.<sup>12</sup>.

marketing intervention. Twenty-two interventions met all six criteria and were included in the review.

Because a wealth of data exists on substance misuse interventions, a search was conducted for good quality reviews on this topic and the reference lists for these reviews provided the sampling frame for potentially eligible social marketing studies. Literature sources for the reviews included the Cochrane Database of Systematic Reviews and the Centre for Reviews and Dissemination's databases (Database of Abstracts of Reviews of Effects and Health Technology Assessment Database). This yielded 35 systematic reviews, and from these, 310 individual studies were retrieved and assessed in full text against Andreasen's six criteria. Thirty-five studies met all six of Andreasen's criteria for a social marketing intervention and were included in the review.

### Study synthesis

Formal statistical synthesis was not possible because of the heterogeneity in interventions, study designs, and outcome variables, so a qualitative synthesis was used. We weighted our conclusions by study quality, with greater emphasis given to higher quality studies.

### Results

The intervention types, settings, target groups and outcome measures covered by the three reviews are summarized below (see Table 2). The key results from each review are now discussed in turn.

#### Nutrition interventions

Of the 31 included social marketing nutrition interventions, nine were school based, five were multi-component community-based interventions, five were other non school-based youth interventions, three were in church settings, and two involved family therapy. The remaining seven were delivered in heterogeneous settings including a workplace and a supermarket.

Of the 18 studies that sought to increase fruit and vegetable intake, 10 had a positive overall effect, six had mixed or moderate effects, one had no effect, and one was counter productive. Of the effective studies, for example, one used an education-based social marketing intervention to produce a mean increase in daily fruit and vegetable consumption of 0.56 servings among low-income women in Maryland, USA.<sup>16</sup> Another study reported significant improvements in the fruit and vegetable

**Table 2** Scope of reviews

	Examples
Intervention types	School curriculum, mass media, multi-component, community, family therapy
Study settings	School, community, supermarkets, workplaces, churches
Target populations	Young children, teenagers and adults, men and women, different ethnic and socio-economic groups
Evaluation design	Usually randomized controlled trial or quasi-experimental design
Outcome measures	Nutrition review: fruit and vegetable intake, fat intake, nutritional knowledge, psychosocial changes, physiological changes Physical activity review: physical activity, knowledge, psychosocial variables, physiological outcomes, environmental/policy changes Substance misuse review: smoking prevention, alcohol use and harm, illicit drug use, smoking cessation, retailer compliance, policy adoption

consumption of primary school children in England and Wales following the implementation of a rewards-based peer modelling intervention.<sup>17</sup> Overall, these results provide strong evidence that social marketing can improve fruit and vegetable consumption.

Eighteen studies sought to reduce fat intake. Of these, eight had a positive overall effect, seven had mixed or moderate effects and three produced no change. For example, the CATCH school-based programme implemented in the US reported a significant reduction in fat intake among students in intervention schools compared with control schools ( $p < 0.001$ ), and also successfully lowered the percentage of calories from total fat in school meals.<sup>18</sup> Similarly, a church-based intervention based on motivational interviewing reported small but significantly greater changes in the desired direction for percentage calories from fat among church-goers in the intervention condition ( $p < 0.05$ ).<sup>19</sup> Overall, these studies provide reasonable evidence that social marketing interventions can influence fat intake.

Of the 11 studies that sought to improve dietary knowledge, nine reported a positive overall effect. For example, a '5-a-Day' programme with low-income women (comprising nutrition sessions, printed materials and direct mail) significantly increased their knowledge of the recommendation to eat five or more fruits and vegetables a day ( $p < 0.001$ ).<sup>16</sup> Although the remaining two studies reported mixed or moderate effects, overall there is strong evidence that social marketing can improve nutritional knowledge.

Social marketing interventions were also successful in influencing psychosocial factors associated with nutrition, such as attitudes towards healthy eating and self-efficacy for eating a better diet. Thirteen out of 17 studies had a positive effect on at least one psychosocial variable. For example, a

badge-based intervention with Boy Scouts in Houston, Texas brought about significant improvements in boys' preferences for fruit, juice and vegetables as well as their perceptions of positive outcomes associated with healthy eating ( $p = 0.01$  for fruit and  $p = 0.0001$  for vegetables).<sup>20</sup> In another study, a church-based intervention brought about significant improvements in self-efficacy for eating five daily portions of fruit and vegetables among African-American church members.<sup>21</sup> Overall, the review provides strong evidence that social marketing can improve nutrition related psychosocial variables.

The evidence for effects on physiological variables is less convincing. Only three out of the 13 studies that examined this had a positive effect on at least one physiological variable; though positive changes were seen for blood pressure and cholesterol none were reported for body mass index (BMI) in any of the studies.

### Physical activity interventions

Of the 22 included physical activity interventions, 14 were community-based, six were school based, one used the media, and one was implemented in a workplace setting.

Of the interventions that sought to change behavioural outcomes, eight out of 21 had a positive effect overall. Seven studies reported mixed results and six had no effect. Of the effective studies, for example, Nieger<sup>22</sup> implemented a workplace intervention designed to increase physical activity among employees and reported significant improvements on two measures of activity: with participants significantly more likely to participate in moderate physical activity and less likely to be involved with mild physical activity. The Wheeling Walks interventions,<sup>23</sup> a community-based campaign to promote

walking amongst sedentary 50–65 year-olds reported an improvement on physical activity levels with behaviour observation and self-reporting measures showing a positive effect. Overall, these studies provide reasonable evidence that social marketing can improve exercise behaviours.

All four studies that sought to improve exercise related knowledge reported positive effects. For example, the Agita Sao Paulo Program used a media campaign, events and galas days to improve knowledge of the benefits of physical activity and risk behaviours amongst the residents of the city of Sao Paulo, Brazil.<sup>24</sup> Overall, there is strong evidence that social marketing can influence knowledge related to physical activity.

Eleven studies sought to influence psychosocial variables such as self-efficacy or perceived social support to exercise regularly. Six of these studies found a positive effect on at least one variable, while five had no effect. One example of an effective intervention is the San Diego Family Health Project,<sup>25</sup> a school-based intervention developed for American–Indian children the USA. Evaluation data showed that self-efficacy to exercise was significantly higher among the treatment group compared to the control. Overall, there is reasonable evidence that social marketing can affect exercise related psychosocial variables.

Fourteen studies reported physiological outcome results using a range of measures including BMI, CVD (cardiovascular disease) rates, cholesterol level and blood pressure. In terms of impact, only four studies reported positive effects. A further four reported mixed effects and six studies found no change. One intervention which reported improvements in physiological measures was the Pawtucket Heart Health Program directed towards lower income adults in a Rhode Island city in the US.<sup>26</sup> The study reported a bigger reduction in CVD rates among the intervention group compared with the control and although BMI significantly increased among the control group no increase was seen among individuals in the intervention condition. Overall, there is weaker evidence that exercise-based social marketing interventions can improve physiological outcomes.

Six of the social marketing physical activity interventions aimed to effect policy or environmental changes. Measurable outcome data was not reported due to the difficulties in measuring policy and environmental change in a useful and meaningful way, however examples from some of the studies of such changes include the formal adoption of physical activity programmes by schools, the construction of facilities such as walking paths or leisure facilities and the formation of policy goal

groups or committees in intervention settings. One example is the CATCH school intervention<sup>18</sup> which took an environmental and policy approach to enrich physical activity classes, leading to increased student's physical activity in class and out of school. Policy changes were maintained following the intervention.

## Substance misuse interventions

Of the 35 included substance misuse interventions, 16 were school-based, 10 were multi-component community-based interventions, four primarily used the media, two were environmental interventions and three were delivered in other heterogeneous settings including a church, a workplace, and a family-based setting.

Of the interventions that were aimed at smoking prevention, 13 out of 18 studies had a positive effect overall, four had mixed or moderate effects and one had no effect. In one study, for example, students who received the Project SMART social influences programme had significantly lower smoking onset than control students, equivalent to a 38% reduction, at the end of 1 year.<sup>27</sup> Similarly, Project SixTeen, designed to reduce both illegal sales of tobacco and youth tobacco use, had a significant effect on smoking prevalence (smoking in the past week) 5 years after the start of a 3-year intervention ( $p < 0.05$ ); prevalence was 3.8% lower in the intervention communities compared with communities which had received only a school-based programme.<sup>28</sup> Overall, there is strong evidence that social marketing interventions can be successful in preventing smoking.

Of the substance misuse interventions that dealt with alcohol prevention and harm minimization, eight out of 13 had a positive effect overall, four had mixed or moderate effects and one had no effect. One of the effective studies was a trial of a 3 year school-based programme,<sup>29</sup> which found a significant impact on daily alcohol use at immediate post-test and at 2 years after the start of the intervention. There was also a significant decrease in number of drinks consumed per occasion at both follow-ups. Similarly, Project Northland, comprising a 3-year school curriculum, peer and parent activities and community taskforces, found a significant impact on past month and past week alcohol use ( $p < 0.05$  for each) in the intervention group compared with the control group at 2.5 years, although the effect had dissipated at 4 years.<sup>30</sup> Overall, there is strong evidence that social marketing can positively affect alcohol misuse.

Twelve interventions dealt with illicit drug use prevention and, of these, eight had a positive effect overall. Three had mixed or moderate effects and one had no effect. One effective school-based programme, Project STAR,<sup>31</sup> reported significant reductions in last month marijuana use in intervention students compared with controls both in the short term and at 2 year follow-up. Overall, the evidence for illicit drug use prevention is strong.

For smoking cessation, two of the nine interventions had a positive effect overall. Five had modest or weak effects and two had no effect (or results that were unclear). For example, the Alliance of Black Churches Project<sup>32</sup> adopted a community organization approach to smoking cessation and included the formation of church coalitions as well as individually focussed activities and community activities. The intervention community had a higher quit rate than the comparison community, and church goers had higher quit rates than non-church goers. Although the differences were not significant, the trend suggested a possible intervention effect. The Minnesota Heart Health Programme,<sup>33</sup> comprising media, community organization, training of professionals and community cessation support, had a significant impact on women's smoking prevalence but not on men's. Overall, there is weaker evidence for effectiveness in relation to smoking cessation.

Finally, three of studies reported increases in policy adoption over the intervention period and there was modest evidence from four of the studies of increases in retailer compliance. Process evaluation data suggested increases in community wide attention to issues (support for policy, increased prevention activity). Also there was evidence of adoption of programme activities after the end of the funding period of interventions. For example the CATCH intervention sought to promote the adoption of formal tobacco-free policies in its 56 intervention schools, spread across three states.<sup>34</sup> The number of schools adopting policies increased markedly over the three years of the study from a baseline figure of 49.7–76.8%. However, because of other events and trends at the time of the intervention, it was difficult to attribute the policy adoption process to the intervention.

## Discussion

There are some limitations to the evidence reported in the three reviews. First, two of the three reviews were not fully systematic although they were conducted using a methodology that

brought them very close to systematic. There are also limitations caused by imperfect research designs used by the studies included in the reviews, and their results should be considered in light of these methodological limitations. For example, because of the evaluation designs, it is often difficult where effects are found to identify whether these effects are attributable to particular intervention components, or to the combination of activities, or to other factors such as secular trends. In addition, in many studies, allocation to intervention or comparison group was carried out at the level of the school, city or community, followed by analysis at the level of the individual, which may lead to spurious findings. Differences at baseline between intervention and comparison communities were found in several studies, which may cause differential rates of change in outcomes between groups, and attrition was also a problem in a number of studies, particularly those with long-term follow-ups.

Despite the limitations of the research there are several useful learning points that can be obtained from the reviews. The main point is that social marketing interventions can be effective; there is reasonably strong evidence of their effectiveness for nutrition, and alcohol, tobacco and illicit drug use, whilst the results for physical activity were more mixed. There was little evidence of harmlessness caused by social marketing interventions. Moreover, the results stand up well in comparison to the findings in other systematic reviews.

The research illustrated that social marketing interventions of different types can be effective and that they can work with different target groups: young people, adults, minority ethnic and disadvantaged groups. Furthermore the results demonstrated that social marketing interventions can be effective in a range of different settings: schools, the workplace, church based, community and family-based settings, clinical practices, supermarkets and media-based settings amongst others. The reviews also produced evidence that both narrow and broad focus social marketing interventions can be effective.

Overall the effectiveness reviews reported in this article identify social marketing as a very promising health behaviour intervention approach.

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