THE INFLUENCE OF MASS MEDIA CAMPAIGNS ON PUBLIC HEALTH BEHAVIOR

A Literature Review

Benjamin Gleason, PhD and Tanner Brooks, MA

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INTRODUCTION

Public health mass media campaigns, by themselves or in combination with other programs, can significantly influence health behaviors of populations. For over a decade, the National Academy of Medicine has indicated a strong belief in the power of media and communications as a public health strategy. In our highly pervasive media environment—in which the average American adult spends over 10 hours and the average teenager spends over 8 hours per day consuming media—there are numerous and far-ranging opportunities to reach audiences with media interventions (Institute of Medicine, 2002; Nielsen, 2016; Common Sense Media, 2015). However, these campaigns operate in a crowded media field full of competing messages from myriad sources. The combined advertising and promotional expenditures of major tobacco companies in 2014, for example, was $8.5 billion (Federal Trade Commission, 2016). Despite this heavily saturated and contested media environment, **studies demonstrate that, under proper conditions, public health mass media campaigns can have a powerful impact and be effective tools in promoting positive public health behavior.**

Investigating the effectiveness of a 1993 Massachusetts youth anti-smoking campaign, Siegel et al. (2000) found that, despite no effect from radio and outdoor advertising, the television component of the campaign successfully decreased smoking among young adolescents. **He recommended better design and evaluation of future antismoking media initiatives to identify mediating variables, explore age-specific effects, measure media exposure, and confirm findings in other demographics.** A similar review of mass media campaigns on AID conducted by Elder (2004) revealed that with proper message content, delivery, and pretesting, anti-AID campaigns yielded beneficial results when they were carefully planned, well executed, gained adequate audience exposure, and were conducted in tandem with other prevention programs. He concluded that maximizing the efficacy and efficiency of future campaigns must include examining influences such as the effectiveness of campaign themes and messages and the impact of changing media markets.

Wakefield (2010) argued that mass media campaigns can produce positive outcomes throughout large populations in a range of health-risk areas when implemented in conjunction with policies that support and encourage behavior change, access to community-based programs, and availability of essential products and services. Randolph et al. (2004) proposed that mass media campaigns aim to influence a community's information environment by increasing the quantity of information available on an issue (Institute of Medicine, 2002; Nielsen Company, 2016; Common Sense Media, 2015; Federal Trade Commission, 2016; Siegel, 2000; Elder, 2004; Wakefield, 2010; Randolph, 2004; Abroms, 2008) and reframing the issue as a public health concern. They advised a new understanding of these campaigns utilizing a broader approach that addresses multiple levels and complements the efforts of supporting social and activist groups. Advocating for an ecological model of health, Abroms et al. (2008) suggested that mass media campaigns' potential is best understood and realized by considering health determinants across multiple fields of influence including social-network, community-level, and place-based barriers to change. As such, rather than focusing solely on individual-level behavior, campaigns must impact larger social systems to maximize their effect on public health.

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ARTICLE 1 THE IMPACT OF AN ANTISMOKING MEDIA CAMPAIGN ON PROGRESSION TO ESTABLISHED SMOKING: RESULTS OF A LONGITUDINAL YOUTH STUDY

SUMMARY

Despite the increasing use of antismoking media campaigns, their effectiveness remains unclear, and studies of the impact of these campaigns on youth smoking have shown mixed results. Youth-targeted aspects of a 1993 Massachusetts antismoking media campaign—conducted through television, radio, and outdoor advertisements such as billboards—yielded a similarly uneven impact. Examination of the campaign's effect among Massachusetts adolescents revealed that young adolescents ages 12 to 13 exposed to the television component of the campaign were significantly less likely to progress to established smoking. However, antismoking television advertisements had no effect on older adolescents ages 14 to 15. Exposure to radio and outdoor advertisements had no effect on smoking initiation among youth in either group (p. 380-383).

Explanations for the effect of television versus radio or outdoor antismoking advertisements include the possibilities that television is a more powerful medium for reaching adolescents, and Massachusetts youth exposure to radio and outdoor antismoking advertising was not sufficiently extensive to influence their smoking behavior. **The finding that the campaign was effective only among younger adolescents "may indicate that older adolescents are resistant to antismoking messages," as well as the possibility that "specific messages used in the Massachusetts media campaign were most salient among young adolescents"** (p. 384). The study additionally found that young adolescents (though not older adolescents) exposed to antismoking television advertisements were more likely to have an accurate rather than inflated perception of youth smoking prevalence—known to have a strong influence on youth smoking initiation (p. 383-384).

While the authors cautioned against concluding that radio and outdoor antismoking advertisements are ineffective (i.e., even if media campaigns may have a difficult time reaching older adolescents), the study "provides evidence that antismoking media campaigns may reduce smoking initiation among youths, especially among younger adolescents" (p. 385). **Continued efforts should identify possible intervening variables, further explore age-specific effects of media campaigns, quantify media exposure, examine different messages' efficacy, and confirm these findings in other populations to better design and evaluate future antismoking media initiatives** (p. 385).

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Siegel, M. &. (2000). The impact of an antismoking media campaign on progression to established smoking: results of a
    longitudinal youth study. *American Journal of Public Health, 90*(3), 380-386.

ARTICLE 2 EFFECTIVENESS OF MASS MEDIA CAMPAIGNS FOR REDUCING DRINKING AND DRIVING AND ALCOHOL-INVOLVED CRASHES

SUMMARY

Numerous mass media campaigns on alcohol-impaired driving seeking to persuade individuals to personally avoid or prevent others from drinking and driving have been implemented in the past several decades. The authors completed a systematic review of the effectiveness of eight studies of carefully planned and well-executed campaigns, finding that **under proper conditions, mass media campaigns can both contribute to reducing AID and alcohol-related crashes and provide cost-saving societal benefits** (p. 57-65).

Aspects of mass media campaigns on AID that may influence their effectiveness relate to message content, delivery, and pretesting. Content must involve themes that adequately motivate desired behavior change, assuring that the target audience is exposed to, attends to, and comprehends the message. In addition, campaigns should assess *before implementation* which themes or concepts are most relevant to the target audience. The campaigns reviewed were developed using practices that most likely maximized their effectiveness, including pretesting of messages and efforts to maximize the length and frequency of audience exposure. **Studies found a 13% decrease in alcohol-related crashes resulting from the mass media campaigns**. Studies using roadside blood alcohol concentration (BAC) test results similarly showed net decreases of 158% and 30% in the proportion of drivers with BAC levels above the legal limit. Campaign cost-benefit analyses found savings in areas such as medical costs, insurance administration, property damages, and productivity losses, as well as substantial estimated benefits to society exceeding the costs of developing and airing campaign messages (p. 57-63).

While none of the studies reviewed offers unequivocal evidence that a given campaign decreased AID or alcohol-related crashes, across the body of evidence reviewed the estimated effects of the campaigns consistently indicate cost-saving, beneficial results, and the studies "provide strong evidence that mass media campaigns that are carefully planned, well executed, attain adequate audience exposure, and are implemented in conjunction with other ongoing prevention activities, such as enhanced AID law enforcement, are effective in reducing alcohol-related driving and alcohol-related crashes" (p. 65). Though the campaigns evaluated may serve as a preliminary guide to developing successful mass media campaigns, **maximizing the efficacy and efficiency of future campaigns must also involve investigating factors such as the relative effectiveness of specific campaign themes and messages, message/recipient interactions, and the potential impact of the changing media market** (p. 63-65).

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Elder, R. W. (2004). Effectiveness of mass media campaigns for reducing drinking and driving and alcohol-involved crashes: a systematic review. *American Journal of Preventive Medicine, 27*(1), 57-65.

SUMMARY

In recent decades, mass media campaigns have attempted to affect various health behaviors by exposing large populations to messages through existing media that reach mass audiences, such as television, radio, outdoor media, and print. However, exposure to such campaigns is generally passive, resulting from an incidental effect of routine uses of media, and frequently competes with factors such as pervasive product marketing, the drive of addiction, and powerful social norms that often impede sustained, positive results. Despite these hindrances, with contributing efforts such developing policies that encourage and support behavior change, access to community-based programs, and availability of essential services and products, mass media campaigns can produce positive outcomes throughout large populations in a range of health-risk areas (p. 1-4).

Comprehensive reviews of population studies show that mass media campaigns were associated with a reduction in youth smoking initiation and an increase in adults stopping smoking. **For example, smoking prevention in young people was more likely when campaigns were combined with school and/or community programs, and reductions in adult smoking were observed when campaigns were combined with other tobacco control efforts, such as increased tobacco taxation or smoke-free policies**. Programs targeting vaccination, diarrhea, and sudden infant death syndrome achieved substantial improvements using mass media, specifically as a strategy used in multicomponent efforts. Women's cancer prevention programs also saw improvements when combining mass media elements with availability of screening services, and reviews of campaigns aimed at lowering birth and HIV infection rates consistently demonstrated that discrete mass media campaigns can affect behavior. Additional road safety, blood donation, and organ donation and transplantation efforts all found positive results associated with mass media campaigns (p. 3-11).

Under certain conditions, mass media campaigns work, and can "directly or indirectly produce positive changes or prevent negative changes in health-related behaviors across large populations" (p. 11). **The probability of success significantly increases with multiple interventions and when target behavior is episodic rather than habitual.** Creating policies that support opportunities for behavior change and ready access to key products and services are crucial to motivate individuals to act on media messages. **Additionally, better-funded and longer-term investment in campaigns is necessary to achieve sufficient population exposure to media messages and extend their effects, and careful planning and testing of messages is essential**. Though isolating the independent effects of mass media campaigns is difficult, considerable evidence has been garnered that, in aggregate, yields "a substantial body of support for the conclusion that mass media campaigns can change population health behaviors" (p. 10-12).

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Wakefield, M. A. (2010). Use of mass media campaigns to change health behaviour. *376*(9748), pp. 1261-1271.

ARTICLE 4 LESSONS LEARNED FROM PUBLIC HEALTH MASS MEDIA CAMPAIGNS: MARKETING HEALTH IN A CROWDED MEDIA WORLD

SUMMARY

Due to their wide reach, cost-effectiveness, and appeal, public health mass media campaigns have become a major tool in health promotion and disease prevention. However they face a crowded media environment full of competing messages from myriad sources. These campaigns are in essence exercises in information control which, to be successful in this context, must both increase the amount of information available on an issue, as well as frame or redefine the issue as a public health problem, ultimately leading to qualitative and quantitative change in a community's information environment on the topic of interest (p. 419-421).

A review of literature on recent campaigns suggests that factors or conditions most likely contributing to success include effective manipulation of the information environment to ensure sufficient audience exposure to the campaign's messages and themes; harnessing social marketing tools to develop appropriate messages for distribution; and creating a supportive environment structure that assists the target audience in undertaking the recommended change(s). Additional aspects such as developing campaigns with a thorough understanding of health-behavior determinants, and process analysis evaluating midcourse exposure to campaign messages must also be addressed (p. 421-431).

Lessons from the review include, first and foremost, that **campaigns must influence the information environment, most effectively done through simple, direct messages framed in a way that successfully redefines the issue for the target audience.** Assessing whether the current information environment is hospitable or hostile to the message and taking into account competitors' strengths and behaviors are also crucial. Campaign planning can be improved through the use of message effects theories and tailoring to devise campaign messages, as well as pretesting of messages and channels. Campaign planners also need to help build supportive environments and opportunity structures that allow the target audience to act on recommended messages. Lastly, sustainability of campaign effects can be achieved through reinforcing strategies such as legislation and regulation. For example, campaigns that help build community coalitions or influence policy may lead to more positive, long-lasting health effects (p. 431-433).

Rather than simple or straightforward projects in promoting healthy behaviors and discouraging unhealthy behaviors, public health mass media campaigns are exercises in information control operating under a complex range of conditions and constraints. The conventional understanding of these campaigns must be revised toward a new theory that incorporates a social change perspective involving **"a more holistic approach that focuses on multiple levels and takes into account both direct, immediate effects and indirect, long-term effects"** (p. 433). Additionally, campaign planning must consider the efforts of more than just public agencies and take into account the work of social and activist groups advocating changes in institutional policies and practices in the public health sphere (p. 420, 431-433).

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Randolph, W. &. (2004). Lessons learned from public health mass media campaigns: marketing health in a crowded media world. *Annual Review of Public Health, 25*, 419-437.

ARTICLE 5 THE EFFECTIVENESS OF MASS COMMUNICATION TO CHANGE PUBLIC BEHAVIOR

SUMMARY

The recent rise of ecological models of health—which consider both the traits of individuals and the contexts in which they live—has allowed for a clearer appreciation that the determinants of public health exist on multiple levels and include not only individual characteristics (e.g. attitudes and beliefs) but also the characteristics of social networks, the organizations in people's lives, and the neighborhoods where they live. To maximize success, public health mass media campaigns must in many cases target their efforts at a range of these varying factors or levels of influence, rather than focusing exclusively on individual-level behavior (p. 219-222).

The majority of campaigns reviewed targeted individual-level behaviors, and many had great success, such as the Florida Department of Health's "truth" anti-smoking campaign. **However, mass media interventions can be, and have been, successful in non-individual fields of influence as well, including the social network field; the group, community, or population field; and the local and distal place fields.** Examples of campaigns stimulating beneficial changes in social-network level factors include the Harvard mentoring project that generated over 700,000 calls to a hotline from people interested in mentoring underprivileged children, and a North Carolina Department of Public Health effort using the tagline, "Talk to your kids about sex. Everyone else is," which increased the likelihood of parent-adolescent dialogue about sex. At the community level, campaigns targeting social norms relating to alcohol consumption among college students have corrected misperceptions about normative levels of college drinking, thereby reducing consumption. Additionally, place-based campaigns such as Smoke-free Movies and the Florida Tobacco Control Program have demonstrated success using media advocacy to change governmental laws and policies, the availability of products and services, and the content of media messages in our environment (p. 222-227).

Rather than aiming public health mass media campaigns solely at changing individuals, their potential is better understood and pursued by embracing an ecological framework that takes into account health determinants across multiple fields of influence. Interventions should not ignore the larger social system, including social-network, community-level, and place-based barriers to change. By utilizing mass media to engage factors from non-individual fields of influence, such as social support, community norms, cultural messages, and access to goods and services, "we should be able to improve greatly the likelihood of achieving large-scale changes in public behavior" (p. 228). Furthermore, to produce the greatest beneficial effect on public health behaviors, public health program planners must evaluate their opportunities to harness media to target both people and environments in a way that supports, complements, and extends related investments in improving population health (p. 227-229).

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CONCLUSION

This article aimed to review relevant up-to-date research on the effect of mass media campaigns, including factors that influence public health behavior change. This review examined five studies about the complex relationship between mass media messaging and public health. Broadly speaking, the research included in this review found that media campaigns are often most effective when integrated into comprehensive public health campaigns, including access to community-based efforts, and availability of public health services. Media campaigns can be an important part of changing public health behavior, though there are significant factors involved, including an overall crowded media landscape in which, for example, tobacco companies spend billions of dollars per year promoting their products, and the degree to which media campaigns are incorporated into a social-ecological framework in which multiple levels can influence individual behavior. The research in this review included a number of important considerations that public health organizations may want to consider as they attempt to influence public health behavior.

First, Siegel and Biener (2000) reminded prevention specialists, community-based organizations, and others that while anti-smoking media campaigns are becoming more common, the results of their effectiveness remains unclear. They found that while younger teens are open to reframing anti-smoking messages, older adolescents aged 14-15 are more resistant to them. Thus, the authors proposed that continued efforts should identify possible intervening variables, further explore age-specific effects of media campaigns, quantify media exposure, examine different messages' efficacy, and confirm these findings in other populations to better design and evaluate future antismoking media initiatives.

Second, Elder et al (2004) conducted a systematic review of effective media campaigns, finding that under proper circumstances, media campaigns can effectively reduce negative consequences (i.e., crashes) from AID. For example, media messages should be tested before implementation in order to make sure relevant messages can be understood by target audiences. While the authors presented evidence of a reduction in negative consequences of alcohol-related driving (e.g., reduction in drivers' blood-alcohol concentration), they noted a strong alignment between campaign themes, audience interactions with the media campaign themes, and the integration of media campaigns in comprehensive public health campaigns.

Third, Wakefield et al (2010) found that media campaigns, while popular, rely on passive consumption of media messages that compete with powerful social norms that challenge pro-social public health behavior. They reported that success with smoking prevention was achieved when coupled with school and community programs and other tobacco control policies (i.e., increased taxes and/or smoke-free policies). In addition, they noted that prevention efforts are more likely when efforts are multiple (i.e., as opposed to single efforts), well-funded, and are carefully planned and tested before implementation.

Fourth, Randolph and Viswanath (2004) suggested that public health campaigns should utilize simple, direct messages that are framed in a way to redefine the concern as a public health issue. In addition to testing the effectiveness of messages prior to implementation, the authors recommended a multi-pronged approach including legislation, regulation, and community coalitions that support long-term health outcomes.

Finally, Abroms (2004) proposed that media campaigns target their messages across multiple levels of influence, including the social network, group, community, as well as local and distal contexts, rather than only at the individual level, and in a single location. For example, the authors described network-level changes, such as a mentoring project that generated over 700,000 calls from interested people, and community level changes, including social norms campaigns. The author suggests taking a social-ecological approach to trying to affect

changes in public health (note: please see Prospectus Group's document "Social-Ecological Approach: A Literature Review" for pertinent research and application of this approach).

AUTHOR INFORMATION

Benjamin Gleason, PhD is the Director of Applied Research for the Prospectus Group. He earned a PhD in Educational Psychology & Educational Technology from Michigan State University, researching how to best support communities of learners through educational technology. Before academia, Benjamin has worked in youth and adult-serving learning spaces for almost fifteen years, from designing youth-initiated community service projects and teaching high school in Richmond, California, to working as a university instructor in Guatemala. Benjamin is also a founder of the Prospectus Group.

Tanner Brooks, MA earned his BA in Political Science from Oberlin College and an MA (with distinction) in International Studies and Diplomacy from the University of London School of Oriental and African Studies, where his thesis focused on examining the application of international human rights norms to the experience of child soldiers in Sierra Leone. He has a decade of experience in national and international activism, advocacy, and education, from working on political campaigns, nonprofits, and political action committees to writing and teaching politics and sociology as a professor in Tunisia. His most recent work involves mentoring and tutoring teenage survivors of sex trafficking.

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