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The Effectiveness of Mass Communication to Change Public Behavior

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Abstract

This article provides an overview of the ways in which mass communication has been used—or can be used—to promote beneficial changes in behavior among members of populations. We use an ecological perspective to examine the ways in which mass media interventions can be used to influence public behavior both directly and indirectly. Mass media interventions that seek to influence people directly—by directly targeting the people burdened by the public health problem of concern and/or the people who influence them—have a long basis in public health history, and recent reviews have clarified our expectations about what can be expected from such approaches. Mass media interventions that seek to influence people indirectly—by creating beneficial changes in the places (or environments) in which people live and work—have equal if not greater potential to promote beneficial changes in population health behaviors, but these are currently less explored options. To have the greatest possible beneficial influence on public behavior with the public health resources available, we recommend that public health program planners assess their opportunities to use media to target both people and places in a manner that complements and extends other investments being made in population health enhancement.

INTRODUCTION

Over the past two decades—since our first contribution to the *Annual Review of Public Health* (24)—the world has evolved in dramatic ways with regard to mass communication and public health. A communication revolution occurred that has blurred the traditional distinctions between mass and interpersonal communication, and it changed in many ways how we must think about using the media to promote the public's health. This revolution was driven by two primary factors. The first of these factors was the extraordinary proliferation of media channels and the consequent decline in media audience sizes (43). In the late 1980s, mass media were thought of as "broadcast" media. Now, mass media channels are more aptly described as "narrowcast" or even "slivercast" media because of significantly reduced audience sizes and because of the financial need for each channel to focus narrowly on the viewing or reading interests of a specific demographic or psychographic audience (42). It is therefore more difficult for public health organizations to reach "mass" audiences through the media because doing so now requires using limited public health communication resources across a wide array of channels.

A second major factor driving the communication revolution is the rise of the Internet (77, 78). The Internet and the World Wide Web are quintessential disruptive technologies in that they radically altered—and continue to alter—both the ways in which information flows through our society and the business models that support the mass media industry (11, 77). Until the mid 1990s, interpersonal communication occurred largely on a one-to-one or a one-to-few basis; the growth of the Internet and its myriad manifestations (including blast emails, Web sites, blogs, and RSS feeds) has given individuals and organizations dynamic and powerful new communication tools by which to spread their influence directly to thousands—indeed millions—of people independent of traditional mass media channels (and their associated gatekeepers). The ascendancy of nonbroadcast communication platforms is an extremely positive development for the field of public health because it offers us many powerful and flexible communication tools through which to convey important information to a variety of audiences. Moreover, these new communication tools can be inexpensive compared with the costs of traditional mass media outreach (77).

The past two decades have also witnessed a dramatic revolution in how we in public health understand population health. The rise of ecological models of health has helped us appreciate more clearly that the determinants of population health exist on multiple levels and include not only the characteristics of individuals (e.g., their attitudes and beliefs), but also the characteristics of social networks, the organizations in people's lives (e.g., workplace, church, sports league), and the neighborhoods in which they live (4, 41). Ecological models of health make clear that to use public health resources efficiently, we must make efforts across multiple levels of influence to affect the full range of factors that undermine—or promote—population health (44, 48, 66, 76).

The aftermath of a revolution—or in this case, the aftermath of two concurrent revolutions—is an excellent time to revisit one's operating assumptions. We recently did just that and concluded that the communication and the public health revolutions have not yet been adequately integrated into a new understanding of, or framework for, public health communication. In an article titled "Communication and Marketing as Tools to Cultivate the Public's Health: A Proposed 'People and Places' Framework," we suggested a new way of understanding and pursuing the potential of communication interventions to change public behavior and promote the public's health (44).

The purpose of this review is to explore the implications of an ecological perspective on mass media campaigns as a means to change

public behavior. Using our recently developed ecological framework, the people and places framework (44), we review the degree to which and the ways in which mass media campaigns have targeted various levels of influence or fields of influence of the ecological framework. Where possible, we identify factors associated with successful campaigns within each field of influence. We make the case that the vast majority of public health media campaigns to date have targeted only a small range of ecological factors, thereby limiting our understanding of the true potential for mass media interventions.

BACKGROUND

Health communication scholars who have reviewed the health communication campaigns literature, or some aspect of that literature, have tended to reach similar conclusions. Namely, most have concluded that mass media interventions, by themselves or in combination with other programs, can significantly influence the health behaviors of populations (5, 24, 39, 52, 59, 63, 72, 59, 92). One important caveat is associated with this conclusion, however: The effects of health communication campaigns are typically only modest in size (52, 72). Although there are clear exceptions to this rule—i.e., campaigns that have had dramatic behavior change impacts (21, 33, 49, 71) as well as campaigns that have had no behavior change impact (25, 64)—the rule itself applies to a broad range of public health media campaigns.

Effective public health media campaigns typically have two important qualities: They feature well-designed messages, and those messages are delivered to their intended audience with sufficient reach and frequency to be seen or heard and remembered (33, 52, 59). While the art and science of effective health message design continues to develop (70), the importance of following these principles has been well understood—and has been the subject of considerable attention in the field of public health—for quite some time (45, 63).

Indeed, Hornik (2002) noted that the public health communication field has been perhaps too focused on issues of message design and not adequately focused on the more costly challenge associated with achieving sufficient levels of message exposure (i.e., reach and frequency) among members of the target audience (33).

Extant reviews of the public health communication literature are limited in an important way. Most of what we know about the potential of public health media campaigns comes from campaigns that sought to influence population behavior by targeting individual-level antecedents to the behavior of concern (such as knowledge, perceptions, and self-efficacy). As such, extant literature reviews can reveal only a constrained view of the potential of public health communication. A more complete view—one that is in better sync with contemporary thinking in public health—requires that we gain an understanding of mass media campaign potential across the full range of factors implied by ecological models of health.

Ecological models of health consider both the characteristics of individuals and the contexts in which they live (76). Following from this perspective, we recently proposed the people and places framework, which posits that a population's health is influenced by (*a*) the attributes of a people in the population; (*b*) the attributes of the environments or places in which members of the population live, work, go to school, shop, etc; and (*c*) the important interactions between the attributes of people and places (44). These attributes and their interactions influence health through their impact on health behavior and their effects on physical functioning and well-being (4). The framework is illustrated in **Figure 1**.

In this framework, the attributes of people can be understood through three levels of analysis, or as we have termed them, three fields of influence: the individual field; the social network field; and the group, community, or population field. In addition, building

on the important work of Farley & Cohen (19), the attributes of places can be understood in terms of two fields of influence: local and distal. Local fields of influence are those in a person's immediate environment: within his/her own home, neighborhood, and workplace. Distal fields of influence are those further afield, but that still make an impact on a person's life. For example, decisions made in distal places such as the national capital or by multinational corporations exert influence over the behavior and health of people who live over wide geographic areas.

USING MASS MEDIA INTERVENTIONS TO CULTIVATE HEALTH IN EACH FIELD OF INFLUENCE

Mass media interventions can be, and to a lesser extent have been, used to influence functioning in each of the five fields of influence identified in our people and places framework. To add a new perspective to the results of published literature reviews and meta-analyses, as well as to inform our own points of view, we searched the peer-reviewed literature to assess the prevalence and find examples of reported mass media campaigns targeting variables in each of the five fields of influence during the most recent decade (1997–2007). For the purposes of this review, we defined mass media campaigns as any planned effort that disseminates messages to produce awareness or behavior change among an intended population through channels that reach a broad audience (5). These channels can include traditional media such as radio, television, magazines, billboards, and newspapers, as well as those that make use of newer technologies such as email, cell phones, and interactive Web sites.

Influencing Individual-Level Factors

The effects of public health communication interventions on individual-level factors that influence health behaviors have been the sub-

ject of research for many decades. The literature points to the following individual-level factors as being predictive of health behaviors: cognitions (e.g., knowledge and beliefs, self-efficacy, and outcome expectancies) (1), affect (e.g., depression) (38), skills (e.g., contraceptive skills) (8), motivation (e.g., high intrinsic interest) (53), and intentions (23). Mass media campaigns have sought to influence these factors for their own sake, and as a means to change behavior. Biological predispositions (e.g., sensation seeking) (55) and demographic factors (e.g., gender, income, employment status) (46) are additional individual-level factors that have served as a means to stratify (i.e., segment) audiences and target messages.

The vast majority of campaigns that we identified in our literature review targeted individual-level factors. Some of these campaigns have been spectacularly successful. One of the most successful examples of a public health communication campaign targeting individual-level factors is the "truth" campaign as conducted first by the Florida Department of Health, and then by the American Legacy Foundation (see sidebar, Listing of Web Sites of Ongoing Campaigns). This campaign is aimed at youth between the ages of 12 and 17 years. Its ads—which often feature trendy youth involved in public demonstrations against the tobacco industry–are intended to provide tobacco-prone adolescents with the "truth" about the deceitful marketing practices of the tobacco industry. The ads encourage youth to rebel against the tobacco industry instead of rebelling with tobacco (31). The national campaign has been consistently associated with an increase in antitobacco attitudes and beliefs (21) and is responsible for 22% of the observed decline in youth smoking between 1999 and 2002 (20). The earlier campaign in Florida was even more successful, presumably because of a significantly larger per capita budget (71). Similar-themed campaigns have also been successfully employed in California and Massachusetts (56, 69).

As noted above, existing reviews of mass media campaigns have focused largely on

campaigns that target individual-level factors. From these campaigns we know that large campaign effects on individual-level factors appear to be the exception rather than the rule. Modest to moderate effects—when the campaigns are well designed and of adequate intensity—are the rule (52). Snyder & Hamilton's (72) meta-analysis of 48 published community-wide mass media health campaigns—all of which were conducted in the United States and were evaluated with a quasi-experimental research design—successfully quantifies the size of typical campaign effects. Overall, the effect size of the average campaign on population behavior in the short-term, as measured by the mean of correlations, was 0.09, which "roughly translates to 9% more people performing the behavior after the campaign than before" (72). The average effect size for campaigns that promoted behaviors that were enforceable by law (e.g., seat belt use) was considerably higher (0.17), whereas the effect size for purely "persuasive campaigns"—defined as those campaigns not promoting a legally enforceable behavior—was considerably smaller (0.05). This meta-analysis also identified two important variables that moderated the behavioral influence of media campaigns: reach and novelty of the information presented. Campaigns that achieved a higher reach (i.e., the proportion of the target audience who were exposed to the campaign) had a larger impact, as did campaigns that presented new information (vs. information that had already been communicated previously in other ways).

It goes without saying that nearly all contemporary mass media campaigns include the creation and promotion of a Web site as part of their collateral materials. More sophisticated Web sites may include features such as interactive games or "advergames" (which are most common in campaigns targeting kids), downloads (e.g., campaign materials, screensavers, buddy icons), cell phone applications, and expert systems (i.e., an automated counselor that collects information on the user and then pro-

vides him/her with tailored advice about behavior change).

Thus far, few published studies in the public health literature examine the contribution of a Web site or Web site components to campaign effectiveness. However, existing indicators are promising. First, evidence from the commercial sector documents the positive impact of Web-based promotions on customer reach, brand awareness, customer relationship building, and product sales (10). Second, in the public health field, there are a growing number of cases of Web-based technologies being successfully used to generate high levels of campaign reach and engagement. For example, CDC's VERB campaign, a national campaign aimed at increasing physical activity among children aged 9–13 years, which began in 2002, generated more than 10 million independent visits to its Web site, **http://www.VERBnow.com**, over the course of 2 years. Of these visits, more than 1.1 million 9–13 year olds—or 5.3% of all American tweens (83)—registered with the Web site and recorded their hours of physical activity or searched for places in their zip code to be active (M.E. Huhman, personal correspondence, 2007). Although the unique contribution of these efforts to the high level of campaign awareness and to the observed increases in physical activity remain unclear (35), the total number of people reached and engaged is impressive. Third, an emerging body of evidence in the public health literature indicates that Web-based expert systems—independent of supporting media campaigns—can have impressive effects on individual health beliefs, attitudes, and behavior (77, 78).

Social Network Level

An individual's web of social ties can be defined as his/her social network (22). Compelling evidence demonstrates that being embedded in a large social network positively affects health. Studies have consistently shown that individuals who lack social ties are

less likely to adopt recommended health behaviors and are less healthy overall, psychologically and physically (3, 4, 34). Various aspects of social networks have been identified that can be health promoting. These include, at a minimum, size and connectedness of a person's social network, diversity of ties in the social network, the degree to which the various relations in a social network (e.g., parents, friends, teachers, and mentors) provide social support, positive modeling, guidance and monitoring (4, 34, 82), and the presence of positive health opinion leaders in the social network (17, 62, 84).

The literature shows many examples of mass media campaigns that have been used to stimulate beneficial changes in social network–level factors. The preponderance of these media campaigns has targeted members of the inner circle of an individual's social network as a means to influence the ultimate target audience—those people who are most affected by the public health problem of concern. Most of these campaigns are aimed at good friends (2, 50), parents (16, 54, 79), older siblings (54), and spouses (68). These campaigns, for the most part, ask social network members to provide guidance and monitoring (54) and to encourage the other person to adopt various health behaviors [e.g., to obstain from unprotected sex (16, 79), smoking (2), and drunk driving (50)]. To a lesser extent, these campaigns have attempted to increase the provision of social support among network members (68).

One example of a successful campaign, which targeted parents as a means to influence adolescents, was the North Carolina Department of Public Health's effort to prevent teenage pregnancy. With the tagline, "Talk to your kids about sex. Everyone else is," parents were urged through TV, radio, and billboard ads to talk to their children about safe sexual behavior. On the basis of a phone survey of parents, parents exposed to the campaign were more likely to have recently talked to their adolescent children about sex and more likely to plan to talk to their children in the next month about sex (16).

The use of mass media to stimulate interpersonal communication—that is, to encourage members of social networks who are exposed to a campaign to discuss the topic of the campaign with others in their social network and thereby pass on or reinforce the prescribed health information or practice—is another strategy that has been productively used. Some evidence suggests that campaigns that can stimulate interpersonal communication about the campaign topic generate larger behavior change effects than do campaigns lacking this effect (7, 29, 85). This was true in a family-planning media campaign in Nepal. Women exposed to campaign messages through conversations with others were more likely to adopt the recommended behavior of contraceptive use than were those who were only directly exposed to the mass media campaign (7).

Although the large majority of media campaigns targeting social networks have focused on influencing existing social ties, a limited number of examples of mass media campaigns set out to increase the size of social networks. One example of such a campaign is the Harvard mentoring project. This mass media campaign was designed to increase the social networks of underprivileged children by encouraging adults to volunteer to be mentors to these children. The campaign used a three-pronged strategy: public service announcements, outreach to the entertainment community (i.e., efforts to get appropriate

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LISTING OF WEB SITES OF ONGOING CAMPAIGNS

Harvard Mentoring Project:
http://www.hsph.harvard.edu/chc/mentoring.html
Live Earth concert series: **http://www.liveearth.org/**
Rock the Vote: **http://www.rockthevote.com/**
Smoke Free Movies: **http://smokefreemovies.ucsf.edu/**
The truth campaign: **http://www.thetruth.com/**
The VERB campaign: **http://www.VERBnow.com**

storylines developed in entertainment media), and news media outreach. This campaign, which is ongoing, has been successful in gaining significant donated airtime and in generating more than 700,000 calls to a hotline from people interested in mentoring (9).

To our knowledge, the impact of social network–level public health communication campaigns, in terms of their success in influencing social network–level variables or public behavior, has not been systematically reviewed. Most social network–level mass media interventions have focused on attempting to harness the influence of a person's inner coterie of friends and family. Additional studies are needed to explore the other aspects of social networks that may be amenable to change through the mass media.

Community Level

Characteristics of communities that might be targets for mass media campaigns include social norms, social capital, social cohesion, collective efficacy, income inequality and racism. Social cohesion can be defined as the extent of connectedness and solidarity within a group (4). Highly cohesive communities are thought to be endowed with large stocks of social capital, or characteristics that facilitate collective action such as interpersonal trust, norms of reciprocity, and mutual aid (57). Social capital has been linked to self-reported health and mortality (40, 41), as well as to the recollection of health information (87). A similar relationship has been established between a community's level of income inequality—the income gap between the most well off and least well off—and health, whereby communities with greater levels of income inequality have been found to have higher levels of morbidity and mortality (58, 93).

Without question, the most common use of media campaigns to influence community-level factors is aimed at altering perceived social norms. The literature richly documents that social norms play a powerful role in shaping the behaviors of people in populations

(18); many people find it difficult to behave in a manner inconsistent with the social norm, even if the norm is not something to which they particularly subscribe. Social norms media campaigns are based on the observation that certain risk behaviors, particularly among adolescents and young adults, are based in part on a mistaken perception of the social norm (14). Many of these social norms campaigns have taken place in college settings and targeted norms pertaining to alcohol consumption because college students greatly overestimate the levels of heavy drinking among their peers (6). In these cases, the mass media campaign is used as a tool to correct misperceptions about normative levels of college drinking, and thereby attempt to reduce college alcohol consumption. Several studies evaluating social norms media campaigns demonstrate their efficacy (14, 27), although not all such campaigns have succeeded (65). The most rigorously designed of the studies found that, among 18 college campuses included in the study, those randomized to receive a social norms alcohol reduction campaign experienced greater reductions both in perceptions about normative levels of alcohol consumption and in actual drinking behavior (14).

The mass media has been used to increase social capital, social cohesion, or collective efficacy in only a handful of instances (28, 47, 80, 88). In one example, the Kansas Health Foundation conducted a statewide media campaign to increase social capital in Kansas (80). Over a two-year period, the Foundation released a series of paid television and print ads aimed at increasing social capital by encouraging nonparental adults to involve themselves in children's lives and in their community. As a result of the campaign, improvements were observed in attitudinal measures such as attending to youth and forming attachment to the community but not in behavioral outcomes such as having engaged with children or organized other adults to address the needs of children (80). Another interesting example—although not directly from the

field of public health—occurred during the 2004 U.S. presidential primary campaign. Rock the Vote, a national youth vote organization, partnered with CNN to sponsor a nationally televised debate where Democratic presidential candidates responded to questions posed directly by young citizens. Young viewers of this event experienced greater identification with the candidates and enjoyed a heightened level of civic engagement—a construct closely related to social capital–as compared with young viewers of a traditional journalist-led debate format (47). A third example occurred as we were finishing this article. The "Live Earth" concert series—a 24-hour, 7-continent concert televised series held on July 7, 2007—featured extensive messaging intended to promote an enhanced sense of collective efficacy around the issue of global warming. A prepost evaluation of this media event—reported to have been the largest televised music event ever—is currently being conducted (A. Leiserowitz, personal correspondence, 2007).

Clearly more work is needed to explore the potential of using mass media campaigns to cultivate health at the community level of influence. Many aspects of community—such as social capital, social cohesion, collective efficacy, income inequality, and racism—are important determinants of health that may be influenced in a cost-effective manner through mass media interventions.

Place: Local and Distal Levels

Places—homes, schools, work sites, roads, grocery stores, neighborhoods, and cities—affect our health behaviors and health in a variety of complex and subtle ways. Thus it is often difficult to conceptualize the range of opportunities for intervening with the places that surround us. Cohen, Scribner and Farley (12) provided a useful system for categorizing the place-based field of influence into four distinct subdomains. These consist of influences related to (*a*) the laws and policies in the environment, (*b*) the availability of prod-

ucts and services in the environment (such as health services, condoms, or fresh fruits and vegetables), (*c*) the physical structures in the environment (such as the presence or absence of sidewalks), and (*d*) the media and cultural messages in the environment (such as an abundance of unhealthy foods advertised on TV). Each of these distinct aspects of place represents potential targets for place-based mass media campaigns.

The mass media strategy most commonly used in changing the place-based field of influence is media advocacy. Media advocacy has been defined as "the strategic use of mass media in combination with community organizing to advance healthy public policies" (88). Media advocacy generally involves framing public health issues to emphasize the policy or environmental solution, gaining access to the news or other forms of the mass media as a means to reach the public and policy makers, and using this access to mobilize the public and force policy makers to enact particular policy solutions.

Only a small number of well designed evaluations of media advocacy efforts have been conducted, but those studies indicate that media advocacy efforts are promising (30, 32, 51, 75). One such study evaluated the media advocacy activities of the Florida Tobacco Control Program. The program aimed to garner media coverage to encourage counties across Florida to adopt product placement ordinances for tobacco products (e.g., tobacco products must be kept behind the counter of a store). As a result of the campaign, newspaper stories about the program's policy activities increased relative to other tobacco control topics covered during the intervention period. Furthermore, counties that experienced more newspaper coverage of the program's activities were more likely to adopt the targeted new tobacco product placement ordinances. Unfortunately, the new ordinances, once they went into effect, did not result in the expected declines in youth smoking (51). Some positive effects have been observed for media advocacy efforts in the arena of clean indoor air

legislation (60) and for policies related to reducing alcohol abuse and alcohol-associated fatalities (32), although, for alcohol, effects have been mixed (30).

Although most published studies document media advocacy efforts to change governmental laws and policies (which often address the availability of products and services), mass media campaigns have also been used to directly alter the content of the media messages present in our environment. Compelling evidence shows that our media environment—both the advertising and the content of programming—shapes our health behaviors (86). One notable example of using the mass media to alter the media environment is an effort led by Smokefree Movies. Smokefree Movies is a group that strives to ensure that children will not be exposed to depictions of smoking in movies, an established risk factor for smoking uptake (67). Through a series of advertisements published in *Variety*, a movie industry publication, as well as in high-profile newspapers such as the *New York Times*, Smokefree Movies has pressured the Motion Picture Association of America (MPAA) to give films with smoking scenes an R rating (26), in much the same way that R ratings are given to films with foul language or sexually explicit scenes. Although there is no formal evaluation of the six-year campaign, recent news events indicate that the group is making some headway. On May 10, 2007, the MPAA announced that it was revising its rating system to include smoking in movies as a factor when assigning ratings to films, a step in the right direction, although short of Smokefree Movies' stated goal of a mandatory R rating (81).

Media advocacy has been heralded over the past decade as an important public health strategy and has been used relatively frequently (15, 88, 89). Although examples similar to the campaign set out by Smokefree Movies suggest positive effects, the evidence base to support media advocacy as an effective public health strategy is surprisingly thin (73, 74). Relatively few studies have been published that involve media advocacy, and of those published, most are descriptive and rely on a case history analysis to explain its impact (74). One major factor driving this paucity of published studies is the lack of established and well-developed methodologies for evaluating media advocacy and other such complex environmental interventions (73, 74). Tackling the methodological hurdles for media advocacy is an important first step needed to strengthen our understanding of the value of media advocacy for shaping the place-based field of influence.

DISCUSSION

Many people and thought-leading organizations in the field of public health are fundamentally optimistic about our ability to harness the potential of mass media to promote the public's health. The Institute of Medicine, for example, has issued a number of recent reports that indicate their strong belief in the power of media and communication as a public health strategy (36, 37). Indeed, in our highly saturated media environment—in which the average American adult spends more than 10 h and the average American child spends more than 6 h per day consuming media—there are myriad opportunities to reach audiences with communication interventions (43, 61). The evidence is fairly compelling that interventions targeting individual-level factors can be a highly cost-effective way to promote population health. Skeptics of the prospects for public health communication intervention—and many well-grounded skeptical assessments have taken place over the past quarter century (88, 90, 91)—however, are likely to conclude that this exuberance is irrational given the small population effects of individual-level public health media campaigns.

In the most thorough assessment to date (i.e., an edited volume seeking to gain perspective on the potential of public health communication campaigns), Hornik (2002) concluded that ample evidence supports an

optimistic view of public health communication, although he noted that the very nature of highly effective public health communication programs tends not to be easily evaluated with traditional methods (33). Hornik alluded to "big messy programs" in describing the public health communication programs that have had the biggest impact. This term, "big messy program," describes communication interventions not as a precisely targeted (almost surgical) intervention aimed at individuals, but rather as a program that includes many diverse communication tactics (e.g., mass media messages, interpersonal communication, and outreach to policy makers) often directed at changing both individuals and the social system. In contrast, he concluded that the mass media campaigns most likely to fail (i.e., those that do not influence public behavior) are those aimed solely at changing individuals. In Hornik's opinion, these programs fail precisely because they do not change the larger social system and are therefore unable to achieve adequate contact (i.e., message reach and frequency) with their intended audience.

We share Hornik's and the Institute of Medicine's optimistic view of public health media campaigns; their true potential can be better understood, and pursued, by embracing an ecological framework of health that considers determinants of health across multiple fields of influence. Informed by the people and places framework, individual-level campaigns may fail to deliver the big results because they, in a variety of ways, encourage and help individuals to change their behavior, but ignore the many social-network, community-level, and place-based barriers to change. Although public behavior does indeed change on average under these circumstances (72), it is not of sufficient magnitude to solve pressing public health problems. By harnessing the mass media to change social support, community norms, the availability of products and services, and other factors from nonindividual fields of influence, we should be able to improve greatly the likelihood of achieving large-scale changes in public behavior.

We regrettably understand that this article is not a definitive review of the potential to use mass media to change public behavior. Because of the relatively few studies investigating the uses of mass media for changing social network–, community-, and place-based factors, the state of the literature is still too weak to write that review. Rather, we ask this question: How can we use communication to influence the full range of important factors suggested by ecological models of health? Some public health communication programs must be, by necessity, of a limited nature. Conversely, many can be of the "big messy program" variety and can target factors across multiple fields of influence. Regardless of which type of program is being designed, campaign planning will benefit from clearly assessing the factors across the fields of influence that are most influential in creating the status quo and by making informed decisions about how to use available communication resources to target those factors.

At the most basic level, we advocate to move beyond the Either/Or mentality that has characterized the public health communication field for the past several decades. Mass media campaign resources are, without question, limited, but this does not mean that they should be invested either to change the health behaviors of people or to change the health-enhancing capacity of places. Both of these general approaches are worth pursuing, or at least worth considering. Some public health organizations, by virtue of their circumstances and resources, will decide to focus on one approach or the other, and this is a perfectly justifiable decision. The public health community as a whole, however, should not be investing in one approach or the other, but rather in using communication to cultivate change in both areas of influence.

The issue of micronutrient fortification of staple foods offers an illustration of our point. For the past few decades, public health

professionals have sought to eliminate micronutrient deficiencies by encouraging or requiring the manufacturers of certain staple foods to fortify the food with the missing nutrient (e.g., vitamin A). Mass media campaigns have been used—or can be used—in a variety of ways to effect this change. Campaigns can be used to advocate to policy makers the benefits of requiring micronutrient fortification as a matter of law. Campaigns can be used to target manufacturers directly to encourage them to voluntarily modify their manufacturing practices. And finally, campaigns can be used to target members of the affected population—and/or the people who influence them—to encourage them to seek and purchase only fortified food staples. A recent review of the literature concluded that the most effective micronutrient fortification programs are those that take measures both to ensure the wide availability of fortified foods and to create consumer demand for such foods (13).

A similar picture emerges from campaigns targeting the use of seatbelts in cars. As noted earlier, Snyder & Hamilton (72) found in their meta-analysis that campaigns promoting seatbelt use that emphasized enforcement messages—that is, messages about the fines or other legal consequences of not using a seatbelt (e.g., Click It or Ticket)—were found to be more than three times more effective than campaigns, seatbelt campaigns included, that relied solely on persuasive approaches. Furthermore, they reported that seatbelt laws in the absence of a media campaign were less effective than the combination of the seatbelt law with the enforcement-based media campaign (72). Apparently, it was the combination of a place-based strategy (in this case, the enforcement policy) and a people-based strategy (the mass media campaign targeting individual drivers) that made the greatest impact on behavior change.

Our assessment of the published research on mass media campaigns finds that the preponderance of evaluated interventions have targeted the individual field of influence, and to a lesser extent, the social network field of influence. It is not entirely clear why social network, community, and place-based factors have been underemphasized as targets for mass media interventions, but we would be wise to turn our attention to exploring systematically how we can use public health communication interventions to cultivate change in these fields of influence. There is clearly a need to review, synthesize, and if possible meta-analyze the extant public health communication literature that has sought to create change at the social network and the community or population level, as well as at the local and distal level of place. The history of our field is characterized by a focus on the individual, but certainly there is now enough research to begin to improve and expand our understanding of the potential of public health communication by assessing what we know about its potential to influence public behavior positively through other fields of influence. These studies can, and likely should, come both from a renewed effort to systematically evaluate the public health communication efforts of public health practice organizations as well as from sponsored research conducted specifically to advance our understanding of how communication can be used to shape public behavior positively.

At a deeper level, our peers in public health communication should consider using all the fields of influence suggested in the people and places framework to structure their analyses of intervention opportunities. Furthermore, we recommend that they develop mass media campaigns in a manner that complements and extends other investments being made in population health enhancement. We firmly believe that such a strategy will lead to the use of public health resources in a manner that is efficient, effective, and ethically responsible.

DISCLOSURE STATEMENT

The authors are not aware of any biases that might be perceived as affecting the objectivity of this review.

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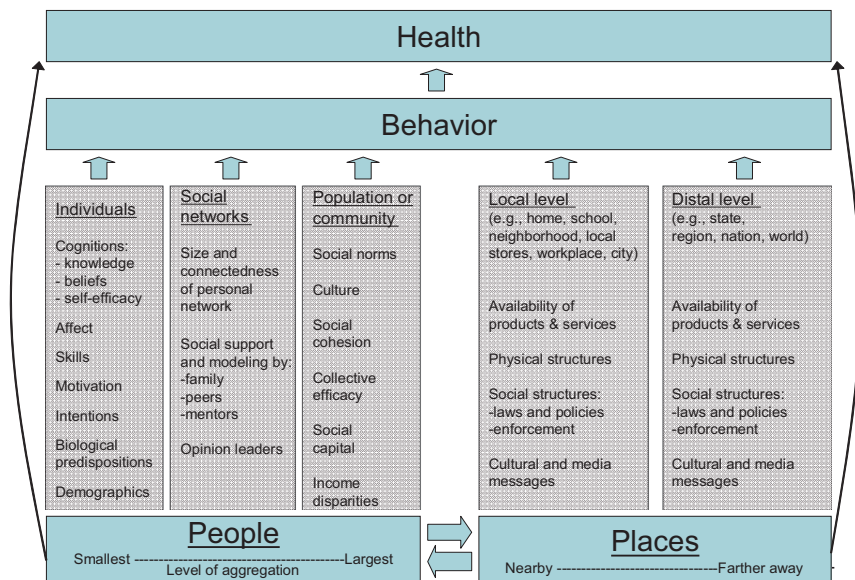
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Health

Behavior

Individuals	Social networks	Population or community	Local level (e.g., home, school, neighborhood, local stores, workplace, city)	Distal level (e.g., state, region, nation, world)
Cognitions: - knowledge - beliefs - self-efficacy	Size and connectedness of personal network	Social norms	Availability of products & services	Availability of products & services
Affect	Social support and modeling by: -family -peers -mentors	Culture	Physical structures	Physical structures
Skills		Social cohesion	Social structures: -laws and policies -enforcement	Social structures: -laws and policies -enforcement
Motivation		Collective efficacy	Cultural and media messages	Cultural and media messages
Intentions	Opinion leaders	Social capital		
Biological predispositions		Income disparities		
Demographics				

People
Smallest --Largest
Level of aggregation

Places
Nearby -------------------------------Farther away

Figure 1

The people and places framework for public health.

A|R

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