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The Role of Mass Media Communication in Public Health

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1. Introduction

The mass media are intensively employed in public health. Vast sums are spent annually for materials and salaries that have gone into the production and distribution of booklets, pamphlets, exhibits, newspaper articles, and radio and television programs. These media are employed at all levels of public health in the hope that three effects might occur: the learning of correct health information and knowledge, the changing of health attitudes and values and the establishment of new health behavior.

Mass media campaigns have long been a tool for promoting public health (Noar, 2006) being widely used to expose high proportions of large populations to messages through routine uses of existing media, such as television, radio, and newspapers. Communication campaigns involving diverse topics and target audiences have been conducted for decades. Some reasons why information campaigns fail' is an early landmark in the literature. Exposure to such messages is, therefore, generally passive (Wakefield, 2010). Such campaigns are frequently competing with factors, such as pervasive product marketing, powerful social norms, and behaviours driven by addiction or habit.

Mass media campaigns have generally aimed primarily to change knowledge, awareness and attitudes, contributing to the goal of changing behaviour. There has not normally been a high expectation that such campaigns on their own would change people's behaviour. Theory suggests that, as with other preventive health efforts, mass media campaigns are most likely to reduce unhealthy attitudes if their messages are reinforced by other efforts. Reinforcing factors may include law enforcement efforts, grassroots activities, and other media messages.

There is a vast literature relating to public health information campaigns. Much theoretical literature is devoted to the topic of effectiveness of health communication strategies. Mass media campaigns have usually been one element of broader health promotion programmes with mutually reinforcing components:

1. Mobilising and supporting local agencies and professionals who have direct access to individuals within the target population.
2. Bringing together partnerships of public, voluntary and private sector bodies and professional organisations.
3. Informing and educating the public, but also setting the agenda for public debate about the health topic, thereby modifying the climate of opinion surrounding it.

4. Encouraging local and national policy changes so as to create a supportive environment within which people are more able to change their behaviour.

This book chapter will first focus on some key concepts such as communication campaigns *vs* mass media campaigns, advertising *vs* communication campaigns, the concept of risk and risk communication campaigns. Later on, the chapter will focus on the effectiveness of public health campaigns using mass media communication.

2. Communication campaigns *vs* mass media campaigns

There is often confusion between the labels campaign, communication campaign or program, media or mass media campaign, and intervention. No particular definition adequately covers current practice, and there are many local variations of what is meant by these labels. Indeed, a variety of definitions exists in the literature but the following elements of a *communication* campaign are essential (Rogers and Storey 1987).

Firstly, a campaign is purposive. The specific outcomes can be extremely diverse ranging from individual level cognitive effects to societal or structural change.

Secondly, a communication campaign is aimed at a large audience. Rogers and Storey (1987) note that 'large' is used to distinguish campaigns from interpersonal persuasive communications by one individual (or a few people) aiming to seek to influence only a few others.

Thirdly, communication campaigns have a specified time limit. This is not to state that all campaigns are short lived. For example, the initial Stanford Heart Disease Prevention Program ran for three years, however follow-up investigations were conducted over decades.

The fourth point is that a communication campaign comprises a designed set of organised activities. This is most evident in message design and distribution. Messages are organised in terms of both form and content, and responsibility is taken for selecting appropriate communication channels and media. As Rogers and Storey (1987) point out, even those campaigns whose nature or goal is emancipation or participation involve organised message production and distribution.

In summary, the term communication campaign implies that:

- it is planned to generate specific outcomes;
- in a relatively large number of individuals;
- within a specified time period; and
- uses an organised set of communication activities.

Rogers and Storey (1987) observe that in the modern communication campaign, modest changes in audience behaviour are frequently achievable, and it is important for the campaign planner to set modest and realistic expectations about what can be achieved. They argue that a health promotion campaign might be considered successful or effective if about five percent of the target (or segmented) audience does adopt measurable changes in health behaviour over the longer-term.

In this context, it is important to define a communication campaign. It should be noted that the word communication is used to highlight the fact that not all campaigns necessarily involve mass media messages, or mass media messages in isolation, and that communication campaigns may be small-scale in scope and audience reach.

3. Advertising and communication campaigns

Elliott (1987), one of Australia's leading communication practitioners, offers a particularly informative look at the differences between advertising and communication campaigns. His literature review and analyses of campaigns are especially relevant because they are based largely on experience. He defines a set of parameters for considering and planning for a campaign's realistic outcomes.

Elliott's (1987) basic premise is that the objectives and processes that are appropriate for commercial advertising are usually inappropriate for health promotion. The essential differences between advertising and health campaigns lie in the nature of the product, the processes involved in promotion and, of course, in the nature of audiences. Elliott argues that advertising by itself will not result in fundamental changes in behaviour: "Commercial products are regarded by many as trivial and superficial, not as central and ego-involving to the individual as ill health. They are positive and attractive and can be relatively easily obtained. By contrast, health publicity is largely negative: it preaches the avoidance of something negative (which is enjoyable), often involving short-term unpleasantness, for the sake of benefits that are long-term, probabilistic and not guaranteed".

Elliott (1987) draws on previous research to demonstrate once again that advertising does not have massive effects on potential consumers, as many might believe. However, he notes that small changes in market share for a particular product that are achieved as a consequence of advertising may result in greatly increased sales and profits. In this regard, it is useful to recall Rogers and Storey's (1987) assertion that a health promotion campaign might be considered successful if five percent of the target audience make long–term changes in overt health behaviour.

Commercial advertising techniques are but one element of a communication campaign using mass media. The following table is comparing communication campaigns and advertising.

Typical Communication Campaign	**Typical Advertising Campaign**
Persuasive focus involving response shaping, reinforcement attitude change; behavioural change.	Focus on feelings and perceptions toward product. Not attitude change.
Difficult to specify individual desires and wants.	Based on the idea of satisfying desires and wants.
Designed to meet societal or individual needs in face of risk.	May be designed to create desire and need.
May not be in line with prevailing attitudes and opinions.	Plays on prevailing attitudes and opinions.
Usually against the tide of public opinion.	Tries to stay with the tide of public opinion.
Not usually seen as a personal benefit as such and may be designed to create a social benefit.	Usually, if not exclusively, a personal benefit.

Typical Communication Campaign	Typical Advertising Campaign
Involves personal cost, sometimes even discomfort.	Cost is one of choice among competing brands.
Message is that all people should adopt or comply.	Products/services that are not accepted fail.
Often difficult to see short-term outcomes.	Easy to see, and outcomes can usually be quantified.
Reward difficult to see.	Reward easy to see.
People may express support for socially desirable behaviour but not adopt the behaviour.	
Experience is the best way to change attitudes – not mass media.	
Tries to define communication objectives as changes in individuals: •Increased salience; •Strengthening or attitude change; •More positive disposition to behave in a desired direction; •Adoption of behaviour either in the short or long term; •Awareness of unintended consequences.	Market objectives often confused with communication objectives. Focus on behavioural outcomes with intermediary objectives such as reinforcing loyal buyers' beliefs, creating consumer satisfaction, maintaining brand salience.
May be very sensitive, obtrusive, and emotional.	May not involve great emotional or affective attachment.
Many times involves an organisational bias – in the 'public service/interest'. Educational campaigns favoured even when evidence shows previous similar campaigns failed.	Campaigns that fail or result in loss lead to immediate action.
Sometimes, objectives confused with education or mere dissemination of information.	
Organisation may constrain budget, processes and structure of the campaign.	All about excitement, sexuality, self-indulgence, and even power.
Government equated to what ought to be done, what should be done, etc. It is the 'parental' mode.	Talks to the child in us.

Typical Communication Campaign	Typical Advertising Campaign
Information often perceived to be unreliable because: •Most groups perceive others as the problem or cause. •Many see themselves compliant with the attitudes or behaviour, when they are not •People seek justification for non-compliance and may give misleading information in any evaluation.	Easy to get information about products and services. Yet, advertising does not work in the way that most people believe. Advertising does not have massive effects on people.
Some people have pre-existing beliefs or ideas about 'communication'. Unrealistic expectations about what can be achieved.	Can be targeted to specific audiences or segments and expectations adjusted.
Often difficult to identify target audience. Audience could be everyone. Expectations should be low.	
Secondary audiences may be critical in facilitating change.	Secondary audiences rarely critical in mass advertising.
Usually a major objective related to a social concern.	Usually aiming at slight modifications.
Tends to be strategy based on modifications/change or slow down of undesirable attitudes/behaviours.	Tends to be strategy based on start or stop.
Slow processes involved over time.	May see instant results.
Television's commercial 'values' may be inappropriate to the campaign's message.	Commercial television is commercial television advertising; the program is designed to deliver an audience to an advertiser.

Table 1. Comparison of communication and advertising campaigns

4. The concept of risk

Most health communication campaigns involve risk, i.e. risks to people and societal risks. The concept of risk has been at the focus of contemporary thinking in recent years because of the salience and threat of environmental issues, which have received extensive public and media attention.

Giddens (1999) observes that most traditional cultures did not have a concept of risk and argues that it is a concept associated with modern industrialised civilisation, embodying ideas about controlling or conquering the future. People are forced to negotiate their lives around risks, and to rely increasingly on their own judgments about risks. Experts can assess the likelihood and magnitude of a given risk, however the public understanding of a given risk takes on meaning through our cultural practices.

One important cultural site for the production of meanings about risk is media content, including communication campaigns. The meaning of a particular health risk to various groups in society, for example, develops through the continuing and often changing representations of that risk in media content, and in scientific and medical discourses, as well as through other social and cultural practices. It is against this background of changing technical, media and public discourses that communication campaigns are planned.

Wynne (1996) argues that, just as expert opinion is central to ideas about risk, so too is lay criticism and comment. He observes that, while risks may be debated within scientific or 'public accountability' discourses, they are dealt with by most people as individuals in very specific situations, at the level of the local, the private, the mundane, the everyday, and intimate experiences. Wynne argues that it is essential to examine how perceptions of risks are constructed by local, or as he terms it 'situated', knowledge, as well as by expert knowledge. For example, there are profound differences across class, gender, race, ethnicity, age and other variables in the ways people understand, interpret and respond to health risks. Individualism might suggest a degree of choice in negotiating risk, but it is recognised that, within the power structures of our society, some people have more authority over the ways risks are identified, defined as public, and managed, than do other people. Anecdotally, it has been noted that a teenage boy will ask for the cigarette packet with the warning label 'Smoking is dangerous to pregnant women' because 'it doesn't apply to him'.

This risk perspective offers invaluable insights for communication campaign planners. This section of communication literature has one point of origin in the environmental sciences, and is particularly important to review because of its parallels to more general communication campaigns.

4.1 Risk communication campaigns

Risk communication campaigns offer the promise of resolving public conflict and diminishing fear about new large-scale technologies, such as nuclear power, as well as promoting safety campaigns concerned with science, technology and health. The concept of communication being 'in the public interest' was viewed as essential in fulfilling the public's need for information and education, or for promoting behavioural change and protective action, in the face of an anticipated disaster or hazard.

Brown and Campbell (1991) note that many western societies recognised the need for public information about science and technological risks. They link heightened interest in risk communication to the emergence of environmental impact legislation and the requirement to inform the public. The early risk communication campaign model involved 'experts'attempting to persuade the public of the validity of their scientific and technical risk assessments of a particular hazard. It is perhaps unsurprising that many such campaigns met with limited success, as the reviews outlined above would predict.

A fundamental change in campaign planning occurred with the recognition that public perceptions of various risks differed widely. This change is viewed historically as a turning point for risk communication research. As Hadden (1989) observes, old risk communication models, such as those involving scientific experts attempting to persuade lay people of the validity of their risk assessments and decisions, are impeded by lay risk perceptions, by lay people's difficulties in understanding mathematical probabilities, and by technical and scientific difficulty.

Leiss (1998) argues that the changed research direction is a shift in emphasis from 'risk' to 'communication' in the concept of risk communication. In other words, it involves 're-framing the issue of risk communication as a problem in communication theory and

practice, rather than in the concept of risk'. Risks perceived as familiar, controlled, voluntary, beneficial, and fair are more likely to be acceptable to most people than risks perceived in opposite ways (Slovic, 1994). For example, the perceived health risks of chemical pollution from a local industrial factory are different from the perceived risks from exceeding the speed limit on a country road: the first is involuntary and unfamiliar, while the latter may be considered voluntary and familiar.

Risk perception research adds to the body of knowledge in this area by accounting for seemingly irrational responses by various publics to identified and potential hazards. It should be noted that the same risk might in fact produce very different perceptions in differing groups of people, depending upon the context in which the risk is understood and interpreted. These varied perceptions may produce differing policy or strategic decisions about risk 'management' and responses by 'experts'. Rowan (1996) puts forward the following argument about generalised perception factors: [The factors] are expressions of various types of power: informational, decisional and distributional. People who feel deprived of facts, unable to control their own lives, and forced to bear the costs but not the benefits are likely to be outraged by news of some new risk. To be effective risk communication must involve power sharing. Therefore, risk communication may not reduce conflict and smooth risk management. Empowerment can be destabilising in the short term, but it leads to more broadly based policy decisions, which can hold up over the long term.

As a consequence, contemporary risk communication campaigns attempt to be more individually reflexive and, as Hadden (1989) argued, the key to this approach lies in establishing dialogue or conversations with the public. The notion of one-way, top-down, expert-to-public campaigns is replaced with a more interactive process designed to empower various publics. Campaigns recognise that understanding the complexities of health issues, including technical knowledge, are not necessarily beyond ordinary people. They also highlight the potential importance of the interplay between scientific forms of knowledge and those that may be considered are more cultural. In other words, lay knowledge about health issues cannot be ignored in communication campaigns.

Hadden (1989) notes that campaigns that emphasise dialogue among parties and active participation in assessing and managing risk, are 'impeded by the lack of, or difficulty in establishing, participatory institutions'. Similarly, in a health context, Needleman (1987) notes that the goal of empowering those at risk to make an informed choice is laudable, however the risk communication intervention needs to be more than merely the dissemination of information:

The intervention must, somewhere along the line, stimulate individual and/or collective behavioural changes that reduce health risks. Otherwise, the risk communication becomes a kind of *ritualistic activity*, an end in itself in which the formal aspects of conveying risk information take precedence over their actual health impact.

The emergence of a participatory or dialogue model, which attempts to explore the disparity between expert information and a diverse public knowledge, has challenged both the 'scientific' approach to the problem of risk communication, and indeed the later perception research.

Brown and Campbell (1991) have placed risk communication models within a two by two matrix that categorises the underlying approach in terms of low and high power devolvement, and low and high community interaction. Older models of risk communication are low in terms of both power sharing and community interaction, in contrast to newer dialogue models that are high in power sharing and high in community interaction (see Table 2).

		Community Interaction	
Power sharing	Low	Low "Information" Leaflets Displays	High "Consultation" Public meetings Planning Inquiries
	High	"Canvassing" Surveys Groups Interviews	Conversation Searching focus Planning cells

Table 2. Risk Communication "Conversation Models"

The key message from Brown and Campbell's (1991) table to communication planners is to take full account of the day-to-day experiences, perceptions and cultural values of various audiences in the formative stages of any campaign. Formative research should go beyond simple quantitative measures to include more reflexive, cultural understandings of campaign messages and audiences. Of equal importance is the need to understand what various audiences bring to the reception process in their use of mass media, and their use of mass media in terms of understanding health issues.

British researcher Jenny Kitzinger, who has completed many studies on health issues, says (1994): We are none of us self-contained, isolated, static entities; we are part of complex and overlapping, social, familial and collegiate networks. Our personal behaviour is not cut off from public discourses and our actions do not happen in a 'cultural vacuum'. We make sense of things through talking with and observing other people, through conversations at home or at work; and we act (or fail to act) on that knowledge in a social context. When researchers want to explore people's understandings, or to influence them, it makes sense to employ methods, which actively encourage the examination of these social processes in action.

The notion of an active dialogue model may appear idealistic or impractical, however it should be contrasted with the failures of the dominant 'top-down' campaign strategies, which comprised the older risk communication approach. An active dialogue model examining expert and lay knowledge should not be viewed as ignoring technical health knowledge. The approach explicitly acknowledges the legitimacy of all sources of knowledge central to risk dialogue, including technical knowledge (Handmer 1995). It acknowledges the importance of investigating the interplay between various discourses, including scientific, medical, health, media, and lay discourses, in planning any communication campaign.

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5. Content and delivery of mass media campaigns

Several aspects of mass media campaigns may influence their effectiveness. These can be categorized into variables related to message content and to message delivery.

5.1 Message content

One important aspect of message content involves the themes used to motivate the desired behavior change. Some common motivational themes in mass media campaigns to prevent unhealthy behabiours include:

- fear of legal consequences
- promotion of positive social norms
- fear of harm to self, others, or property
- and stigmatizing unhealthy behabiours as irresponsible and dangerous

The actions promoted by the campaigns also vary, ranging from messages related to abstinence or moderation to more specific behavioural recommendations. Decisions related to message content are generally made based on the opinions expressed by experts or focus groups rather than on evidence of effectiveness in changing behaviour (Randy et al., 2004).

Another aspect of message content relates to the optimal amount of anxiety produced (Witte & Allen, 2000; Tay, 2002). The effectiveness of "fear-based" campaigns is the subject of a long-standing controversy. Some level of anxiety arousal is generally seen as a desirable motivator. However, several authors have cautioned that generating intense anxiety by emphasizing the severity of a problem and the audience's susceptibility to it can cause some people to ignore or discount the campaign messages. Although this caution appears to be justified, increasing the strength of a fear appeal also increases the probability that the audience will change their attitudes, intentions, and behaviours. These changes are maximized, and defensive avoidance minimized, when the anxiety-arousing message is accompanied by specific information about actions that people can take to protect

themselves. The degree of persuasion versus defensive avoidance produced may be influenced by interactions between the message content and characteristics of the recipient. For instance, strong fear appeals may be more effective for motivating a response among segments of the audience that initially do not view the problem addressed as being important or relevant to them. They may also be more persuasive to people who are already engaging in the desired behaviour.

5.2 Message delivery

A mass media campaign cannot be effective unless the target audience is exposed to, attends to, and comprehends its message. Two important aspects of message delivery are control over message placement and production quality. Control over message placement helps to ensure that the intended audience is exposed to the messages with sufficient frequency to exceed some threshold for effectiveness.

It also allows for the optimal timing and placement of those messages. This control can only be assured with paid campaigns. Those that rely solely on donated public service time may attain adequate exposure, but message placement and frequency are ultimately left to media schedulers and station management; paid advertising time always gets preferential placement. Assuming that the target audience is adequately exposed, high production quality of the campaign messages may maximize the probability that the audience will pay attention to them. High production quality may also improve the chances of eliciting the intended emotional impact.

5.3 Message pretesting

Pretesting of campaign themes and messages is also thought to be important for a successful outcome (Hornik & Woolf, 1999). Pretesting can help to assess which themes or concepts are most relevant to the target audience. It can also help to ensure that the target audience will attend to and comprehend the specific messages presented. The importance of pretesting is highlighted by an evaluation of a mass media campaign designed to prevent alcohol-related problems by encouraging drinking in moderation. No pretesting of ads was done for this campaign, and a survey conducted at midcampaign found that over a third of respondents thought that the ads were promoting alcohol consumption. Many mistook them for beer ads.

6. Effectiveness of the mass media campaigns

An Australian review of mass media health promotion campaigns in two areas, cardiovascular risk behavior and safety restraints (Redman, Spencer, and Sanson-Fisher, 1990) illustrates these moderate effects. The authors began with 24 studies but determined that only nine met their criteria for adequate evaluation methodologies. These nine were further divided into two models of media effects: media only and media as agenda-setting plus community programming. Not surprisingly, they concluded that media only campaigns had discouraging results but that most studies of media plus intensive community interventions reported significant changes in behavior. The authors, however, challenged these positive results by questioning how important the media component was to the success of such combined programs.

It is probably time to consider a fourth era and that one is characterized by the use of the internet and by paid media rather than relying on public service time. It is too early to have much data from this fourth era but the White Houses' Office of the Drug Czar's anti-drug campaign shows some promising results as do many of the state anti-smoking campaigns.

What has been missing from these previous reviews is a systematic analysis of the size of effects achieved for different types of objectives, e.g., awareness, knowledge, attitudes, and behaviors. It was addressed this gap by identifying and reviewing the extant empirical data from evaluations of mass mediated health campaigns.

Campaign Objective	**Average Size of Change %**
Awareness (N=16)	56
Knowledge change (N=15)	22
Attitude change (N-21)	8
Behavior change (N=29)	13

Table 3. Average changes achieved after mass-mediated health campaigns

6.1 Changing knowledge and awareness

Changing behaviour is the highest priority in any public health campaign, however, most of the mass media will change knowledge and awareness more easily than behaviour.

Theoretically, the mass media are supposed to be most effective in achieving awareness. This review supports that expectation. When measuring awareness as simple recognition of the message, up to 83% levels of awareness have been reported, with a median of 48%. Although, without a pre message measure, some of this (perhaps up to 9%) may be measurement error, e.g., a desire to please the interviewer.

Ceiling effects must also be considered. If awareness is moderately high before the campaign, there are ceilings on the increases possible and probably these increases are harder to achieve. If both pre and post levels of awareness are available, increases can be calculated based on the percent of audience possible to change. For example, if awareness of the seriousness of colon cancer was 11% prior to a campaign and 40% after it, the increase, instead of being 29% would be 29% of the possible change of 89% which is 33%.

Knowledge gain is clearly achievable using mass mediated health campaigns. When exposure is guaranteed, dramatic increases in knowledge (as large as 60%) have been observed. When exposure is not guaranteed but the campaign can saturate a community, knowledge gains around 25% seem feasible. The size of these knowledge gains decrease when the campaigns are national in scope and must compete with numerous other stimuli. Still, most of the campaigns were successful in achieving some knowledge gain, although around 10% appears to be a more achievable increase. Multi—channel campaigns appear to be much more successful than single channel, especially print only campaigns.

Below there is some evidence about changes in levels of knowledge and awareness during mass media public health campaigns:

Alcohol

- Awareness of 'sensible drinking message' unit – up from 39 to 76%, 1989–94
- Knowledge of units in popular drinks – up 300%, 1989–94
- People's accurate assessment of their own drinking – up 5%, 1990–94.

HIV/AIDS

- Changes in levels of tolerance: those in the general public who say that homosexual relations are always or mostly wrong – 74% in 1987; 44% in 1997

- Attitudes to people with HIV infection: those who think people with AIDS have only themselves to blame – 57% in 1987; 36% in 1996
- Belief that a condom protects against HIV: 66% in 1986; 95% in 1997
- Women aged 18–19 whose partners used condoms: 6% in 1986; 22% in 1993.

Folic acid

- Spontaneous awareness of folic acid – 9% in 1995; 39% in 1997
- Sales of folic acid supplements and prescription rates – up 50% in an eight-month period.

Immunisation – the Hib vaccine

- Awareness of the Hib vaccine: 5% in 1992; 89% in 1993.

Skin cancer

- Proportion of the public who thought a suntan was important –28% in 1995; 25% in 1996
- Proportion of people who say they use a sunscreen when sunbathing in this country – 34% in 1995; 41% in 1996.

Note

With complex interventions that are intended to work synergistically it is difficult to attribute impacts to particular intervention components. Also, factors external to interventions – particularly if they are about sensitive subjects – may add to or subtract from their impact.

6.2 Changing attitudes and behaviours

All but four of the 21 evaluations of these health communication campaigns showed significant attitude change. The actual amount of change varied considerably. These results suggest that if exposure is insured, considerable attitude change is possible. The greatest amount of change (+38% for an AIDS video shown in waiting rooms of STD clinics (Solomon & DeJong, 1986) a case of forced exposure. The ARTA campaign (Woods, Davis, & Stover, 1991) also demonstrated considerable attitude change, an average of 20% across five attitude items, however, it must be remembered that the ARTA camp has received unusually high exposure for a PSA campaign, and was only part of extensive media coverage of HIV/AIDS. Therefore, it is impossible to know how much of that change is attributable to the campaign itself. Some of the evaluations clearly suffered from ceiling effects and the results are difficult to interpret. The surveys measuring outcomes of one of the Cancer Prevention Awareness campaigns, for example, found pre—campaign levels of 90+% on some of the items leaving little room to measure change. In spite of more control over airing than the typical PSA, the single channel campaigns did not achieve as much attitude change.

Although behaviour is normally considered one of the most difficult objectives to achieve in mediated health campaigns, the campaigns reviewed here were quite successful. Only six of the 29 behavioral change campaigns identified failed to achieve some level of change. The average change reported was 13% should be noted that these results may be biased by the tendency toward not publishing non—significant findings.

The literature is beginning to amass evidence that targeted, well-executed health mass media campaigns can have small-to-moderate effects not only on health knowledge, beliefs, and attitudes, but on behaviours as well, which can translate into major public health impact

given the wide reach of mass media. Such impact can only be achieved, however, if principles of effective campaign design are carefully followed.

There is renewed interest in the possibility of achieving policy goals through behaviour change. For example, a recent report commissioned for the Cabinet Office (Halpern and Bates, 2004) states that: 'Behaviourally based interventions can be significantly more cost-effective than traditional service delivery.' Interventions to change health-related behaviour may range from a simple, face-to-face consultation between professional and patient to a complex programme, often involving the use of mass media. This briefing looks first at the evidence on the effectiveness of interventions in changing behaviour generally; and second at the evidence concerning mass media campaigns.

A range of types of intervention aim to change 'risky' behaviours:

- Increasing knowledge and awareness of risks (through information and awareness-raising), or knowledge and awareness of services to help prevent risks
- Changing attitudes and motivations, eg through messages aimed at young people about the harm smoking does to skin and appearance
- Increasing physical or interpersonal skills, eg in using condoms, or deploying assertiveness skills to suggest that condoms be used
- Changing beliefs and perceptions, eg through interventions aimed at increasing testicular self-examination in men by raising their awareness of risk and 'normalising' self-examination
- Influencing social norms, eg by changing public perceptions of secondary smoking, or public acceptance of breastfeeding
- Changing structural factors and influencing the wider determinants of health, eg by implementing clean-air policies to decrease pollution and improve health
- Influencing the availability and accessibility of health services.

The evidence suggests that the following characteristics are the key elements for success in changing behaviour:

- Using theoretical models in developing interventions
- Intervening at multiple levels when appropriate
- Targeted and tailored (in terms of age, gender, culture, etc), making use of needs assessment or formative research
- Providing basic, accurate information through clear, unambiguous messages
- Using behavioural skills training, including self-efficacy
- Joining up services with other community provisions, eg providing transport links from community centres to clinics, or situating health services in accessible community settings
- Working with community members as advocates of appropriate services
- Providing alternative choices and risk reduction (eg promoting condom use), rather than simply telling people not to do something (eg don't take drugs, don't have sex)
- Addressing peer norms and social pressures.

Even though mass media health campaigns are used extensively, considerable debate continues over their effectiveness. This review differed from previous ones in that it included only those campaign evaluations that collected quantitative evidence of impact and it organized these data according to campaign objectives. In general, the results confirm Rogers and Storey's (1987) description of the era of moderate effects. As McGuire's (1989) hierarchy of effects model would predict, the size of the effects were greater at the earlier steps, i.e., awareness, and knowledge than the later stages of attitude change, and behavior change.

7. Lessons about implementing mass media campaigns

A report published by the National Health Services in UK (2004) on anti-smoking campaigns in the 1990s high-lighted lessons, some of which may be of general value:

- Campaigns need to contain a variety of messages – 'threatening' and 'supportive' styles of delivery can complement each other
- Anti-smoking advertising has to compete in a crowded media marketplace – a hook is needed to engage the emotions of the target audience
- Emotions can be engaged using humour, fear, sympathy or aspiration
- TV advertising, in particular, is better at jolting smokers than delivering encouraging or supportive messages
- Smokers want help and encouragement to quit
- Advertising should not tell people what they should do
- Smokers are motivated by knowing that they are not alone, and that support and help are available – they need reminding of the benefits of not smoking
- Content and style of delivery are of equal importance – smokers can accept unpalatable messages if the context is encouraging and supportive.

8. Conclusion

Mass media health campaigns clearly can be an effective tool for health promotion whether the effort is on a national or local scale. We should stop arguing whether they are more or less effective than other strategies or whether one channel is better than another. Instead we should carefully formulate our conceptual model of how we expect an intervention to work and then evaluate it accordingly. Health promotion interventions are not like pills – they are much more complex and indirect in the way they work. Therefore our evaluation designs may be very different allowing us to track a social influence process and document its effects on social and political institutions as well as on individuals.

8.1 When to use the media

It is apparent from the evidence that the media can be an effective tool in health promotion, given the appropriate circumstances and conditions. Some of the situations in which media have been found to be most appropriate are as follows.

1. When wide exposure is desired. Mass media offer the widest possible exposure, although this may be at some cost. Cost–benefit considerations are at the core of media selection.
2. When the timeframe is urgent. Mass media offer the best opportunity for reaching either large numbers of people or specific target groups within a short timeframe.
3. When public discussion is likely to facilitate the educational process. Media messages can be emotional and thought provoking. Because of the possible breadth of coverage, they can be targeted at many different levels, stimulating discussion and thereby expanding the impact of a message.
4. When awareness is a main goal. By their very nature, the media are awareness-creating tools. Where awareness of a health issue is important to its resolution, the mass media can increase awareness quickly and effectively.
5. When media authorities are 'on-side'. Where journalists, editors and programmers are on-side with a particular health issue, this often guarantees greater support in terms of space and editorial content.

6. When accompanying back-up can be provided on the ground. Regardless of whether media alone are sufficient to influence health behaviour, it is clear that the success of media will be improved with the support of back-up programmes and services.
7. When long-term follow-up is possible. Most changes in health behaviour require constant reinforcement. Media programmes are most effective where the opportunity exists for long-term follow-up. This can take the form of short bursts of media activity over an extended period, or follow-up activities unrelated to media.
8. When a generous budget exists. Paid advertising, especially on television, can be very expensive. Even media with limited reach, such as pamphlets and posters, can be expensive depending on the quality and quantity. For media to be considered as a strategy in health promotion, careful consideration of costs and benefits needs to be undertaken.
9. When the behavioural goal is simple. Although complex behaviour change such as smoking cessation or exercise adoption may be initiated through media programmes, the nature of media is such that simple behaviour changes such as immunisation or cholesterol testing are more easily stimulated through the media. In general, the more complex the behaviour change, the more back-up is required to supplement a media health programme.
10. When the agenda includes public relations. Many, if not most, health promotion programmes have an agenda which is not always explicit – maybe to gain public support or acknowledgement, to solicit political favour, or to raise funds for further programmes. Where public relations are either an explicit or implicit goal of a programme, mass media are effective because of their wide-ranging exposure.

8.2 Further research questions

1. *Evaluating message content effects:* What is the relative effectiveness and cost-effectiveness of various campaign themes (e.g., law enforcement, legal penalties, social stigma, guilt, injury to self and others) for reducing unhealthy behaviours? For influencing public support for stronger prevention activities?
2. *Evaluating message delivery effects:* What is the dose–response curve for varying levels of advertising exposure (e.g., none, light, moderate, and heavy)? Does the shape of this curve vary according to message content and the outcome evaluated? What is the relative effectiveness and cost-effectiveness of different media types (TV, radio, etc.)? Paid advertising and public service announcements? What is the optimal exposure schedule for public health mass media campaigns (e.g., intermittent waves of messages vs a steady flow)? How should mass media campaigns be adapted to the changing media environment (e.g., market segmentation, Internet, message filtering devices)?
3. *Evaluating message/recipient interactions:* To what extent are certain population groups more or less likely to be influenced by mass media campaigns? Are some themes more likely than others to influence "hard-to-reach" target groups (e.g., enforcement themes for "hard-core" drinking drivers)?
4. *Improving research design:* What measurement issues need to be addressed to improve assessment of media and message exposure? What research designs can best address problems in measuring exposure?

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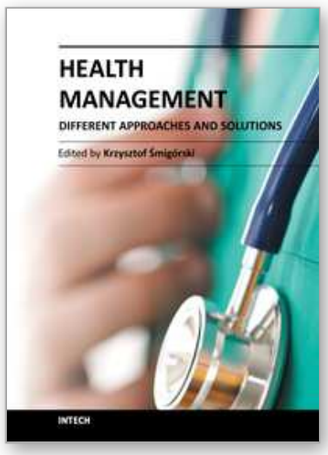
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The development in our understanding of health management ensures unprecedented possibilities in terms of explaining the causes of diseases and effective treatment. However, increased capabilities create new issues. Both, researchers and clinicians, as well as managers of healthcare units face new challenges: increasing validity and reliability of clinical trials, effectively distributing medical products, managing hospitals and clinics flexibly, and managing treatment processes efficiently. The aim of this book is to present issues relating to health management in a way that would be satisfying for academicians and practitioners. It is designed to be a forum for the experts in the thematic area to exchange viewpoints, and to present health management's state-of-art as a scientific and professional domain.

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