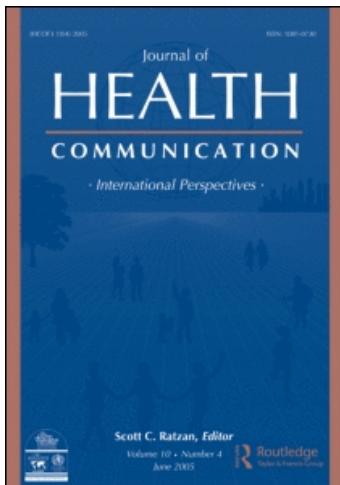


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The Application of Youth Substance Use Media Campaigns to Problem Gambling: A Critical Evaluation

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Despite the negative impact that problem gambling poses on individuals and society there have been few gambling prevention campaigns specifically targeting youth. The authors review the literature on past and current drug, alcohol, and tobacco use prevention media campaigns, examining the similarities across 25 health communication programs with the aim of viewing their applicability for the prevention of youth problem gambling. Critical features of effective campaigns are identified and assessed in terms of their applicability for youth problem gambling. Recommendations for the design, implementation, and evaluation of a youth gambling media campaign are discussed.

Background

In today's media saturated society, children and adolescents routinely are confronted with competing and conflicting messages about adult lifestyle choices. While legal prohibitions exist to protect young people from engaging in risky behaviors, youth simultaneously are exposed to messages from a broad range of media endorsing alcohol use, tobacco use, drug use, and gambling, leading some researchers to argue that media influences are placing children and adolescents at an increased risk for the development of high-risk behaviors (e.g., Brown & Witherspoon, 2002; Villani, 2001). Such behaviors include binge drinking, tobacco use, substance abuse, and pathological gambling, the latter having only recently emerged as a significant public health issue (Korn & Shaffer, 1999; Shaffer & Kidman, 2003). While in the past efforts have been made to prevent the onset, reduce the risk, and minimize the consequences of many high-risk behaviors, little attention has been focused on youth

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gambling despite a prevalence rate of problem gambling in youth that approximately doubles that of adults (Derevensky, Gupta, Dickson, Hardoon, & Deguire, 2003). Likewise, little attention has been paid to the media itself as an untapped resource in the development of comprehensive health promotion and prevention strategies.

Although prevention initiatives have been few and far between, great strides have been made toward understanding the phenomenon of youth gambling (see reviews by Derevensky & Gupta, 2000; Hardoon & Derevensky, 2002). Currently, most youth report having gambled during their lifetime (National Research Council, 1999) and studies undertaken in Canada, the United States, and the United Kingdom estimate a probable pathological gambling rate of between 4–6% of youth under 18 years of age, with another 10–15% at risk for the development of a gambling problem (Derevensky & Gupta, 2000; Jacobs, 2000; National Research Council, 1999; Shaffer & Hall, 1996). Although important gaps in knowledge remain, it is clear that young people represent a vulnerable group susceptible to the development of serious gambling problems (Derevensky & Gupta, 2000; Gupta & Derevensky, 2000; National Research Council, 1999). Researchers also have raised concerns about Internet gambling among youth, for example, citing the dramatic increase in Internet gambling websites in recent years coupled with the lack of barriers that currently exist to prevent young people from engaging in a potentially dangerous activity (Messerlian, Byrne, & Derevensky, 2004).

A significant element that frames the social environment of youth gambling is the media. In a media-infused environment where children on average spend more than 21 hours per week watching television (Nielsen Media Research, 1998; Roberts, Foehr, Rideout, & Brodie, 1999), promotional advertising of gambling has surged in concert with the expansion of gambling venues. In addition to gambling, the media is saturated with images that normalize and glamorize the use of tobacco, alcohol, and to some extent illicit drugs, primarily through movies and television but also in print advertisements and sponsorship of sporting events. Although it is difficult to measure actual levels of exposure to such messages, the amount of money spent by tobacco and alcohol manufacturers per year (\$6 billion and \$2 billion, respectively) reveals the importance of promotional advertising for the industry (American Academy of Pediatrics, 1999).

Media-based messages about gambling generally imply that gambling is an exciting and enjoyable form of entertainment (Azmier, 2000; Gupta & Derevensky, 1998; Wynne, Smith, & Jacobs, 1996). Moreover, the current trend in public attitudes toward gambling appears to be one of widespread acceptance (Azmier, 2000; Stinchfield & Winters, 1998). Current public opinion regarding gambling as being a pleasurable and relatively harmless activity may be seen to be reflected in media-based depictions of gambling. For example, one reality-type television program popular in the United States and Canada follows the weekly events that transpire within a glamorous Las Vegas casino, while *Celebrity Poker* and other televised poker tournaments continue to receive high ratings. Research indicates that positive attitudes toward gambling coupled with an early age of onset of gambling behavior represent a significant risk factor for the development of gambling-related problems (Dickson, Derevensky, & Gupta, 2002; Gupta & Derevensky, 1998; Jacobs, 2000; National Research Council, 1999; Wynne et al., 1996). Since many high-risk behaviors share common risk and protective factors (Dickson et al., 2002; Jacobs, 1998; Jessor, 1998), it may be informative to examine effective prevention campaigns targeted at other addictive

behaviors before building a campaign designed to reduce problem gambling in youth.

A critical question that arises when faced with the task of examining media campaigns is how to isolate the features that contribute to a particular campaign's success. The effectiveness of youth substance use media campaigns on health outcomes has been a long-standing debate among public health specialists. At issue are the differing interpretations and criteria upon which to define and measure the efficacy of a campaign. For example, organizations that sponsor social marketing campaigns often require the use of experimental evaluation designs based on behavioral change. In the United States, the National Registry of Effective Programs (NREP) upholds such standards, and these standards have been adopted by the Substance Abuse and Mental Health Services Administration (SAMHSA) and its Center for Substance Abuse and Prevention (CSAP) in order to create a database of effective youth substance use prevention programs (Schinke, Brounstein, & Gardner, 2002). Within the scientific community, however, there is no collectively accepted standard of effectiveness as evidenced by numerous reviews outlining ambiguous findings of health promotion program evaluations (Derzon & Lipsey, 2002; Donaldson, 2002; Flay & Cook, 1989; Hornick, 2002; Salmon & Murray-Johnson, 2001; Weiss, 1997). As one would expect, the reviews have concluded that the more rigorous the design of an evaluation outcome study, the more difficult it becomes to demonstrate program success. While ideally we would prefer to meet the most rigorous of scientific standards, it is important to understand that behavioral changes often require years of exposure to prevention messages and should be maintained as a long-term evaluation of effectiveness. Short-term measures of positive impact can be incorporated into evaluation criteria such as changes in attitudes and knowledge, thus allowing for the recognition of valuable campaign features.

This article critically reviews the literature on past and current drug, alcohol, and tobacco use prevention media campaigns, examining the similarities across health communication programs believed to be effective, with the aim of viewing their applicability for the prevention of youth problem gambling. This review then is followed by recommendations for the design, implementation, and evaluation of a media campaign targeting youth gambling.

Method

Selection Criteria

Research studies were identified and selected for this review and synthesis if they met the following criteria:

1. Media campaigns were defined as organized outreach efforts using at least one form of *community wide* mass media. Local, multiple site, national campaigns and university-based campaigns were included, but school-based campaigns were excluded due to concerns about comparing campaigns disseminated within the limited scope of a classroom environment versus larger campaigns disseminated in naturalistic settings. Interventions were delivered via radio, television, or a combination of the two. Interventions delivered via print were only included if combined with audio or televised broadcasting.

2. The study was published in a journal, report, or edited book during the years 1990–2003 in order to control for the rapidly changing media environment, changes in target group characteristics including the marked increase in children's media exposure (Roberts, 2000; Subrahmanyam, Greenfield, Kraut, & Gross, 2001) and family media habits (e.g., parental supervision; Gentile & Walsh, 2002; Villani, 2001; Woodard & Gridina, 2000). In order to ensure relevance and consistency only North American programs were included.
3. The study assessed the effects of a media intervention designed to prevent or reduce use of either (1) tobacco; (2) alcohol; (3) drugs; or (4) a combination of these substances for youth through the age of 21.
4. The study specified a communication objective, based upon a theoretical framework, preintervention, or focus group (formative), or all of these types of research. Based on the NREP standards of research, studies must have indicated adequate information about theory, hypothesis, and results (representing a 3 on a 5-point Likert scale).
5. The study presented quantitative data on exposure to the campaign. Studies without a measure of reach or below 50% reach (meaning that at least half of the target group did not recall the message or characteristics of the message) were included but are marked with an asterisk. Caution should be taken in interpreting the results of these studies given that the extent to which the audience is exposed to campaign messages is critical to the effectiveness of such a campaign. Whenever possible, a distinction was made between exposure data based on either aided or unaided recall. Campaign outcome was assessed based on measurable changes in attitudes, knowledge, behavior, or all of these.

Search Procedures

The data assembled for this analysis represents the findings presented in 53 articles and reports detailing outcome data from 25 prevention campaigns. Sources used for this analysis are marked with an asterisk. Articles and reports were identified through computer searches in bibliographic databases including PsychINFO, MEDLINE, ERIC, Current Contents, Sociological Abstracts, HealthSTAR, Information on Drug and Alcohol Database (IDA), National Institute on Drug Abuse (NIDA), National Criminal Justice Reference Service (NCJRS), Centers for Disease Control Health Topic: Tobacco, Sociological Abstracts, and SAMHSA Model Programs. The database keywords *adolescents*, *campaign*, *media*, *health*, *communication*, *social marketing*, and *intervention* were supplemented with *smoking*, *tobacco*, *alcohol*, *drugs*, *marijuana*, and *substance use*. Additional studies were identified from citations in published books and journal reviews.

Results

In total, 25 campaigns were systematically analyzed using information about campaign goals, target group, campaign duration, message channel and vehicle, message content, outcome, exposure, and reach. The majority of campaigns contributing to this analysis were developed and disseminated in the United States. The richest and most abundant source of data for these analyses came from tobacco use prevention media campaigns. Of the 25 campaigns that were analyzed, 12 addressed tobacco use, 7 addressed alcohol use, and 6 addressed drug use (see Table 1). Many

Table 1. Campaign information including type of substance use being targeted and target group

Campaign	Type	Target group
1. La Esperanza del Valle*	Alcohol	Hispanic youth
2. University of Arizona social marketing campaign	Alcohol	University students
3. Just the Facts	Alcohol	University students
4. Central West/Southwest Binge Drinking Media Campaign	Alcohol	Youth aged 19–24 residing in Central West/Southwest Ontario
5. Operation Safe Crossing	Alcohol	Youth aged 18–20 years and adults aged 21–30 years
6. Oklahoma Zero Tolerance Law Public Information Campaign	Alcohol	Young drivers aged 16–18
7. The Rowan University Social Norms Project	Alcohol	Undergraduate university students
8. Sensation Seeking Targeted Prevention Approach (SENTAR)	Drugs	High sensation-seeking youth in grades 7–10
9. Just Between Friends*	Drugs	Youth in junior high school and high school
10. Doing Drugs Means U Can't Be U*	Drugs	Youth in junior high school and high school
11. Partnership for a Drug-Free America (PFDA)	Drugs	Youth aged 13–17
12. Office of the National Drug Control Policy (ONDCP) National Youth Anti-Drug Media Campaign	Drugs	Youth aged 9–18, with a current focus on youth aged 11–17, and parents
13. Project STAR/Midwestern Prevention Project (MPP)*	Drugs	Adolescents, parents, and the community
14. Massachusetts Tobacco Control Program	Tobacco	Residents of Massachusetts, all ages
15. Truth (American Legacy Foundation)	Tobacco	Youth aged 12–17, especially risk-taking youth, some targeting of ethnic minorities
16. Think. Don't Smoke (Philip Morris)	Tobacco	Youth
17. Oregon's Tobacco Prevention and Education Program	Tobacco	Residents of Oregon, some targeting of ethnic minorities
18. Challenge to Youth	Tobacco	Francophone and Anglophone youth aged 12–19

(Continued)

Table 1. Continued

Campaign	Type	Target group
19. California Tobacco Control Program	Tobacco	Residents of California, with a focus on children, adult smokers, pregnant women, and ethnic minorities
20. Florida "truth" campaign	Tobacco	Youth aged 12–16 and parents who smoke
21. Minnesota Tobacco Control Initiative	Tobacco	Children from kindergarten to grade 12, with an emphasis on youth aged 12–14
22. Quit 4 Life	Tobacco	Youth aged 15–19 who smoke daily
23. MOST of Us	Tobacco	Youth aged 12–17
24. The Vermont Study	Tobacco	Vermont youth in grades 4–6
25. Wisconsin Tobacco Control Board's Counter-Marketing Campaign	Tobacco	Wisconsin youth aged 12–18

*Campaigns with no measure of reach or below 50% reach (meaning that at least half of the target group did not recall the message or characteristics of the message).

campaigns involved media interventions in conjunction with other campaign activities such as school-based programs, contests, websites, toll-free help lines, and community events designed to raise awareness about key issues. In most cases, more than one publication was used to provide information about a campaign. Two campaigns, the Office of the National Drug Control Policy's National Youth Anti-Drug Media Campaign and the Partnership for a Drug-Free America, were analyzed separately, acknowledging substantial overlap between the two programs from 1998 (when the National Youth Anti-Drug Media Campaign was launched) onward (Backer & Marston, 1993; Buchanan & Wallack, 1998; Office of the National Drug Control Policy, 2002).

Range of Outcomes

Across substance use categories, 20 campaign evaluations, representing 80% of the total number of campaigns, provided pre- and postcampaign data involving at least two separate periods of data collection to measure exposure and reach. Of these campaigns, 85% were associated with some degree of positive change in youth substance use knowledge, attitudes, and behavior. In total, 8 campaign evaluations reported favorable effects on attitudes toward substance use. Of these campaigns, 3 targeted drug use in young people and the other 5 were tobacco use prevention campaigns. An additional 2 campaigns were associated with unfavorable changes in attitude, the Office of the National Drug Control Policy (ONDCP) National Youth Anti-Drug Media Campaign and Philip Morris' Think. Don't Smoke campaign (Farrelly, Healton, et al., 2002; ONDCP, 2002). Ten campaigns were associated with changes

in substance use knowledge consisting mainly of increased awareness of risk as well as social norms surrounding substance use (see Table 2). Four alcohol use prevention campaigns, 2 drug use prevention campaigns and 4 tobacco use prevention campaigns were associated with changes in knowledge regarding drinking, drug use, and smoking. Meanwhile, 13 campaigns, representing 52% of the total number of campaigns, were associated with changes in substance use behavior. Changes included decreases in the prevalence of alcohol consumption, drug use, and cigarette smoking, as well as decreases in cigarette sales and decreases in the number of alcohol-related traffic accidents involving youth. Also included were changes in initiation rates of substance use.

Source

According to McGuire (2001) several factors affect the persuasive impact of media campaigns including the source, the message, the channel, and audience characteristics. The source of the media message, to begin with, refers to the communicator or spokesperson used to distribute the message. Not surprisingly, characteristics of the source such as perceived credibility, attractiveness, and power can impact the persuasive impact of a media message. As well, similarity between the source and the audience is known to increase persuasive impact (McGuire, 2001).

Several campaigns associated with positive outcomes employed teenage actors (Backer & Marston, 1993; Clarke, 1998; Earle, 2000; Palmgreen et al., 2002; Sly & Heald, 1999a). In at least 4 campaigns, messages delivered by youth were associated with positive outcomes. A similar strategy that had positive results was the use of first-person narratives where individuals recounted personal stories about their negative experiences with drugs, alcohol, and tobacco. For example, an evaluation of the Massachusetts Tobacco Control Program (MTCP) revealed that most advertisements recalled by teenagers were those presenting real people telling personal stories about how tobacco-related illness had negatively affected them and their loved ones (Biener, 2002). Health Canada used this very approach in a nationwide contest called Challenge to Youth (Les Etudes de Marche Createc, 1998). Young Canadians, aged 12–19 years, were invited to enter a contest by calling a toll-free number and submitting a 20-second message detailing how smoking had affected them. Ten winning messages were transformed into public service announcements, which aired in movie theatres and on youth-oriented television stations across Canada. Postcampaign surveys revealed that based on aided recall, the Challenge to Youth campaign had high reach, with 81% of youth reporting that the ads were more convincing than any other antitobacco advertisement to which they remembered being exposed. The majority of respondents (73%) stated that the ads had convinced them, at least somewhat, not to smoke (Les Etudes de Marche Createc, 1998).

Message Variables

Campaigns associated with positive outcomes shared certain similarities with respect to message characteristics. A total of 14 campaigns, representing 56% of the total number of campaigns evaluated, employed health effects messages using information about the negative health effects of substance use in order to effect change in attitudes, knowledge, behavior, or all of these (see Table 2). Of the 14 campaigns, 79% were associated with positive outcomes. The remaining 3 campaigns, including

Table 2. Campaign information including message strategies, outcomes, and sources

Campaign	Message strategies	Outcomes	Sources
1	Health effects, social effects, culture	Limited data	Lalonde, Rabinowitz, Shefsky, & Washienko, 1997
2	Denormalization	Knowledge, behavior	Glider, personal communication, 2003; Glider, Midyett, Mills-Novoa, Johannessen, & Collins, 2001
3	Denormalization	Knowledge	Gomberg, Schneider, & DeJong, 2001
4	Health effects, fear	Limited data	Middlesex-London Health Unit, 2001
5	Education about legal sanctions/policies	Knowledge, behavior	Lange & Voas, 2000; Voas, Tippetts, Johnson, Lange, & Baker, 2002
6	Education about legal sanctions/policies	Behavior	Clarke, 1998
7	Denormalization	Knowledge, behavior	Jeffrey, Negro, Miller, & Frisone, 2003
8	Health effects, social effects, teenage actors	Behavior	Donohew, Palmgreen, Lorch, Zimmerman, & Harrington, 2002; Palmgreen, Donohew, Lorch, Hoyle, & Stephenson, 2001, 2002; Stephenson et al., 2002
9	Social effects, denormalization, refusal skills	Attitudes	Kelly, Swaim, & Wayman, 1996
10	Health effects, social effects, denormalization	Attitudes, knowledge	Kelly, Swaim, & Wayman, 1996
11	Health effects, social effects, denormalization, fear-based, personal stories, refusal skills	Attitudes, knowledge	Backer & Marston, 1993; Block, Morwitz, Putsis, & Sen, 2002; Buchanan & Wallack, 1998; Earle, 2000; PFDA, 2000, 2002
12	Health effects, denormalization, fear-based, personal stories, refusal skills	Unfavorable changes in attitudes	Office of the National Drug Control Policy (ONDCP), 2002

13	Mass media coverage of campaign showing individual-, family-, school-, and community-level program implementation, refusal skills	Behavior	Johnson et al., 1990; Pentz & Valente, 1993
14	Health effects, social effects, cessation resources, personal stories, industry manipulation	Behavior	Abt Associates, 1999, 2000; Biener, 2002; Harris, Connolly, Brooks, & Davis, 1996; Siegel & Biener, 2000, 2002
15	Health effects, culture, teenage actors, refusal skills, industry manipulation	Attitudes	Farrelly, Davis, et al., 2002; Farrelly, Healton, et al., 2002
16	Refusal skills	Unfavorable changes in attitudes	Biener, 2002; Farrelly, Davis, et al., 2002; Farrelly, Healton, et al., 2002
17	Health effects, denormalization, fear-based, culture, cessation resources	Behavior	Oregon Department of Human Services, Health Services, 2003; Oregon Health Division, Department of Human Resources, 1999; Oregon Health Division, Department of Human Services, 2000
18	Health effects, personal stories, teenage spokespersons	Attitudes, knowledge	Les Etudes de Marche Createc, 1998
19	Health effects, denormalization, cessation resources, education about legal sanctions/policies	Attitudes, behavior	Gilpin, et al., 2001; Hu, Sung, & Keeeler, 1995; Pierce, Emery, & Gilpin, 2002; Rohrbach et al., 2002
20	Health effects, denormalization, teenage actors, industry manipulation	Attitudes, behavior	Bauer, Johnson, Hopkins, & Brooks, 2000; Sly & Heald, 1999a, 1999b; Sly, Heald, & Ray, 2000, 2001; Sly, Hopkins, Trapido, & Ray, 2001; Sly, Trapido, & Ray, 2002
21	Social effects, denormalization	No positive changes	Murray, Prokhorov, & Harty, 1994
22	Cessation resources	Behavior	Peters, 1995

(Continued)

Table 2. Continued

Campaign	Message strategies	Outcomes	Sources
23	Denormalization	Knowledge, behavior	Linkenbach, 2003; Linkenbach & Perkins, 2003
24	Health effects, denormalization, refusal skills, cessation resources, industry manipulation	Knowledge, behavior	Worden & Flynn, 2002
25	Health effects, industry manipulation	Attitudes, knowledge	Riener, Christiansen, Ahrens, & Moberg, 2003

Note. Campaign evaluations that relied on pre-post measures administered only in the context of controlled viewing of campaign messages (e.g., in a classroom) are labeled "limited data."

La Esperanza del Valle, the Central West/Southwest Binge Drinking Media Campaign, and the National Youth Anti-Drug Media Campaign were not identified as reaching success due to ambiguous outcomes, weak reach, or both.

Denormalization messages designed to challenge social norms surrounding drinking, smoking, and drug use were employed by 13 campaigns, representing 52% of the total number of campaigns evaluated. Of the campaigns that employed denormalization messages, 85% were associated with positive outcomes (i.e., measurable within-group or between-group differences in attitudes, knowledge, behavior, or all of these). Two campaigns that employed denormalization messages, the National Youth Anti-Drug Media Campaign and the Minnesota Tobacco Control Initiative, were not associated with positive outcomes.

Advertisements that communicated strategies for refusal, meanwhile, were less effective. The American Legacy Foundation conducted an evaluation of its truth campaign as well as Philip Morris' Think. Don't Smoke campaign and found that ads featuring refusal skills messages were less persuasive compared with those that described short-term health risks of smoking (Farrelly, Davis, et al., 2002). Fishbein, Hall-Jamieson, Zimmer, von Haeften, and Nabi (2002) examined 30 advertisements produced by the Partnership for a Drug-Free America and concluded that refusal messages were among the least successful advertisements in terms of perceived effectiveness. Similarly, the National Youth Anti-Drug Media Campaign often relies on refusal messages as a campaign strategy. Although this campaign has received considerable funding, thus far there has been no evidence of a desirable campaign effect, and, more importantly, there is evidence of unfavorable delayed effects of campaign exposure on intentions to use marijuana (ONDCP, 2002).

Philip Morris' Think. Don't Smoke campaign also was associated with unfavorable changes in attitude. Exposure to campaign messages was found to be associated with an increase in the probability of youth intending to smoke in the next year (Farrelly, Heaton, et al., 2002). Biener (2002) has pointed out that the Philip Morris advertisements never discuss the negative health-related consequences of smoking, leading some researchers to argue that tobacco companies should not be funding youth smoking prevention programs (Landman, Ling, & Glantz, 2002).

Channel

The channel refers to the media vehicle used to effect change. Many media campaigns transmitted messages using advertisements, public service announcements, or news segments aired on television, radio, or through print media. By far the most commonly recalled source was television. Researchers evaluating the Florida truth campaign found that the most effective component of the campaign, which included messages disseminated via radio, posters, billboards, magazines, and television, was the antitobacco television ads (Sly & Heald, 1999b). Similarly, twice as many youth recalled television advertisements compared with radio advertisements produced by the National Youth Anti-Drug Media Campaign (ONDCP, 2002) and the American Legacy Foundation truth campaign (Farrelly, Davis, et al., 2002). In an evaluation of the MTCP, Siegel and Biener (2000) found that 71% of youth recalled television antismoking messages and only 33% recalled radio advertisements. The authors also point out that exposure to radio was not effective for any age group longitudinally.

Specific information about the frequency of message dissemination often was missing. Our analysis suggests that effective prevention programs were more likely

to have selected youth-oriented slots to air campaign messages. For example, Worden and Flynn (2002) conducted research in schools to identify program preferences according to gender, age, and risk group. Among other findings, they concluded that youth-oriented television stations such as MTV were popular with high-risk youth. They then were able to use this information to achieve high visibility. Likewise, the team who developed, disseminated, and evaluated the Sensation Seeking Targeted Prevention Approach (SENTAR) has argued that because teenagers only watch television for a few hours per day, it is critical that advertisements be aired at a time when they will be viewed by the target group (Stephenson et al., 2002). Before *SENTAR* was aired, researchers hired a media buyer to consult television ratings in order to determine which programs would be most viewed by the target audience. These findings then were cross-validated with interviews. Subsequently, the *SENTAR* program was associated with significant decreases in marijuana use among sensation-seeking youth.

Similarly, the Central West/Southwest Binge Drinking Media Campaign aired radio advertisements during the evening, night, and weekend time slots, when the target audience was most likely to be listening (Middlesex-London Health Unit, 2001). Advertisements were aired during the weeks before and after Victoria Day and Labour Day weekends, holidays known to be associated with increased alcohol consumption. Another university-based campaign, Just the Facts, disseminated denormalization messages twice in one year for a period of 8 weeks each time, once at the beginning of the fall semester, and once at the beginning of the spring semester. In both the Just the Facts campaign and the Central West/Southwest campaign, message dissemination was linked to preexisting knowledge about substance use patterns among the target population. This illustrates the need to allot time and funding to preintervention research when designing media campaigns (Donaldson, 2002).

Audience Variables

Many campaign evaluations called attention to the importance of targeted, rather than broad, general messages. Aspects of targeting that were addressed were age, culture, gender, level of engagement in the target activity (drinking alcohol, taking drugs, or smoking), and personality characteristics such as sensation seeking.

Age appears to be an important targeting variable. Several campaigns pointed to the need for early intervention, citing evidence that younger children were more affected by advertising compared with teenagers. An evaluation of the MTCP found that younger teens (aged 12–13 years) exposed to television antismoking ads were less likely to become established smokers 4 years later, while somewhat older adolescents (ages 14–15 years) were not affected by the same ads (Siegel & Biener, 2000). Sly and Heald (1999a) found that teenagers below the age of 16 years were more receptive to the Florida truth campaign advertisements compared with older teenagers. Declines in tobacco use also were concentrated in the youngest segment of the youth population, while among older youth only insignificant changes were observed. In evaluating the California Tobacco Control Program, Gilpin and her associates (2001) found that although approximately two thirds of youth aged 12 to 13 were committed never smokers, only 40% of youth aged 16 to 17 shared the same attitudes toward tobacco. The authors suggest that this finding indicates that prevention efforts should begin well before adolescence (Gilpin et al., 2001).

Males and females sometimes responded differently to campaigns for unknown reasons. For example, more males (80%) than females (70%) confirmed awareness of the American Legacy Foundation's truth campaign advertisements (Farrelly, Davis, et al., 2002). Biener (2002) also found significant differences in ratings of advertisement effectiveness between boys and girls for antitobacco advertisements produced by the MTCP and the Philip Morris tobacco company. Regardless of the message, in both campaigns girls rated all advertisements as being more effective than did boys.

Several campaigns such as the American Legacy Foundation's truth campaign targeted specific cultural and minority groups such as Hispanic, African American, and Asian youth (Farrelly, Davis, et al., 2002; Oregon Department of Human Services, Health Services, 2003). Others have argued for specific targeting of minority groups (including ethnic and linguistic minorities, women, gay, lesbian, transgender, and rural populations) based on results of their programs (Massachusetts Department of Public Health, 1999). For example, researchers evaluating Health Canada's Challenge to Youth campaign found that although recall of campaign advertisements was slightly higher among Francophone youth, compared with Anglophone youth they were less inclined to feel targeted and less convinced not to smoke after seeing public service announcements (Les Etudes de Marche Createc, 1998). This may be particularly relevant for other minority populations given that many people unwittingly assume that the translation of advertisements alone constitutes targeting a specific population.

The degree to which a person is already involved in the targeted behaviour appears to be relevant (Kelly, Swaim, & Wayman, 1996; Siegel & Biener, 2000). For example, Biener (2002) examined the perceived effectiveness of several anti-smoking advertisements and found that smokers rated all advertisements as significantly less effective compared to non-smokers. Another campaign, Doing Drugs Mean U Can't Be U, was more successful in effecting change in moderate drug users compared with heavy drug users (Kelly et al., 1996). The authors suggest that moderate users may be the most important group to target because unlike heavy users, they have not yet developed strong rationalisations for their behavior.

Finally, personality traits of the receiving audience, such as sensation seeking, appear to affect how a message is received. Messages specifically designed to appeal to sensation-seeking youth were found to be effective for this subset of the population. For example, SENTAR was designed to reduce drug use in sensation-seeking adolescents, a group identified as having a drive for novel stimuli and typified by a willingness to take social, physical, and financial risks (Stephenson et al., 2002). SENTAR advertisements were carefully created to appeal to sensation-seeking adolescents, using health effects messages specifically designed to elicit sensory, affective, and arousal responses through the use of novel, dramatic, emotionally powerful, physically arousing, graphic, explicit, unconventional, fast-paced, or suspenseful imagery. Surveys conducted before and after the campaign revealed that SENTAR was associated with a significant decrease in marijuana use among high-risk adolescents (Palmgreen, Donohew, Lorch, Hoyle, & Stephenson, 2001).

Other campaigns using intense, hard-hitting messages also were found to be quite effective, possibly because they appeal to sensation-seeking youth. For example, the Florida truth campaign's anti-industry advertisements were judged to be most successful when they were direct and hard-hitting (Sly & Heald, 1999a). The American Legacy Foundation's truth campaign, which demonstrated promising

results, employed hard-hitting ads that empowered risk-taking and rebellious youth to act defiantly against the tobacco industry (Farrelly, Davis, et al., 2002). The truth campaign advertisements used shocking imagery to underline the dangers of cigarette smoking and industry manipulation. In one advertisement, youth dragged body bags in front of the headquarters of a tobacco company, while announcing by megaphone that the bags symbolized the 1,200 people killed daily by tobacco. Exposure to the truth advertisements was associated with changes in attitude, most notably the likelihood that youth would agree with such statements as "taking a stand against smoking is important" and "not smoking is a way to express independence" (Farrelly, Heaton, et al., 2002). Similarly, focus group data from the Central West/Southwest Binge Drinking Media Campaign suggested that effective ads ought to be either vivid and graphic or very simple and quiet (Middlesex-London Health Unit, 2001).

Recommendations for a Youth Gambling Prevention Campaign

Youth gambling behavior shares a number of similarities with other addictive and potentially harmful substance use behaviors. Findings from substance use prevention campaigns are likely to be relevant to the development of a youth gambling prevention campaign. Consequently, the development of prevention messages should be informed by empirical research on youth gambling. It is critical that decisions regarding message strategies, targeting variables, and dissemination characteristics be informed by data obtained through rigorous focus testing in order to ascertain which messages specific to problem gambling are most salient to youth.

Because negative health effects messages and denormalization strategies can have a positive impact upon youth substance use knowledge, attitudes, and behaviors, they also may be effective tools for effecting change in the area of youth problem gambling. Although the negative health effects of gambling are less evident than the negative health effects of alcohol, drug, or tobacco use, gambling prevention messages should nonetheless highlight the risks associated with gambling. Similarly, denormalization messages could be employed in order to modify social norms surrounding gambling. Industry manipulation messages are also a promising possibility. Despite obvious differences between smoking and gambling in terms of direct physical harm, behind both activities lies an immensely lucrative industry. Tobacco countermarketing campaigns have capitalized on this fact by calling attention to the actions of tobacco corporations, empowering youth to defy the industry by choosing not to smoke (Abt Associates, 2000; Farrelly, Davis, et al., 2002; Goldman & Glantz, 1998; Sly, Heald, & Ray, 2001; Worden & Flynn, 2002). A gambling prevention media campaign might similarly employ industry manipulation messages. For example, messages could underline the fact that in order to make profits the industry must produce games designed to make individuals repeatedly lose money.

It would be wise to examine the usefulness of advertisements featuring young people as spokespersons. Several campaigns associated with positive outcomes used youth to deliver messages about substance use (Backer & Marston, 1993; Clarke, 1998; Earle, 2000; Palmgreen et al., 2002; Sly & Heald, 1999a). Youth spokespersons may effectively denormalize gambling behavior. Personal stories also appear to have a great deal of impact when they involve family members' or loved ones' suffering due to addiction (Biener, 2002; Les Etudes de Marche Createc, 1998).

Messages should be developed to target specific groups based upon a number of variables. Age appears to be an important consideration (Gilpin et al., 2001; Siegel & Biener, 2000; Sly & Heald, 1999a). An effective youth gambling media campaign should disseminate messages targeting different age groups. For example, a prevention campaign should include interventions specifically targeting younger individuals aiming to delay age of onset, an important predictor and determinant of later problem gambling (Gupta & Derevensky, 1998; Hardoon & Derevensky, 2002). Peracchio and Luna (1998) suggest that tobacco prevention campaigns should be directed to children younger than 12 years of age, before they have made any concrete decisions about smoking. Media campaigns may serve to "immunize" youth against problem gambling through education about risks and alternatives.

Gender and culture also are important variables to consider for a youth gambling prevention media campaign. With respect to culture, certain ethnic groups may be at greater risk for the development of gambling problems (Wardman, el-Guebaly, & Hodgins, 2001). These groups must be identified and targeted through media intervention campaigns. Gender also appears to be an important variable (Biener, 2002; Farrelly, Davis, et al., 2002; Sly, Hopkins, Trapido, & Ray, 2001). Given the high incidence of pathological gambling among males both young and old (Hardoon & Derevensky, 2002), gender appears to be an important consideration. Further research is needed to determine gender-based habits and preferences with respect to gambling activities.

A youth gambling prevention campaign should also target an individual's specific level of engagement in gambling activities. Just as level of engagement in a target activity (drinking alcohol, taking drugs, or smoking) influences receptivity to certain messages, some gambling prevention messages should target individuals who have little experience gambling, while others should target individuals who are already regularly engaging in gambling activities. Still other messages should be developed for youth at risk for developing pathological gambling behavior, such as sensation-seeking individuals (Palmgreen et al., 2002).

Television appears to be an effective medium for message dissemination (Farrelly, Davis, et al., 2002; ONDCP, 2002; Siegel & Biener, 2000; Sly & Heald, 1999b). Due to a paucity of data regarding campaign dissemination, however, conclusions must be drawn with caution. Following DeJong (2002), it is recommended that a mix of media channels be selected to provide a consistent message. Ongoing evaluation will be critical in order to determine the effectiveness of each medium.

Conclusion

The media remains largely unexploited an important tool for youth gambling prevention. Messages informing youth about the potential risks of gambling as well as denormalization messages communicating normative aspects of gambling behavior are both promising avenues for gambling prevention. The development of a youth gambling prevention campaign, however, must be informed by further research in order to verify the validity of the messages used for other health-compromising behaviors and to assess the utility of employing messages emphasizing norms and risks within the context of gambling behavior. Research is needed to identify salient themes and messages associated with gambling as well as to delineate media routines and preferences amongst youth of different ages, genders, cultures, and levels of engagement in gambling activities. Moreover, any antigambling

advertisements that are developed must be field tested to evaluate the potential impact of these messages. Baseline measures need to be established prior to program implementation, followed by extensive postcampaign evaluations conducted to assess program effectiveness vis-à-vis attitudes, knowledge, and behavior, as well as reach and exposure, conforming to NREP standards.

A youth gambling prevention media campaign has the potential to effect positive change in a large number of young people. This review has examined the current body of knowledge with the goal of highlighting salient characteristics of successful media campaigns designed to impact risky behaviors among youth. Given the prevalence of youth gambling in North America and its implications for public health, an intervention of this kind is appropriate and timely. With the proper research and focus group testing, a campaign targeting youth gambling could be an effective means to ultimately reduce youth problem gambling.

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