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Authors Note

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Communicating About Alcohol: Educational and Regulatory Policies

Alcohol and Public Policy Group

Introduction

As indicated in the source document for this article (Babor et al., 2003), alcohol policy is broadly defined as any purposeful effort or authoritative decision on the part of governments or non-government groups to minimize or prevent alcohol-related consequences. Policies may involve the implementation of a specific strategy with regard to alcohol problems (e.g., regulatory bans on alcohol advertising), or the allocation of resources that reflect priorities with regard to prevention efforts (e.g., school-based prevention programs). The focus of this article is on policy-relevant communication approaches intended to reduce alcohol-related harm. Our review considers research conducted not only to evaluate the effects of specific alcohol policies, but also studies of prevention strategies (e.g., alcohol education in schools) that have been evaluated prior to being implemented as formal alcohol policies.

Communications can influence drinking behaviour in several important ways. First, communications are the primary way to provide information about the harmful effects of drinking. To the extent that health education communications influence knowledge, attitudes, beliefs, and social norms, they may reduce harmful drinking and alcohol-related problems. Communications can also influence drinking behaviour in a negative way. Alcohol advertising and other forms of marketing portray drinking as pleasurable, rewarding, healthful and exciting, and these messages may contribute to problem drinking, especially among young adults.

In this article we describe two ways in which communications about alcohol have been used in the service of alcohol policy. The first is education and persuasion strategies, which are among the most popular approaches to the prevention of alcohol-related problems. These strategies are examined in several contexts and settings, including schools, colleges, and communities. The second way in which communications about alcohol have been used is in the form of regulatory policies to protect vulnerable populations from efforts by the alcohol industry to promote their products through television, radio and print advertisements, point of sale promotions, and the internet. In this case regulations are used to limit the exposure of certain audiences or control the content of marketing communications, or they are used to provide counter-advertising

Drawing on an extensive literature involving both original research and integrative literature reviews, the research summarized in this article describes the current status of alcohol policies related to communications designed to discourage excessive drinking or limit messages that may promote drinking. First, the world literature in each area was reviewed and critically appraised by the authors. Special attention was given to research developments during the last decade, Next, a series of meetings were held to review and critique the contents, findings, and conclusions of the reviews. Finally, the authors rated all policy-relevant strategies on a set of evaluation criteria to summarize their effectiveness, scientific support and cost.

Educational and Persuasive Approaches

Education and persuasion strategies are among the most popular approaches to the prevention of alcohol-related problems. They are generally designed to change knowledge about alcohol and risks related to drinking, reduce or prevent the onset of drinking, and lower the frequency or seriousness of problems related to drinking. In some cases, education and persuasion strategies are designed to increase public support for alcohol policies. In this section, we review school-based education programs, communications directed at college students, as well as media campaigns, warning labels on packaging, and the promotion of low risk drinking guidelines.

School-based programs

Alcohol education is a primary prevention strategy generally implemented in school settings. The aim is to teach students about the dangers of alcohol and ultimately prevent underage drinking. Most school-based alcohol education programs seek to change the adolescent's beliefs, attitudes, and drinking behaviours, and to modify general social skills and self-esteem, which are assumed to underlie adolescent drinking (Paglia and Room 1999). School-based interventions developed during the 1970's and 1980's relied mainly on informational approaches designed to teach students about the effects and the dangers of alcohol and drug use. Such programs have not been found to be effective (Botvin et al. 1995; Hansen 1994; Tobler 1992). Although they can increase knowledge and change attitudes toward alcohol, tobacco, and drug use, the findings of numerous evaluation studies indicate that actual substance use remains largely unaffected. In addition, some evidence suggests that providing information about the dangers of different psychoactive substances may, in some cases, actually increase use (Hansen 1980, 1982) by arousing curiosity in those who are risk takers (Norman et al. 1997). Approaches that address values clarification, self-esteem, and general social skills, as well as "alternatives" approaches that provide activities inconsistent with alcohol use (e.g., sports) have been found to be equally ineffective (Moskowitz 1989). Findings from evaluations of the most common school-based prevention programs are summarized in Table 1.

Partly in response to the ineffectiveness of informational, affective, and alternatives approaches, social-influence programs were developed from contemporary social psychological theory. These programs were based on the assumption that most adolescents are negatively predisposed toward alcohol and drug use, but rarely have to justify their unfavourable attitudes toward these behaviours. As a result, when challenged, their beliefs could be easily undermined. These new programs attempted to 'inoculate' young people against such challenges to their beliefs by

addressing resistance to social pressures to use drugs and by focusing on short-term and immediate social consequences (Evans et al. 1978). Early evaluations of these programs seemed promising, at least for tobacco, and they form the basis for many current school-based alcohol prevention efforts. More recently, it has been recognized that adolescent alcohol use results not so much from direct pressures to drink, but from more subtle social influences (Hansen 1993). It has even been suggested that resistance skills training may be counter-productive because it leads young people to conclude that drinking is prevalent among, and approved by, their peers (Donaldson et al. 1997; Hansen and Graham 1991). As a result, there has been a shift toward providing normative education that corrects adolescents' tendency to overestimate the number of their peers who drink and approve of drinking (Hansen 1992, 1993, 1994). Many contemporary school-based programs include both resistance skills training and normative education. Normative education programs have two goals: 1) to correct the tendency for students to overestimate the amount of drinking in their peer group and 2) to change the acceptable level of peer drinking. Within these programs, teachers provide information from survey data showing actual prevalence rates, and guide class discussions about appropriate and inappropriate alcohol use.

Scientific evaluations of school-based resistance and normative education interventions have produced mixed results with regard to alcohol. On the one hand, some researchers believe these interventions are effective in reducing drinking and alcohol-related problems (e.g., Hansen and Graham, 1991; Dielman 1995; Botvin and Botvin 1992; Hansen 1993, 1994). On the other hand, others are critical of the research evidence for their effectiveness (e.g., Brown and Kreft 1998; Foxcroft et al. 1997; Gorman 1996, 1998; Paglia and Room 1999).

School-based educational interventions, even when using the most recent normative education and resistance-skill training program innovations, generally produce modest effects that are short-lived unless accompanied by ongoing booster sessions. Although some evaluations have measured heavy drinking and self-reported problems, very few have demonstrated substantive effects on problem rates of intoxication, drinking-driving, injury, and alcohol-related crashes. In most cases, such outcomes are not even reported. There is some evidence that certain subgroups may be more affected by school-based interventions. For example, youth with previously unsupervised drinking experience may be more responsive to resistance skills training (Dielman 1995; Shope et al. 1994), while those who are more rebellious may be less responsive to normative education (Kreft 1997).

Some programs include both individual-level education and family- or community-level interventions (Perry et al. 1993, 1996, 1998; Williams et al. 1995; Komro et al. 1996; Toomey et al. 1996; MacKinnon et al. 1991; Pentz et al. 1989; Johnson et al. 1990). Evaluations suggest that even comprehensive school-based prevention programs may not be sufficient to delay the initiation of drinking, or to sustain a small reduction in drinking beyond the operation of the program. Reduced drinking was found when coupled with community interventions, especially those that were successful in reducing alcohol sales and provision of alcohol to youth (Hingson et al. 1996; Holder et al. 2000; Wagenaar et al. 2000). These initiatives primarily involve a combination of policy or regulatory changes, enforcement, and community organizing. While educational and persuasion techniques may be part of these prevention packages, it is possible that policy regulation and enforcement account for most of the observed effects.

College and University Programs

Interventions directed at alcohol use in college and university settings have been developed in response to concerns about the extent of heavy drinking, its relation to sexual assaults, and its impact on school performance, drinking-driving, and other alcohol-related problems such as disorderly conduct. Both abstinence and harm-reduction goals are reflected in college intervention programs. Recent prevention efforts in the US have been oriented to local and state authorities, university administrators, heavy drinkers, their peers, and alcohol retailers and producers (DeJong and Langford 2002; Larimer and Cronce 2002; Perkins 2002). Typically, a combination of strategies are used, including persuasive measures, staff training, guidelines and regulations, voluntary arrangements pertaining to alcohol marketing, restrictions on location of outlets, and campus alcohol policies. Interventions rely primarily on educational, informational and social marketing strategies. The social marketing approach uses research to plan communications and is intended to change the environment as well as individual behaviour. Normative education, which challenges misperceptions of college drinking norms, is the organizing principle in several interventions (Robinson et al., 1993) Cameron et al., 1993; Turner, 1997). Although research has not been extensive, the findings give some evidence of the increased awareness of risks of heavy drinking and alcohol problems among college students exposed to these interventions. Alternatively, there is no convincing scientific support for the effectiveness of campus-wide educational programs or awareness campaigns in reducing heavy drinking or alcohol-related problems (Larimer and Cronce 2002).

Mass Media, Counter-Advertising, Warning Labels, and Low-risk drinking guidelines

Public service announcements (PSAs) are messages generally prepared by nongovernmental organizations, health agencies, and media organizations for the purpose of providing important information for the benefit of a particular audience. In contrast to paid advertising, PSAs depend upon donated time or space for distribution to the public. When applied to alcohol, PSAs usually deal with responsible drinking, the hazards of drinking-driving, and related topics. Public service announcements are generally communicated on television or radio, paid counter-advertisements, billboards, magazine and newspaper pieces, and news or feature stories on television and radio. A Canadian study (Casiro et al. 1994) found that after a TV campaign was broadcast on the dangers of alcohol consumption during pregnancy, more women concluded that drinking would put their baby at risk, and attributed this information to 'television'. Nevertheless, mass media campaigns directed at the entire population tend to have a limited impact on alcohol use and alcohol-related problems (Gorman, 1995).

In response to the extensive promotion of alcoholic beverages in many countries, governments and private organizations have sponsored counter-advertising. Counter-advertising involves disseminating information about a product, its effects, and the industry that promotes it, in order to decrease its appeal and use. Tactics include health-warning labels on product packaging and media literacy efforts to raise public awareness of the advertising tactics of an industry, as well as prevention messages in magazines and on television (see Barlow and Wogalter 1993). Counter-advertising may also be included in community or school prevention programs (e.g., Giesbrecht et al. 1990; Greenfield and Zimmerman 1993), and be used as part of government liquor board retail systems (Goodstadt and Flynn 1993). Some small positive effects have been

observed in media literacy programs with children (Austin and Johnson 1997; Slater et al., 1996) and college students (Canzer, 1996). Given the relatively low frequency of broadcast counter-advertising, and typical placement of such messages at either unattractive times or in connection with unpopular programming, it is surprising that any impacts have been found (Saffer 1996).

While there is nothing in the research to suggest that counter-advertising offers powerful outcomes within realistically available budgets, the recent US tobacco experience suggests that a hard-hitting counter-advertising program can be effective as part of a comprehensive prevention strategy (Sly et al. 2001; Rohrbach et al. 2002).

A fairly extensive amount of research has been conducted on US-mandated alcoholic beverage container warning labels, which were introduced in 1989 (Kaskutas 1995). Emphasis has been placed on the potential for birth defects when alcohol is consumed during pregnancy, the danger of alcohol impairment when driving or operating machinery, and general health risks. Some states require posted warnings of alcohol risks in establishments that serve or sell alcohol. A significant proportion of the population has reported seeing these warning labels (Graves 1993; Greenfield et al. 1993; Kaskutas and Greenfield 1992). There is some survey evidence (Kaskutas and Greenfield 1992; Greenfield 1997; Greenfield and Kaskutas 1998; Greenfield et al. 1999) that warning labels may increase knowledge regarding the risks of drinking-driving and drinking during pregnancy among some sub-groups (e.g., light drinkers). A series of national surveys found that awareness, as indicated by conversations about risks, was greater among the more frequent drinkers, including young adults (Kaskutas and Greenfield 1997; Greenfield and Kaskutas 1998). No direct impacts of warning labels on consumption or alcohol-related problems have been reported, however.

In summary, the warning label research does not demonstrate that exposure produces a change in drinking behaviour per se. Andrews (1995) concludes that warning labels are not significantly effective in preventing alcohol consumption by heavy drinkers. Other reviews (Grube and Nygaard 2001; Agostinali and Grube 2002) conclude that there is little evidence that alcohol warning labels have measurable effects on drinking behaviours. However, there is evidence that some intervening variables are affected, such as intention to change drinking patterns (in relation to situations of heightened risk such as drinking-driving), having conversations about drinking, and willingness to intervene with others who are seen as hazardous drinkers.

Epidemiological research on the effects of moderate drinking on cardiovascular problems (e.g., Marmot 2001) has created political pressures in some countries to provide the public with promotional and educational material about the benefits of moderate alcohol use. Surveys in several countries have noted an increase in the number of adults who are aware of these putative health benefits. For example, in New South Wales, Australia, the proportion identifying health benefits increased from 28% in 1990 to 46% in 1994, with relaxation (54%) and cardiovascular benefits (39%) most often mentioned (Hall 1995). In this context, official or semi-official guidelines have been adopted in a number of countries on 'moderate' drinking or 'low-risk drinking' (Bondy et al. 1999). Given the complex considerations that underlie any such guidelines, it is not surprising that the guidelines vary considerably from one country to another (Stockwell 2001). There is at present little research on the impact of these messages (Walsh et al.

1998). Furthermore, it is unclear whether such messages should be expected to lead to decreases or increases in alcohol consumption and related problems (Casswell 1993).

Regulating alcohol promotion

The marketing of alcohol is now a global industry, in which the largest corporations have an international reach across industrialised countries and into new markets in developing nations (Jernigan 1997; Parry 1998; Riley and Marshal 1999; Walsh 1997; WHO 1999). A central question is whether this varied, dynamic, and widespread promotional activity is likely to have adverse consequences for public health. And a major question facing policy makers is whether the promotion of alcohol should be regulated in the public interest or left to industry self-regulation. A considerable body of research has now been accumulated to inform the answers to these questions. Research has been conducted both at the level of populations, using econometric methods, and at the level of individuals, using surveys and experimental manipulations.

Among more recent econometric studies, analyses of annual advertising expenditure and aggregate all-beverage consumption in France, Germany, the Netherlands, the UK, and Sweden over the 1970s and 1980s found that, in each of these countries, advertising did nothing to counter the more general trend toward reduced consumption (Calfée and Scherega 1994). A study using US annual data for 1964-1990 found no impact of advertising expenditure on per capita alcohol consumption and little impact by beverage for beer and spirits. However, wine advertising increased consumption, with some displacement between wine and spirits from increased advertising for each of these (Nelson and Moran 1995). An analysis of US data for 16 spirits brands between 1976 and 1989 concluded that expenditure on advertising increased demand for the brand advertised with insignificant secondary benefits for rival brands (Gius 1995). A UK study, testing six econometric models, used quarterly 1963-1992 expenditures on television, radio, and print advertising. Small or statistically non-significant positive impacts on sales of wine and spirits, and negative results for beer, were found (Duffy 1995).

Saffer (1995, 1996, 1997, 1998) has challenged the methodology used in most econometric studies on a number of counts. Most studies have used annual data on advertising expenditure. Saffer argued that using local level data measured at points through the year would better reflect the 'pulsing' and seasonal variation used by advertisers to overcome audience saturation effects. Many of the studies were conducted within jurisdictions with a mature alcohol market and heavy advertising, and were therefore unlikely to find an effect of advertising, as the marginal benefit of additional spending was close to zero. Expenditure on advertising as a proxy for marketing effects is also problematic, as these 'above the line' costs represent only a fraction of the total marketing effort (Stewart and Rice 1995).

Effects on individuals of exposure to alcohol advertising

Both econometric and experimental studies hypothesise an immediate impact of advertising on drinking. However, the cumulative effect of exposure to thousands of advertisements might be to reinforce positive attitudes towards alcohol and drinking practices. Such a continuous flow of messages, images and values, for which television is a prime source, constitutes a system of

‘cultural cultivation’ that influences both mainstream attitudes and responses to advertising by different social groups (Gerbner et al. 1986). The impact of advertising can therefore be measured in terms of cognitive responses in processing advertising messages (Petty and Cacioppo 1981), and the links between these responses and drinking behaviour.

Experimental studies measuring consumption after exposure to alcohol advertisements show mixed results. In the US, fifth- and eighth-grade children (aged 10 and 13 years) showed no increase in expectations of drinking after viewing television beer advertisements (Lipsitz et al. 1993). However, teenage students rated alcohol as more beneficial and less risky after repeated exposure to magazine alcohol advertisements (Snyder and Blood 1992). After viewing televised beer advertisements, college students had increased confidence in positive assessments of the benefits of beer. These positive beliefs were linked to plans about future alcohol use (Slater and Domenech 1995; Slater et al. 1995).

The effect of repeated exposure to alcohol advertising in real life is measured by the many surveys that compare participants with higher than average awareness or more positive responses to alcohol advertisements with participants with lower awareness or less positive responses. Cross-sectional analyses of such survey data have linked self-reported awareness or positive responses to advertising to positive beliefs about alcohol and higher consumption. The US research that first took this approach showed that both exposure to alcohol advertising and the attention paid to it (awareness) increased through the teenage years. Those who reported seeing the most advertisements tended to perceive the typical drinker as more fun-loving, happy, and good-looking, and in turn this was associated with more favourable attitudes regarding amounts, situations and benefits of drinking. The cumulative effect of the advertisements was to shape young people’s perceptions, encouraging pro-drinking attitudes and greater consumption (Atkin and Block 1981, 1984).

A number of other studies have explored relationships with alcohol consumption and also expectations about future drinking. Interviews with 433 Glasgow children aged 10-17 found that they were very aware of alcohol advertising, which became increasingly salient and attractive between the ages of 10 and 14. Underage drinkers were more adept than non-drinkers at recognising and identifying brand imagery in television advertisements (Aitken et al. 1988). A survey of Californian children aged 10-12 found that awareness of alcohol advertisements was linked with increased knowledge of beer brands and slogans and led to more positive beliefs about drinking and a higher expectation of drinking as an adult. The beliefs most linked to future expectations were that beer drinking was a good way to relax, to get to know people, and to unwind with friends (32%); and that drinking beer was cool and ‘manly’. One third of the respondents believed alcohol was not a substantial health risk (Grube 1995; Wallack et al. 1990).

Alcohol advertising also shapes perceptions about how much other people drink. In Atkin and Block’s (1981) study of 12- to 22-year-olds, participants who saw the most advertisements tended to perceive drinking as pervasive in society. Their estimations of the amount consumed by a typical drinker were two drinks a week higher than the estimations of participants with less exposure (Atkin and Block 1981). In a New Zealand survey of 500 boys and girls aged 10-17, those with the best recall of alcohol advertisements were more likely to say their friends would think it acceptable for young people of their age and gender to ‘drink alcohol at least once a

week', and to 'get drunk at least once every few weeks'. The more advertisements they recalled seeing, the more frequently they thought their friends drank. Perceived frequency of drinking by friends was strongly and consistently associated with the respondent's own drinking, although this perceived frequency was much higher than actual drinking among participants (Wyllie 1997; Wyllie and Zhang 1994; Wyllie et al. 1998). Through this cognitive process, exposure to alcohol advertising may normalise heavier drinking.

Liking an advertisement may be a more important indicator of drinking behaviour than advertising recall. Those 14- to 17-year-old boys who liked the advertisements (as distinct from having high recall) were more likely to be drinkers and to drink larger quantities. This was partly because liking the ads was linked with feelings that 'drinking makes life more fun and exciting' and 'people get on better together when they've had a few drinks'. Boys and girls who liked the advertisements more than other participants were more likely to say that they would drink at least weekly at age 20, the legal age of purchase at the time of study. Half of the 10- to 13-year-old boys said that they knew more about drinking from watching alcohol advertisements, and this was the age group most likely to think the advertisements were realistic (Wyllie and Zhang 1994; Wyllie et al. 1998). A longitudinal study of New Zealand young people also demonstrated an impact of both exposure to and liking for advertisements (Connolly et al. 1994; Casswell and Zhang 1998). Those who at age 18 gave more positive responses to alcohol advertising were heavier drinkers and reported more alcohol-related aggression at age 21.

Effects of alcohol advertisement content

Researchers have also investigated how alcohol advertising content, as distinct from repeated exposure, works to influence young people. Atkin and Block (1981) identified two major appeals relevant to alcohol attitudes: social interaction and psychological escape.

Social camaraderie and peer acceptance are important to young people. In New Zealand television advertisements during the 1990s, the key images for spirits were escapist, such as island parties or swirling psychedelic imagery. The preferred drink of young males was beer, and beer advertisements focused strongly on masculinity themes: friendship between males, male sports, and national pride (Hill 1999; Thomson et al. 1994; Wyllie et al. 1997). In interviews with heavy-drinking young adults and with 12- to 13- and 15- to 16-year-olds, all groups identified similar appeals: fun and good times, 'macho' imagery, and associations between group acceptance and drinking (Wyllie et al. 1997). Content analyses of US beer advertising identified a similar focus on masculinity myths, promoting not just beer but 'a particular view of what it means to be a man' (Buchanan and Lev 1989; Postman et al. 1988). This use of alcohol as a symbol of masculinity was explicit in a recent New Zealand beer campaign: 'Lion Red - What it means to be a man' (Hill 1999). Extreme stereotypes of masculinity are presented through humour, allowing the drinker some psychological distance (Abrahamson 1998) while he or she responds to the brand and purchases the product.

The advertisements most likely to appeal to teenagers are stylish and colourful with lively action, music, and humour (Aitken et al. 1988). Brand characters, such as Budweiser frogs, and celebrity endorsements are particularly effective with the young (Atkin and Block 1983; Garretson and Bruton 1998). Research shows that advertisements do not need to show heavy drinking and

intoxication for this to be assumed by young viewers to be occurring, even in situations of risk (Atkin et al. 1983; Wyllie et al. 1997). Harmful consequences of drinking are not shown, supporting an inference that drinking is non-problematic.

Image advertising meets an especially positive response from younger teenagers (Covell 1992; Covell et al. 1994; Kelly and Edwards 1998). Attractive young adults are shown enjoying the lifestyles to which teenagers aspire (Atkin and Block 1981; Hill and Casswell 2001). Effective advertising increasingly operates at the symbolic, intuitive level of consciousness, and alcohol advertisements can use a minimum of information to evoke cultural meanings in the minds of viewers. Embedded life themes of the target market enable young drinkers to relate masculinity myths and fantasy advertising to personal daily experiences (Parker 1998; Strate 1991; Treise et al. 1999).

Sponsorship

By the early 1990s, more than half of all advertising expenditure was on other forms of promotion, such as sponsorship of sports events and teams (Stewart and Rice 1995). These are particularly important where broadcast alcohol advertising is banned or partially banned, but their use increased greatly over the 1990s in the US (Cornwell and Maignan 1998) and other countries, as marketing delivered through integrated packages of promotions. Among these promotion packages is marketing that associates alcohol with sporting activities that attract young males, the group most likely to be heavier drinkers.

The effectiveness of linking alcohol, masculinity, and sports was demonstrated in a US study in which male teenagers consistently preferred televised beer advertisements with sports content, and a correlation was found between liking these advertisements, levels of drinking, and future drinking intentions (Slater et al. 1997, 1996). In US sampling in 1990-1992, alcohol ads appeared in major professional sports coverage twice as often as in college sports coverage and eight times as often as in fictional programming (Grube 1995; Madden and Grube 1994). Televised alcohol sponsorship has an effect similar to actual advertising. A sample of boys aged between 9 and 14 years responded positively to sports sponsorship carrying an alcohol company logo; 81% said their friends would take notice of this form of marketing, and 36% said beer or alcohol was being advertised, rather than the team or company (Wyllie et al. 1989).

Alcohol sports sponsorship provides promotional opportunities that go beyond passive absorption of images to embed the product in the everyday activities of consumers and potential consumers, tapping into social processes that establish and reinforce cultural identity (Buchanan and Lev 1989). Alcohol 'impressions' are made on many people well below the drinking age, helping form in adolescence the attitudes and preferences of later life (Kelder et al. 1994).

The association between beer and sports in English-speaking countries is longstanding, but from the 1970s was reinforced by marketing strategies borrowed from the tobacco industry (Collins and Vamplew 2002; Buchanan and Lev 1989; Vaidya et al. 1996). Alcohol sponsorship deals for sports events, teams, and clubs routinely involve event-naming rights and mentions in sports commentaries, signage on clothing, sports grounds, and products retailed to fans, and opportunities for direct marketing through product donations and the right to be the only brand

available on site (Rekve forthcoming). Market-driven sponsorship has replaced philanthropic sponsorship, with costs set off against company taxation (Cornwell and Maignan 1998). As well as mass audiences for football and motor sports, more diverse consumer identities are targeted through athletics, ice hockey, basketball, skiing, snowboarding, and also rock music and cultural events. Events, activities, and venues are used by alcohol marketers to target particular demographic or psychographic segments of the market. Global communications now take sports and associated alcohol logos into the homes of millions of potential customers. International sports coverage enables alcohol advertising to reach across and infringe national laws in Scandinavia and France (Rekve 1997).

Less attention has, as yet, been paid to sponsorship of music and cultural events but these are also common strategies employed by alcohol companies. Klein (2000) cites the case of the Canadian beer, Molson, which through the 1990s had its name promoted almost every time a rock or pop star got on a stage in Canada. It then went a step further, pioneering the concept of concerts staged by Molson in which the name of the band was not released until the concert happened, in this way ensuring that the brand was bigger than the stars.

Internet marketing

The Internet has provided an opportunity for global marketing with particular relevance to the young (Center for Media Education 1997, 1999). A 1998 analysis of beer-, wine-, and spirits-marketing on the internet looked for website features that suggested targeting of the young. These features included the use of cartoons, personalities, language, music, or branded merchandise popular in youth culture, and whether the site offered interactive games, online magazines geared to youth, chat rooms, or sponsorship of music or sports events. The majority of beer (82%) and spirits (72%) sites had at least one of these features and most had about three. Wine sites were less targeted at the young (Center for Media Education 1997). An analysis of the content of several alcohol sites in terms of the Australian voluntary code of advertising content found that the internet provided an opportunity for alcohol-marketing targeted at underage consumers and that some web pages were in breach of the code (Carroll and Donovan 2002). The visual and interactive nature of the internet puts unprecedented power in the hands of alcohol marketers, especially in reaching and influencing the young (Montgomery 1997).

Industry self-regulation of alcohol advertising standards

Industry self-regulation codes have been developed to set standards of "responsible advertising" that are designed to protect young adults and other vulnerable population groups from the possible adverse influence of alcohol advertising. Research on other industries has shown the limitations of self-regulation at both firm and industry levels. The greater the number of players and activities involved, the less likely it is that voluntary codes will be sufficient to restrain unacceptable practices (Ayres and Braithwaite 1992). Self-regulation is most commonly adopted by industries under threat of government regulation but, being against self-interest, tends towards under-regulation and under-enforcement (Baggott 1989). A review of media self-regulation in the US concluded that, although sometimes a useful supplement to government regulation, it rarely lived up to its claims (Campbell 1999).

Experiences in different countries show that these codes may work best where the media, advertising, and alcohol industries are all involved, and an independent body has powers to approve or veto advertisements, rule on complaints, and impose sanctions. Few countries currently have all these components. That the effectiveness of codes in developed countries is often undercut by their vagueness, while in developing countries and the transitional markets of Eastern Europe codes are unlikely to be well-enforced. The voluntary nature of codes also makes them inherently susceptible to collapse, as demonstrated in Australia in the early 1990s and with voluntary bans on spirits-advertising in the US and UK in 1996 (Campbell 1999; Hill and Casswell 2001; Saunders and Yap 1991).

A possible consequence of industry self-regulation through voluntary codes is that attention is diverted from policy questions about whether it serves the public interest to allow promotion of products that have a considerable adverse impact on public health. Instead, energy is focused on refinement of the codes, and reaction to unacceptable practices. Moreover, codes are largely irrelevant to the way most alcohol advertising actually works. Much alcohol advertising and sports marketing does not show the product or drinking at all, but rather a simple logo. A successful mix of marketing promotions means that the media advertising to which the codes are applied can be restricted to association of the brand with images, lifestyles, and events that are attractive and relevant to target audiences, particularly the young.

Legislation against alcohol advertising on broadcast media

Internationally, legislation restricting alcohol advertising is a well-established, if contested, reality. Some current bans are partial, applying only to spirits, to certain hours of television viewing, or to state-owned media. These bans often operate alongside codes of self-regulation that govern permitted forms of alcohol advertising. In Europe, the overall policy trend by the mid-1990s was towards tighter control over alcohol advertising, through regulation or self-regulation. The mix of regulation and self-regulation in industrialised countries often reflects unsuccessful efforts to secure more restrictive legislation, and systems remain in flux as decisions continue to be contested. One example is the Netherlands. A bill to ban all alcohol advertising was defeated in 1997, but by 2000 the Ministry of Health was threatening to revoke self-regulation because of the industry's unsatisfactory performance (NIGZ 2000; Sheldon 2000).

Many US states have regulated against alcohol advertising or against certain content in advertisements. For some time, the US spirits and broadcasting industries maintained voluntary bans on spirits advertising that date back to the repeal of prohibition. However, one major brand broke ranks in 1996, and the spirits industry retracted its ban, partly due to spirits' falling share of US alcohol sales. Public outcry has kept spirits advertising off the television networks, but there is now much spirits advertising on cable television. Efforts to pass federal legislation founded on freedom of speech protections under the US Constitution. Community efforts to ban alcohol billboards through city ordinances also encountered this Constitutional block, which undermines any credible threat of regulation. Although legal debate continues on the extent to which commercial speech is protected, US advocacy efforts now focus on the need to protect children and young people under the legal age of purchase.

Arguments about the protection of commercial speech are considerably less relevant in systems based on parliamentary sovereignty, where legislation restricting alcohol advertising is common. The most comprehensive legislation to date has been in France and Norway. This legislation addressed both alcohol advertising and sports sponsorship. In 1991, television alcohol advertising and most sports sponsorship was banned, and the content of all alcohol advertisements was severely restricted through the Loi Evin. Since the ban, however, these national policies have been undermined by cross-border transmissions of sports coverage and circumvented by some of the major advertisers. Within the European Union (EU), national legislation must now comply with EU directives. In February 2001 at a conference on Young People and Alcohol in Stockholm, European Ministers called for national-level measures to minimise the pressures on young people to drink, including the pressures of alcohol advertising and sponsorship.

There have been some attempts to evaluate the effectiveness of such legislative responses. Saffer (1991) evaluated the effectiveness of bans on broadcast alcohol advertising by comparing countries with different policy regimes. Using a time-series of 1970-1983 data, he compared 17 countries with full bans, partial bans, or no bans on alcohol advertising in terms of consumption levels and motor vehicle fatalities. Countries with a ban on spirits advertising had 16% lower alcohol consumption levels and 10% fewer motor vehicle fatalities than countries with no such ban. Countries with bans on beer, wine, and spirits advertising had 11% lower alcohol consumption levels and 23% fewer motor vehicle fatalities than countries with spirit-advertising bans alone (Saffer 1991). Nelson and Young (2001) evaluated the effectiveness of bans using a similar database but a different time period (1977-1995). They found no effect of advertising bans on alcohol consumption or measures of related harm. A number of other studies on single jurisdictions, as well as studies of short term or partial bans, also indicated no effect of advertising bans on alcohol consumption (Makowsky and Whitehead 1991; Ogborne and Smart 1980; Schweitzer et al. 1983; Smart and Cutler 1976).

Another study by Saffer (1997) compared regions in the US in order to explore associations between advertising expenditure and alcohol-related harm. Regression analysis of 1986-1989 quarterly data, controlling for numerous variables, indicated that local alcohol advertising was a significant factor in motor vehicle fatalities, although it had a smaller effect than alcohol pricing. Saffer concluded that if the US ban at that time on broadcast spirits advertising had been extended to beer and wine advertising, road fatalities could have been reduced by 2 000 - 3 000 lives per year. To be effective, bans should be sufficiently inclusive to reduce opportunities for substitution, although displacement and increased saturation effects in other advertising media would reduce the effectiveness of these bans (Saffer 1997, 1998).

Summary and Implications

Table 2 provides a summary of the review conducted by the Alcohol and Public Policy Group (Babor et al., 2003) in their integrative literature reviews of education and persuasion strategies as well as regulatory approaches to alcohol promotion. The table provides qualitative ratings for each of the educational and regulatory interventions reviewed in this paper. The ratings reflect the consensus views of the authors and are designed to serve as a guide to policy consumers who would like to evaluate the strengths and weaknesses of different policy options. The table is

organised according to four major criteria: 1) evidence of effectiveness; 2) strength of research support; 3) extent of testing across diverse countries and cultures; and 4) relative cost of the intervention in terms of time, resources, and money. The first three criteria are rated on a four point scale ranging from 0 to three plusses. Other policy-relevant considerations that are evaluated in the Comments section of the table include enforcement issues, specificity of effects and feasibility. Feasibility can be assessed in terms of political considerations (leadership, opposition from industry, public support), economic implications (cost effectiveness and cost-benefit analysis), and the presence or absence of adverse side effects.

As indicated in our literature review, the expected impact is low for education and for public service messages about drinking. In addition, education strategies have been coded at a relatively high cost to reflect the expense of training and implementation for a full education program. From the viewpoint of a state or local government, the costs may be lower than this, because the teaching costs are charged locally, or because the education program is viewed as a low-cost add-on to existing commitments. But in terms of impact or value-for-money, the cost hardly matters: education strategies have shown little or no effect, regardless of the investment. Although the population reach of educational programs is thought to be excellent (because of the availability of captive audiences in schools), the population impact of these programs is poor. Similarly, while feasibility is good, cost-effectiveness and cost-benefit are poor.

In summary, the number of informational and educational programs has grown exponentially (see Foxcroft et al. 1997). Many of these educational campaigns have not been evaluated. Where evaluations have been conducted, they often do not meet the criteria of ‘methodological soundness’ (Foxcroft et al. 1997; White and Pitts 1998). The range of programs evaluated has been relatively narrow, and the results do not provide an adequate basis for recommending expansion of efforts or elaboration of strategies. The impact of these programs tends to be small at best and most effects do not persist (White and Pitts 1998). Compared to other interventions and strategies such as law enforcement initiatives, outlet zoning, tax and pricing policies, and responsible serving practices, educational programs are expensive and appear to have little effect on alcohol consumption levels and drinking-related problems. Their hegemony and popularity seems not to be a function of either their demonstrated impact or their potential for reducing alcohol-related harms.

It is likely that even with adequate resources, communication strategies that try to use education to prevent alcohol-related harm are unlikely to deliver large or sustained benefits. Education alone may be too weak a strategy to counteract other forces that pervade the environment. An unanswered question, beyond the scope of this article, is why significant resources continue to be devoted to initiatives with limited potential for reducing or preventing alcohol-related problems.

The second type of communication strategy summarized in Table 2 is regulating alcohol promotion. Advertising bans show some evidence of effectiveness, a moderate amount of research support as well as cross-cultural testing, and are not expensive to implement. Unfortunately, the evidence for advertising content controls, which are often subject to industry self-regulation controls, is too limited to draw any firm conclusions.

Nevertheless, there are two conclusions that can be made from the research reviewed for this paper. First, the research provides information about increasingly sophisticated marketing mixtures that aim to attract, influence, and recruit new generations of potential drinkers. Exposure to repeated high-level alcohol promotion inculcates pro-drinking attitudes and increases the likelihood of heavier drinking. Research has indicated the cumulative influence of alcohol advertising in shaping young people's perceptions of alcohol and drinking norms. Alcohol advertising predisposes minors to drinking well before legal age of purchase. Marketing strategies such as alcohol sports sponsorships embed images and messages about alcohol into young people's everyday lives.

Second, the range and sophistication of marketing influences are not adequately addressed by industry codes of self-regulation. Self-regulation has been shown to be fragile and largely ineffective. In addition, although many countries have restricted alcohol advertising to various degrees, the findings from evaluations of legislative responses are inconsistent. Despite the difficulties inherent in disentangling cause and effect, the evaluation findings suggest that the restrictions which were feasible in the 1980s and 1990s have not achieved a major reduction in drinking and related harms in the short-term. Instead, the climate created by sophisticated alcohol marketing has facilitated the recruitment of new cohorts of young people to the ranks of heavier drinkers, and has worked against health promotion messages.

In contrast to these educational strategies and the regulation of alcohol promotion, effectiveness was found to be strong for the regulation of physical availability and the use of alcohol taxes (see Babor et al., 2003). Given the broad reach of these strategies, and the relatively low expense of implementing them, the expected impact of these measures on public health is relatively high. Most drinking-driving countermeasures received high ratings on effectiveness as well. Not only is there good research support for these programs, they also seem to be applicable in most countries and are relatively inexpensive to implement and sustain. In our review (Babor et al., 2003), the following 10 policy options stand out as 'best practices': minimum legal purchase age, government monopoly of retail sales, restrictions on hours or days of sale, outlet density restrictions, alcohol taxes, sobriety check points, lowered BAC limits, administrative license suspension, graduated licensing for novice drivers, and brief interventions for hazardous drinkers. None of the strategies in the education or promotion categories achieved this level of favourable rating.

Nevertheless, there still may be grounds for using some of these strategies, based on the "precautionary principle." This is a general public health concept (Kriebel and Tickner 2001) that encourages policymakers to take preventive action even in the face of uncertainty; to shift the burden of proof to the proponents of a potentially harmful activity; to offer alternatives to harmful actions; and to increase public involvement in decision-making. When applied to alcohol policy, the precautionary principle implies that decision-making in areas like the marketing of new alcohol products (e.g., high alcohol content malt beverages) and the promotion of alcohol through advertising, should be guided by the likelihood of risk, rather than the potential for profit. The application of the precautionary principle to alcohol policy will help to increase both public participation in the policymaking process and the transparency of decision-making, currently guided too often by economic considerations of the few, rather than public health concerns of the many.

Alcohol policies rarely operate independently or in isolation from other measures. Despite the rather pessimistic findings for communication strategies, research on local prevention efforts suggests that alcohol problems are best considered in terms of the community systems that produce them. Local strategies have the greatest potential to be effective when prior scientific evidence is utilised and multiple policies are implemented in a systematic way. Thus, complementary system strategies that seek to restructure the total drinking environment are more likely to be effective than single strategies. This line of reasoning suggests that full-spectrum interventions are needed to achieve the greatest population impact.

In sum, opportunities for evidence-based alcohol policies that better serve the public good are more available than ever before, as a result of accumulating knowledge on which strategies work best. But the policies to address alcohol-related problems are too seldom informed by science, and there are still too many instances of policy vacuums filled by unevaluated or ineffective strategies and interventions.

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**Table 1. Evidence for Effectiveness of School-Based Prevention Programs
(Reprinted from Babor et al., 2003, Box 11.1.)**

Approach	
Information	Some evidence that strictly informational programs change attitudes and beliefs. No evidence that such programs reduce or prevent drinking by young people. Some evidence that these programs may be counter-productive and encourage drinking among some young people.
Affective Education	No evidence that these programs reduce or prevent drinking by young people.
Alternatives	No evidence that these programs reduce or prevent drinking by young people.
Resistance Skills	Behavioural changes may be small and short-lived without regular 'booster' sessions. Some conflicting evidence regarding effectiveness.
Normative Education	Studies report significant changes in perceived norms and small to moderate behavioural changes.

**Table 2. Ratings of policy-relevant strategies and interventions
(Adapted from Babor et al., 2003, Box 16.1.)**

Strategy or Intervention	Effectiveness	Breadth of Research Support	Cross-Cultural Testing	Cost to Implement	Comments
Education and persuasion					
Alcohol education in schools	O ^a	+++	++	High	May increase knowledge and change attitudes but has no sustained effect on drinking.
College student education	O	+	+	High	May increase knowledge and change attitudes but has no effect on drinking.
Public service messages	O	+++	++	Moderate	Refers to messages to the drinker about limiting drinking; messages to strengthen policy support untested.
Warning labels	O	+	+	Low	Raise awareness, but do not change behaviour.
Regulating alcohol promotion					
Advertising bans	+ ^b	++	++	Low	Strongly opposed by alcoholic beverage industry; can be circumvented by product placements on TV and in movies.
Advertising content controls	?	O	O	Moderate	Often subject to industry self-regulation agreements, which are rarely enforced or monitored.

NOTE: Effectiveness ratings: 0 = lack of effectiveness; + = evidence for limited effectiveness; ++ = evidence for moderate effectiveness; +++ = evidence of a high degree of effectiveness; ? = no studies or insufficient evidence. Breadth of research support: 0 = no studies have been undertaken; + = only one well designed study; ++ = 2-4 studies completed; +++ = five or more studies completed. Tested across cultures: 0 = strategy has not been tested adequately; + = strategy studied in only one country; ++ = strategy tested in 2-4 countries; +++ = strategy tested in five or more countries.

^aAmong the hundreds of studies, only two show significant lasting effects (after 3 years), and the significance of these is questionable when reanalyzed (Foxcroft et al. in press). A few more studies show shorter-term effects, and in this frame the rating could be +.

^bEconometric studies find effects of bans but direct studies of short-term impacts have generally found no effect on total alcohol consumption. Policy here might well be guided by the precautionary principle.