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Policies for the reduction of Alcohol-related Violence that affects Young People:

AN ENVIRONMENTAL APPROACH

Pan American Health Organization
Regional Office of the World Health Organization

Policies for the reduction of Alcohol-related Violence that affects Young People:

An Environmental Approach

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Preface

According to the *World Report on Violence and the Health* prepared by the World Health Organization (WHO) in 2002, Latin America is the most violent region in the world. The average homicide rate among young people between the ages of 15 and 29 is 101.7 per 100,000 men, and 11.5 per 100,000 women. Homicide, however, is the most extreme manifestation of violence. It is estimated that for each homicide there are 20 to 40 victims - adults and youth – that suffer injury requiring hospital care as a result of violence. Adolescents and young adults are disproportionately affected by all forms of violence, and whether their participation is as witnesses, victims, or perpetrators; their potential for healthy development is becoming increasingly limited.

Most countries in Latin America recognize that the violence that affects young people is a political and public health problem. Its prevalence not only impacts youth development, but also undermines the democratic foundation of society and is responsible for enormous losses in human, economic, and social capital in the Region.

Governments devote significant resources to the struggle against youth violence; however, many initiatives fail because little has been invested in evaluating the impact of the projects and in promoting youth participation in the process.

The primary objective of the "Promoting Youth Development and Violence Prevention" project, financed by the German government and implemented by the Pan American Health Organization (PAHO) and German Technical Cooperation (GTZ), is to improve the participation of the young people in the management of the youth development and violence prevention programs in selected countries —Argentina, Colombia, El Salvador, Honduras, Nicaragua, and Peru.

One of the main components of the project, knowledge management, aims to generate evidence of successful experiences and policies in preventing the violence affecting young people in Latin America. These evidences are drawn from the public health perspective and incorporate gender, development, and participation.

This publication, *Policies for the reduction of violence related to alcohol use among young people: An environmental approach,* is part of a series of such evidence documents. We hope that it helps to strengthen the capacity of professionals working in youth development and violence prevention in the different countries.

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I. Introduction

In Latin America and the Caribbean (LAC), the pervasiveness of violence is recognized as one of the most urgent threats to adolescent health and development. The leading causes of death among people between the ages of 10 and 19 include homicide, suicide, and motor vehicle crashes. Twenty-nine percent of all homicides in LAC occur in this age group (Breinbauer and Maddaleno, 2005).

Alcohol is often a major factor in these leading causes of death and injury. Globally, alcohol consumption causes 3.2% of deaths (1.8 million) and there are causal relationships between alcohol consumption and more than 60 types of disease and injury (WHO, 2002). Alcohol use is also a risk factor for numerous other serious health issues, including traumatic injury, drowning, burns, property crime, high risk sex, fetal alcohol syndrome, alcohol poisoning, and need for treatment for alcohol abuse and dependence.

Reducing harmful alcohol use and violence among youth is a priority for many countries in LAC. However, little research has been conducted to demonstrate the effectiveness of strategies to prevent or reduce alcohol-related youth violence. As a result, public health officials and prevention practitioners, especially at the local level, have little guidance in selecting potentially effective strategies.

The objective of this document is to provide a comprehensive summary of strategies and policies found in an environmental approach that have evidence or show promise in the prevention or reduction of alcohol-related violence that affects young people in LAC. The strategies and policies included in this document can be categorized into two groups: 1) strategies and policies that deal directly with reducing youth access to alcohol and 2) strategies and policies that target its conditions of use. The first set of strategies and policies prevent or reduce the violence related to alcohol use by operating under the assumption that youth are more likely to engage in violent behavior under the influence of alcohol; therefore, curbing access to alcohol would likely have an effect in reducing youth violence. The second set of strategies and policies operates under the assumption that there is a greater likelihood that youth (and adults) will engage in violent behavior under certain circumstances or conditions, where heavy alcohol use is likely to occur, such as in bars and at sporting events.

This document is divided into three sections. Section one summarizes youth alcohol consumption and the role that alcohol plays in the violence affecting young people in LAC. This section also provides background on the importance of addressing prevention of alcohol use as a means of preventing or reducing violence. Section two provides a summary of environmental prevention strategies and policies that have been identified to reduce alcohol-related violence affecting youth, including examples from LAC where available. The final section, section three, contains recommendations for next steps and identifies areas in need of further research and evaluation.

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1 *The World Health Report 2002* - Reducing Risks, Promoting Healthy Life. Geneva, World Health Organization, 2002. Available at: http://www.who.int/whr/2002/en/whr02_en.pdf

2 In this report youth are defined as being between the ages of 10 and 29 to be consistent with the definition provided in the *World report on violence and health* (Krug, 2002).

II. Alcohol consumption rates in Latin America and the Caribbean

Alcohol consumption contributes to a significant portion of physical, social and mental harm in LAC. According to Rehm and Monteiro (2005), alcohol consumption in LAC averaged 50% higher than worldwide consumption (8.9 liters per capita consumption for LAC compared to the global average of 5.8 liters) and a substantial portion of that consumption occurred in the form of irregular heavy drinking episodes. Such alcohol consumption patterns are taking its toll. In LAC, 4.8% of all deaths and 9.7% of all disability-adjusted life years (DALYs) lost in the year 2000 were attributable to alcohol consumption, placing alcohol as the most important risk factor for burden of disease, surpassing smoking (Rehm and Monteiro, 2005).

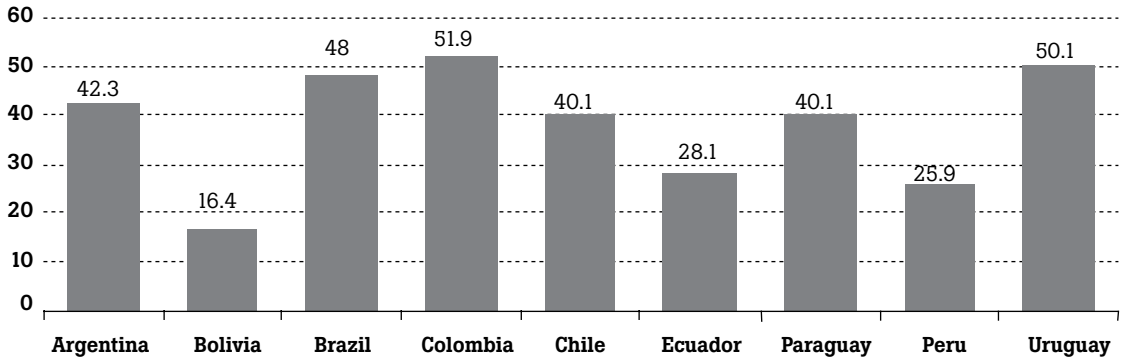
Although youth alcohol consumption rates vary considerably across Latin America and the Caribbean in general, alcohol is a widely used substance, both by youth under the legal drinking age (age 18 in most countries) and young adults aged 18 – 29. For example, data from the Inter-American Drug Abuse Control Commission's comparative report on nationwide schools surveys of 13 – 17 year olds in the Caribbean showed that that lifetime prevalence of alcohol use ranged from 58% among females in Guyana to 78.6% among females in Barbados (Figure 1). Reported drinking rates in the past month (Figure 1) indicate that 35% of students from Belize have had a drink in the past month compared to 29.7% of students from Barbados and 18% of students from Guyana (Inter-American Drug Abuse Control Commission, 2003).

FIGURE 1 Alcohol consumption rates by gender in select Caribbean countries

Country	Gender	Lifetime use	Use last year	Use last month
Barbados	Female	78.6	56	28.7
	Male	78.4	57	30.9
	Total	78.6	56.5	29.7
Belize	Female	69.7	51.3	29.7
	Male	77.4	60.6	40.3
	Total	73.6	55.9	35
Guyana	Female	58	30.4	15.7
	Male	66.2	42.2	20.8
	Total	61.7	35.7	18

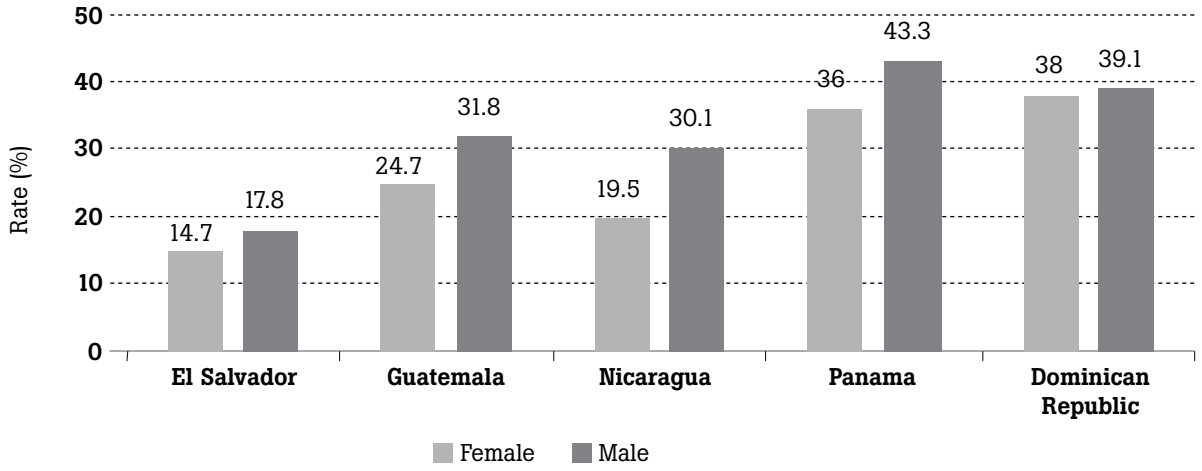
A recent survey of alcohol and drug use by 13-17 year olds in nine South American countries (Chart 1), also showed varying rates of past 30-day use (Inter-American Drug Abuse Control Commission, 2006). Students from Colombia had the highest prevalence rates (51.9%) followed by Uruguay (50.1%). In contrast, students from Bolivia (16.4%) reported the fewest past 30-day use rates followed by Peru (25.9%).

CHART 1 Prevalence (%) of alcohol use in the past 30 days, by country



In a 2003 survey of 13 -17 year old students in four Central American countries and the Dominican Republic, males in Panama (43.3%) and females in the Dominican Republic (38%) had the highest rates of alcohol use in the past month (Chart 2). Both males and females in El Salvador returned the lowest figures (15% in female student and 18% for male students) (Inter-American Drug Abuse Control Commission, 2004).

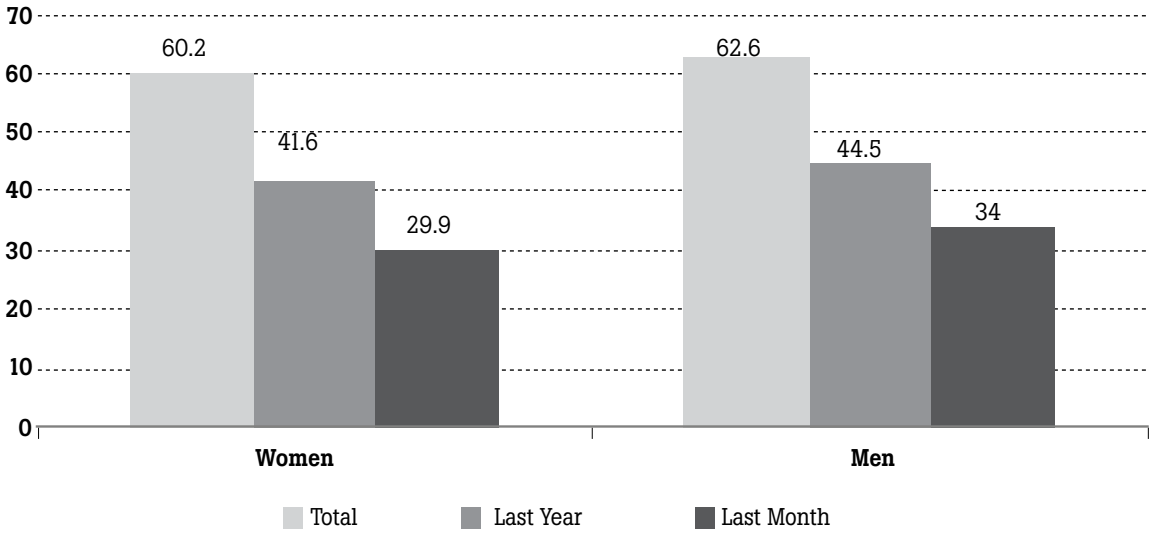
CHART 2 Prevalence of last month use of alcohol by gender and country



A study of more than 10,000 junior and senior high school students in Mexico City found that 61% of students had consumed alcohol at least once in their lives and that nearly 32% had done so during the previous month (Chart 3). An analysis of past month consumption by sex (Figure 3) shows that more men (34%) than women (29%) consume alcohol. Overall, 60.2% of females and 62.6% of men consumed alcohol at some time in their lives (Romero Mendoza et al 2005).

Recent surveys in LAC of young people aged 18 to 29 also show high levels of alcohol consumption within this age group. In an questionnaire about alcohol consumption administered to a sample of Costa Ricans 18 years and older, the respondents in the 18-29 age group reported the most drinkers in comparison to the 30 – 44 and 45 and older age groups. Furthermore, nearly 47% of males in the 18-29 age groups were either infrequent or frequent heavy drinkers, while this was true of 20% of women in the same age group (Bejarano-Orozco 2005).

CHART 3 Alcohol consumption among Mexican high school students by gender



The same questionnaire was administered in Buenos Aires, Argentina. As in Costa Rica, men and women in the 18-29 age groups reported more frequent and heavier drinking than the other age groups. Fifty-two percent of males in the 18-29 age group reported having had five or more drinks at least once in the past year, compared to 26 % of the 30 – 44 age group and 21% of the 45 and older age group. For women, 69.2% reported having had five or more drinks at least once in the past year compared to 18 % for women in the 30 – 44 age group and nearly 13% for the 45 and older age group (Munné 2005).

III. Alcohol use and violence[3] that affects young people

COST OF VIOLENCE

Crime and violence impede growth and development because they erode the development of human capital, destroy social capital and consume government resources that could be used for other development purposes (Ayres, 1998). Other researchers have also argued that crime and violence are among the key obstacles for development in developing countries, including for countries in Latin America (Cercone, 1994; Moser and van Bronkhorst, 1999).

The cost of violence is estimated at 14.2% of LAC gross domestic product (GDP) (Londoño and Guerrero, 2002). In Colombia, public spending on security and criminal justice in 1996 was 5% of the country's GDP (Buvinic, Morrison, and Shifter, 1999). The World Health Organization's *World Report on Violence and Health* (2002a) estimates that the youth homicide rate for the Region of the Americas is 36.3 per 100,000, which is double the African rate of 17.6 per 100,000 population.

In Latin America, both the perpetrators and victims of violence are mostly young and male. Moser and van Bronkhorst (1999) state in their study on youth violence in LAC that an estimated 80% of violent crimes are committed by men, the majority of who are under age 35, with an increasing number under age 14. In 1995 in Rio de Janeiro, 91% of the city's homicide victims were men; 57% were between the ages of 15 and 29 (Moser and van Bronkhorst, 1999). The authors also state that young women are confronted with high levels of violence, most often as victims rather than as perpetrators.

THE ROLE OF ALCOHOL

While anthropological research on alcohol cited in the WHO's (2002a) *World Report on Violence and Health* suggests that the violent effects of alcohol vary by culture and do not apply universally,[4] other research conducted throughout the world has demonstrated that there exists a relationship between violence and substance abuse. Osgood (1998), in his comprehensive review of research on alcohol and other drug use and adolescent violence, noted that despite competing viewpoints on whether violent behavior in youth leads to an increase in substance use or if substance use is a predictor of later violent behavior and other types of delinquency, a relationship between violence and substance use does exist and this relationship is consistent across types of substances (alcohol and other illicit drugs) and types of violence.

The 2002 World Bank study *Voices of the Poor,* which surveyed rural poor people in 60 countries, reported that, "life had become less secure, more marginal and more threatened in recent decades…

3 The World Health Organization defines violence as "The physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation" (WHO, 1996). In this document, youth violence refers to the violence in which youth participate either as perpetrators or as victims. This violence can manifests in many forms including bullying, gang violence, sexual aggression, suicide, and assaults in streets, bar and nightclubs.

4 WHO's *Youth Violence and Alcohol Fact Sheet* (2006a) reports that in the United States stronger links between alcohol and fighting were found among Mexican-American youths than non-Hispanic White youths.

due to the growing precariousness of livelihoods, exclusion from services and institutions, the loss of social cohesion, and the higher exposure to negative influences such as crime and alcohol."

This relationship has also been established by studies that have looked at the changes in mortality, injuries and crime rates after alcohol was restricted or made more available in among diverse populations, for example in Greenland, Micronesia, and aboriginal Australia (WHO, 2002b). Furthermore, research has shown that:

> In middle and high income countries, with reliable and comprehensive data regarding violent deaths and injuries dealt with at hospital emergency departments, show that homicide and non-fatal injury rates in young people (including the 15-18 year age group) are particularly sensitive to changes in societal and community-level risk factors. These factors include alcohol availability.

The World Health Organization's policy briefing, *Interpersonal Violence and Alcohol* (2006b), states that alcohol misuse and interpersonal violence both act as catalysts for each other and cites numerous studies linking alcohol use and interpersonal violence. Studies cited in the policy briefing linking harmful alcohol consumption to perpetrators of violence found that:

- In Russia, around three-quarters of individuals arrested for homicide had consumed alcohol shortly before the incident.
- In South Africa, 44% of victims of interpersonal violence believed their attacker to have been under the influence of alcohol.
- In Tianjin, China, a study of inmates found that 50% of assault offenders had been drinking alcohol prior to the incident.

The *Interpersonal Violence and Alcohol* policy briefing also states that harmful alcohol use reduces self-control and the ability to process information, thus reducing a drinker's ability to recognize warning signs in potentially violent situations, making them appear as easy targets for perpetrators. Studies regarding harmful alcohol consumption by victims of violence have found that:

- Among victims of violent injuries admitted to emergency rooms in six countries, the percentage of testing positive for alcohol ranged from 24% in Argentina to 43% in Australia.
- In São Paulo, Brazil, 42% of homicide victims were shown to have used alcohol prior to death and 46% of assault victims admitted to a trauma center tested positive for alcohol.
- Between 1999 and 2001, between 43% and 90% of victims admitted to hospital trauma units in three South African cities tested positive for alcohol.

Alcohol consumption is not only linked to acts of violence, but to the escalation of violence. Martin and Bachmann's (1997) study of assault incidents compared the severity of violence committed by perpetrators who had been drinking with those who had not consumed alcohol. Forty-two percent of the assault incidents escalated beyond threats to physical attacks when the assailant had not been drinking compared to 50% for those who had been drinking.

Evidence also suggests that alcohol use increases the occurrence and severity of domestic violence (Brecklin, 2002; Weinsheimer et al., 2005). For example, Ramirez et al., (1992) found that 26% of women seeking counseling in the urban areas of Mexico reported that their partners' abusive behaviors were fueled by intoxication.

In an epidemiological study on violence in Mexico City, Calí and Caracas conducted in the 1990s, Londoño and Guerrero (1999) found:

- The majority of homicide victims were between the ages of 15-29.
- The majority of homicide victims were men, and women were more often victims of non-lethal interpersonal violence.
- Homicides usually occurred in the late evening hours or early morning, during the weekends and holidays.
- Alcohol was strongly associated with violence by the perpetrator and the victim.
- Bars and other public drinking places are often the scene of the violent act.

In their study of how people living in nine poor urban communities in Guatemala perceive violence, Moser and McIlwaine (2001) describe how social violence outside the home was primarily linked with alcohol. They state:

> Heavy alcohol consumption was a major problem in all nine communities as a problem in itself, and in terms of its links to other types of violence. Outside the home it was closely related with street fighting and disturbances in local cantinas, while inside the home, it was linked with intra-family violence, especially against woman and children. Alcohol- and drug-related violence was associated with 23% of all violence related problems in the study communities, with alcohol-related violence representing an average of 10% of all violence-related problems.

The relationship between youth violence and alcohol use is widely documented in the most recent reports on youth and violence sponsored by international organizations. In the United Nation's World Report on Violence Against Children (2006) alcohol is consistently cited as an "immediate risk factor in violence involving children and youth" and "as an important factor in violence against children in community settings." According to the report, alcohol was identified as one of three factors consistently leading to the occurrence of youth violence.[5]

Studies cited in the UN report that have linked alcohol use to youth violence include:

- Alcohol use was consistently found in studies that looked at homicide and violence-related injuries that lead to hospital treatment in youth.
- In Finland, 45% of all violent incidents reported by 12-18-year-olds involved drinking on the part of the perpetrator and/or victim.
- In the Philippines, where 14% of 15-24-year olds reported physical injury through violence in the previous three months, violence was significantly associated with drinking.
- Among 10-18 years old participating in the Caribbean Youth Health survey, having used alcohol in the last year was significantly associated with weapon-related violence for both males and females.

The World Health Organization's *Youth Violence and Alcohol Fact Sheet* (2006a) reaffirms the link between alcohol use and youth violence and reiterates that, "alcohol use is itself a risk factor for involvement in youth violence." The studies cited on the WHO's *Youth Violence and Alcohol Fact Sheet include*:

- In England and Wales, 18-24 year old males who report feeling very drunk at least monthly are more than twice as likely to have been involved in a fight in the previous year, and females more than four times as likely, in comparison to regular but non-binge drinkers.
- In Israel, 11–16 year olds who reported both drinking five or more drinks per occasion and having ever been drunk were twice as likely to be perpetrators of bullying, five times as likely to be injured in a fight and six times as likely to carry weapons in comparison to 11–16 year olds with no reported history of drunkenness and binge drinking.

Strong links have also been found between child maltreatment[6] and alcohol use, especially under harmful or hazardous drinking. Studies have consistently found that having a parent with a history of harmful or hazardous alcohol use increases the risk of child maltreatment (Dube et al., 2001; Walsh, MacMillan and Jamieson, 2003). The World Health Organization's *Child Maltreatment and Alcohol Fact Sheet* (2006c) reports that the majority of the few studies quantifying the involvement of alcohol use in the perpetration of child maltreatment have been conducted in high-income countries. The findings from those countries include:

- In Germany, around 32% of offenders of fatal child abuse were under the influence of alcohol at the time of the crime.
- In the USA, 35% of offenders of parental child abuse had consumed either alcohol or drugs at the time of the incident.

5 Access to firearms and the physical environment are two additional factors.

6 Child maltreatment is defined as all forms of physical and/or emotional ill-treatment, sexual abuse, neglect, negligent treatment, commercial or other exploitation, resulting in actual or potential harm to the child's health, survival or development or dignity in the context of a relationship or responsibility, trust or power (WHO, 2006c).

Most studies concerned with the link of youth violence and alcohol have been conducted in developed countries; however, they may be relevant to developing countries in explaining the relationship between alcohol use and violence. The reason is that there is evidence "that youth cultures spread rapidly from developed to developing countries, bringing new drinking patterns with them" (WHO, 2002b). According to the WHO's *Youth Violence and Alcohol Fact Sheet* (2006a), recent increase in consumption of alcohol among young people where it was traditionally low (e.g. Israel, Philippines), may be pointing to the fact that "a youth culture of excessive drinking is spreading internationally."

IV. Strategies to address alcohol related violence

Public health officials in LAC are clearly concerned about both youth alcohol use and violence. This issue is placing a tremendous cost on LAC countries in terms of health care, poor school performance, lost work productivity, personal and public safety, and basic quality of life.

Governments globally have implemented a variety of strategies, programs and policies aimed at reducing youth access to alcohol, and, consequently, problems related to alcohol use. Prevention initiatives range from school-based projects that seek to teach children skills to resist alcohol use (i.e. Life Skills Training) to public education campaigns extolling the dangers of alcohol to public policies that are directed at changing the environments that facilitate alcohol use.

In the *World Report on Violence Against Children* (2006), the United Nations makes 16 recommendations for the prevention of community-based violence against and among youth. One of these recommendations is to reduce demand for access to alcohol and weapons, such as firearms. Specifically, the recommendation states:

> Governments should ensure comprehensive prevention which requires the reduction of both supply and demand for these two salient risk factors in community violence, including through measures such as pricing and regulation reforms, law enforcement and public education.

The next section will focus on detailing comprehensive prevention strategies to reduce access to alcohol as a means of decreasing youth violence.

AN ENVIRONMENTAL APPROACH

In the mid-1970s, a shift occurred in terms of how alcohol and other drug (AOD) prevention was viewed. Since that time, AOD use has been increasingly viewed as a public health problem rather than being viewed through a medical model, where it was perceived to be a disease affecting individuals. The importance of this shift has resulted in the emergence and development of new strategies that focus on the implementation of policies that promote healthy environments as opposed to solely working one-on-one with individuals in behavior change.

The environmental approach is based on the concept that people's behavior, including their AOD use, is powerfully shaped by their environment, including the messages and images delivered by the mass media, the norms of their communities and other social groups, the availability of substances, and so forth. Thus, effective prevention requires making appropriate modifications to the physical, legal, economic, and socio-cultural processes of the community at large that contribute to substance abuse and related problems (Holder, 1998). By targeting environmental factors, this approach to prevention differs from more traditional, individually oriented strategies, which tend to accept the environment and the risks it imposes as given and instead focus on enhancing individuals' abilities to resist its temptations.

According to public health advocates and researchers who promote the environmental approach, AOD related problems are the result of a complex interplay between individual use of alcoholic beverages or illicit drugs and the surrounding cultural, economic, physical, political and social environments (Edwards et al., 1994). Not all youth who use AOD

engage in violent behavior but certain environments increase the likelihood that such behavior will ensue. For example, violent activity is more likely to occur between males, during late evening hours, in or around alcohol establishments and when heavy drinking and/or illicit drug use has occurred. These are specific environments and therefore, policies promoted by governments (whether federal, state or local) should address these high-risk environments.

Below is a list of policies and strategies to reduce alcohol-related violence as it affects youth. The first genre of policies aims to reduce youth access to alcohol through impacting the supply. The second targets high-risk settings that contribute to violence.

1. Policies to reduce youth access to alcohol (controlling the supply of alcohol)

As previously mentioned, youth and adults who consume alcoholic beverages are more likely to be involved in or become victims of violence such as intra-familiar violence, aggression and criminality. Therefore, it is imperative for national and community leaders in LAC to promote and implement policies that make it harder for youth to get access to alcohol. The following policies have the purpose to prevent or reduce youth access to alcohol by placing general restrictions on where, how and to whom alcohol is sold.

1.1. Price increases

Public policies aimed at increasing the price of alcohol, especially through tax increases, have shown to be effective in reducing not only youth consumption but overall alcohol consumption, intoxication, and drinking and driving rates. The basic premise of such policies is that if alcohol prices go up, then consumption goes down, and if prices go down, consumption goes up (Edwards et al, 1994). Carlini et al (2002) have shown that the very low price of alcohol products (in part because of low taxes and low-priced products such as *cachaça*) in Brazil has contributed to the increase in alcohol consumption, especially among young people. Chaloupka, Grossman, and Saffer (2002) reviewed studies on the effects of price on alcohol use by youths between the ages of 16 and 21 in the U.S. and found that price increases had a more pronounced effect on heavy drinkers than on occasional drinkers (heavy or hazardous drinking is more closely linked with violent behavior than occasional drinking).

Grossman and Markowitz (2001) examined the impact of the price of alcoholic beverages on homicides and other crimes, including rape, robbery, assaults, domestic violence, and child abuse and describe a 4% reduction in the number of college students involved in violence each year attributed to a 10% alcohol price increase.

The evidence suggests that alcohol prices do have an impact on the level of alcohol consumptions and related problems. However, the real price of alcohol has decreased in many countries over the past decades. According to Babor et al., (2003), one reason for the price decline has been the failure of governments to increase tax levels in accordance with inflation. The experience in Europe and the United States suggests that attempts to increase taxes on alcoholic beverages are complicated in part by heavy lobbying in the part of the alcohol industry.

Babor et al (1993) also state that a downside to raising alcohol taxes is the possibility of potential alternatives or substitutions to taxed alcoholic beverages, particularly in terms of illegal smuggling or illegal in-country production of alcohol. Many forms of mass-produced alcohol are also home-brewed, such as *mezcal* and *aguardiente* in Mexico, *cachaça* in Brazil, *chichi* in Bolivia and *pisco* in Peru. The production process and the sale of these home brewed alternatives are difficult to monitor and control.

1.2. Minimum legal drinking age

Minimum legal drinking age (MLDA) laws establish a minimum age to purchase and/or drink alcohol. In the majority of countries in the world, these laws are established by the federal government. Although there are exceptions, for example, for religious purposes, these laws establish a norm of what age it is permissible for youth to begin drinking.

Several studies demonstrate that the younger a person begins drinking alcohol, the more likely they to of become a problem adult drinker and experience both short- and long-term health problems. York et al (2004) found that the likelihood of alcohol abuse or dependence later in life increases by 12 % for each year of decrease in the age of first drink for both

men and women. They also reported that the earlier an individual began drinking alcohol, the greater the degree of alcohol intoxication experienced routinely on typical drinking occasions in adulthood. An analysis of the 2003 U.S. National Survey on Drug Use and Health came to the same conclusion. The survey report states that persons reporting they first used alcohol before age 15 are more than five times as likely to report past year alcohol dependence or abuse as adults than persons who first used alcohol at age 21 or older (Office of Applied Studies, 2004).

MLDA laws do have an impact on youth drinking rates and particularly on the rates of youth alcohol-related traffic crashes. When Denmark established a 15-year-old age limit for off-premise sales in 1995, the consumption rates for youth under the age of 15 dropped for a period of time (Moller, 2002). In the United States, establishing a higher minimum drinking age resulted in lower youth drinking rates, including those for young teenagers and adults in their early twenties. As alcohol became less available to older adolescents (when legal age is raised from 18 to 21), younger cohort drinking rates declined (O'Malley and Wagenaar, 1991).

A greater impact on youth access rates can be obtained by effectively enforcing the MLDA law. In LAC, the MLDA laws range from 16–19 years old (see Appendix 1 for a list of minimum drinking age limits in certain LAC countries). However, MLDA laws are either not enforced or sporadically enforced and are often unknown or unclear to the general public. In Brazil, Kerr-Corrêa et al (2005) found that access to alcohol is relatively easy and the law that imposes a minimum age for purchasing alcohol is not enforced. In Argentina, Munné (2005) also reports that minors can easily access alcoholic drinks in discos and other outlets. For those reasons, although all LAC have MLDA laws, their impact on youth drinking rates in LAC has remained unknown and untapped. As a public policy measure, active enforcement that restricts youth access to alcohol must be a priority.

1.3. Controls on the hours of operation (restrictions in sale)

Restricting availability means putting regulations on obtaining alcoholic beverages: when, where and to whom it is sold and served. Thus, restricting the availability of alcoholic beverages includes a variety of measures, from sales monopolies to sales restrictions and age limits (WHO, 2004a). Some of the most prominent restrictions on the sale of alcoholic beverages are restrictions on hours, days, places of sale, and on density and location of outlets. Chikritzhs & Stockwell (2002) found that an increase in hours or days of sale often result in increased drinking or increased rates of alcohol-related violence such as assaults. In this same study the inverse relationship was also found to exist. Babor et al., (2003) also note that reductions in the hours and days of sale, and the number of outlets are associated with a reduction in alcohol consumption and related problems (Babor et al, 2003).

In 1999, Diadema, Brazil, had approximately 4,800 bars, more than one bar for every 800 inhabitants. In 1999 there were 374 homicides in the district with nearly half of the homicides occurring between the hours of 9:00 PM and 6:00 AM. In 2002, the district authorities restricted the hours of operation of the bars from 06:00 AM to 11:00 PM. An evaluation conducted two years after the law's implementation demonstrated a 45% decrease in homicides (translating into 273 lives saved) and a reduction in violence against women of approximately 26% (224 aggressive incidents prevented) (PIRE, 2004). (See Case Study #1 for a detailed look at this policy.)

Calí, Colombia, provides another example of reducing violence associated with alcohol consumption through restricting the hours of operation of bars and clubs. In the mid-1990s, the mayor of Calí commissioned surveys that found that 40% of violence victims and 26% of violent death victims in the city were intoxicated. According to Guerrero (2004) the city government in Calí looked at statistics from

7 In the United States, raising the drinking age to 21 has been a significant public health achievement and has improved the safety of adolescents. The National Highway Traffic Safety Administration (NHTSA), a federal agency, estimates that raising the drinking age from 18 to 21 in 1987 has saved over 23,000 lives related to alcohol-related traffic crashes between 1975 and 2004 (NHTSA, 2006). In New Zealand , traffic crashes and injuries increased 12% for 18-19 year old males and 14% among 15-17 year old males in the years after the New Zealand legislature lowered the drinking age from 20 to 18. For females, crash rates rose 51% for 18-19 year olds and 24% for 15-17 year olds. Researchers estimate that 400 serious injuries and 12 deaths could be prevented each year among 15-19 year old if the drinking age was raised back to 20.

8 'Off-premise sales' refers to alcohol purchases at outlets where the consumer purchases the alcohol to be consumed at another location (such as markets and liquor stores). 'On-premise sales' refers to alcohol purchases at bars, restaurants, clubs where the alcohol is to be consumed at the point of purchase.

the DESEPAZ program, an initiative of various governmental and non-governmental agencies, that showed that 56% of all homicides took place on one of the three days of the weekend (Friday, Saturday and Sunday). In response, the mayor promoted and implemented a semi-dry law that closed bars and discos at 1:00 AM on weekdays and 02:00 AM on Fridays and Saturdays. Over a six year period, the homicide rates were reduced from 124 per 100,000 inhabitants in 1994 to 88 per 100,000 in 1998 (Concha-Eastman et al, 2002).

Similarly, a reduction of 19.4% in per capita alcohol consumption was reported in an Aboriginal community in Australia following a government initiative to close bars on Thursdays, the day that most heavy drinking was reported in this community. The decrease occurred over the two years following the introduction of the restrictions. This was accompanied by declines in hospital admissions for acute alcohol-related problems, persons taken into police custody and the proportion of violent offences reported on Thursdays (Gray, Saggers and Sputore, 2000).

1.4 Controls on location/density of outlets that sell alcohol

As with restrictions on hours and days of sale, restricting the number of outlets or establishments that sell alcohol may affect levels of drinking and alcohol-related problems. According to Babor et al., (2003) the smaller the number of outlets that sell alcoholic beverages, the greater the opportunity costs (e.g., time, inconvenience) for obtaining alcohol, which produces a situation that is likely to deter alcohol use and problems. In conclusion, another policy that governments can promote to limit youth access to alcohol and alcohol-related violence is to limit the number of outlets that sell alcohol in communities.

Communities in the United States use three different criteria to restrict the location/number of alcohol outlets. They can:

- Prohibit alcohol outlets within specified distances from schools, child care centers, youth centers, and other locations where children congregate. For example, the state of California uses a 600-foot buffer zone around schools, playgrounds and youth facilities (OJJDP, 1999).
- Prohibit alcohol outlets from locating within specific distance of other alcohol outlets.
- Restrict the total number of alcohol outlets based on a population ratio.

In a recent study, Gruenewald et al., (2006) found that stores that sell alcohol magnify violence problems in all neighborhoods where they are concentrated. The researchers examined data on violence throughout California and found that the areas with the highest incidents of violence were poor urban neighborhoods and rural towns that had high levels of community disorganization, poverty and residential instability. In such locations, the concentration of stores that sell alcohol and bars magnified the communities' existing violence problems. In LAC, several countries do not have any restrictions on outlet density (see Appendix 2 for a list of specific policies related to location, density and hours of sale).

1.5. Appropriate sanctions for violations (enforcement)

Penalties for violating commercial availability restrictions are crucial to a comprehensive prevention strategy. It is important that legislation supports enforcement and monitoring of alcohol laws. This requires that laws give proper authority and resources to regulation officials to carry out their functions. The application of appropriate sanctions to violating merchants can reduce or deter future violations, thereby improving the community's health and safety. Research on deterrence shows that, in order to be effective, there must be a credible threat that a significant negative consequence will occur. The threat must be perceived to be swift and certain, and for the effect to be maintained, the threat must be perceived to continue over time (OJJDP, 1999).

Violation of alcohol laws can lead to different types of penalties, including administrative and criminal. Administrative penalties target the retailer's operating liquor license. For example, a bar owner may lose his the ability to sell alcohol for a week or might be fined a specific amount of money. Losing the ability to sell alcohol for a specific period has a more immediate impact as the revenue loss is immediate, whereas a fine may never be paid or payment may be delayed. Criminal penalties target the individual committing the violation rather than the license.

Penalties assessed against the offender may include fines, imprisonment and/or probation. Proactive enforcement of alcohol-related laws by police officials is a key component to applying appropriate penalties for violators. However, enforcement of these laws remains superficial in LAC (Pyne, Claeson and Carreia, 2002).

1.6. Compliance checks

Youth get their alcohol from a variety of sources, including friends, family members and other adults as well as from commercial sources such as stores and bars. In designing strategies to reduce access, all of these sources must be considered. In general, the most effective strategies at reducing youth access to alcohol are aimed at retailers. Communities should place primary emphasis on the vigorous enforcement of the laws prohibiting sales to minors and target retailers from selling to youth.

Routine, comprehensive compliance checks are the key strategy for deterring commercial (i.e. stores and bars) alcohol sales to minors. They involve the use of underage buyers by law enforcement agencies as agents to test retailers' compliance with laws regarding the sale of alcohol to minors. Grube, (1997) in reporting the results of a comprehensive program implemented in three communities, found that outlets in the experimental sites were about half as likely to sell alcohol on a posttest purchase survey as outlets in the comparison sites. Preusser, Williams, and Weinstein (1994) reported that a compliance check program in one community resulted in reduced sales to underage police agents from 58% to 26% over a 10-month period, after three waves of enforcement.

While compliance checks can be a useful tool to reduce youth access to alcohol, the situation in LAC presents a special challenge due to the fact that in some countries, not all alcohol retailers may be officially licensed and government officials may not have a way of tracking all alcohol retailers. However, given the proper authority and resources, regulation officials may be able to better monitor both compliance of alcohol laws and ensuring that only licensed establishments are able to sell alcohol.

Summary of policy measures to reduce youth access to alcohol by controlling the supply of alcohol

- Increase price of alcohol by raising taxes
- Establish minimum age for purchase and consumption
- Enforce age limits
- Reduce number of hours alcohol allowed to be sold
- Reduce number of days alcohol allowed to be sold
- Reduce locations at which alcohol allowed to be sold
- Establish mechanisms to check the compliance of alcohol venders with regulations

2. Effective policies related to high-risk settings

The following strategies and policies target alcohol and its conditions of use. These strategies and policies operate under the assumption that there is a greater likelihood that youth (and adults) will engage in violent behavior under certain circumstances or conditions, where heavy alcohol use is likely to occur, such as in bars and at sporting events.

Globally, the majority of alcohol-related violence occurs at night, particularly on weekends, and often takes place in and around drinking venues. Venue characteristics associated with a greater likelihood of violence incidents include crowded, hot and noisy environments, poorly maintained premises, settings that offer discounted alcoholic drinks, employ aggressive door supervisors, have a high number of intoxicated patrons and have a permissive attitude toward alcohol-related laws (e.g. serving underage or drunk customers) (Homel, McIlwain and Carvoth, 2001; Graham and Homel, 1997).

2.1. Responsible beverage service

Research strongly suggests that there is an association between serving practices and the over-consumption of alcohol (Babor, 1978; Kuo, et al., 2003). Responsible beverage service programs train and teach alcohol servers, sellers, bartenders, and managers about alcohol laws and are designed to reduce sales to minors and intoxicated adults. In the United States, several jurisdictions have mandated that alcohol license holders train their staff on responsible beverage service practices.

Interventions designed to support improved serving practices and the enforcement of laws governing these practices are associated with improved compliance and a decrease in alcohol-related harm (Wagenaar and Holder, 1991; Toomey et al., 2001; Wiggers, et al., 2001; Wechsler et al., 2003). In general, these interventions are more likely to be successful when they include instructions for business owners on how to develop appropriate alcohol serving policies, focus on skills development and active learning for owners, managers and all staff, and are implemented community-wide in conjunction with compliance checks and a media campaign (Grube, 1997; Saltz & Stanghetta, 1997).

Another component to responsible beverage service training focuses on preventing aggression and managing problem behavior in patrons. An example of such an initiative is the Safer Bars Program, developed over a five-year period in consultation with bar owners and staff from 20 licensed vendors. The program was implemented and evaluated in Toronto, Canada, from 2000-2003 (Graham and Purcell, ND). The Safer Bars program includes a risk-assessment and a 3-hour training component for owners, managers, and all staff and is designed to change the bar environment in ways that minimize risk of aggression (Graham, 1999). These changes to the bar environment include training security staff on conflict resolution and how to take proactive steps in dealing with intoxicated and problems patrons before violent incidents occur. Results from the evaluation showed that the program changed attitude and increased knowledge among trained staff and resulted in a decrease in aggression among patrons (Graham and Purcell, ND).

2.2. Elimination of happy hours and 'All-you-can-drink' specials

In order to attract customers or compete with other establishments, alcohol-serving establishments engage in promotional or special pricing of alcoholic beverages. These promotions, including happy hours, 'all-you-can-drink' specials, 'ladies' nights, 'two-for-one' promotions, and other similar practices usually limited to specified hours, encourage bar and restaurant customers to drink large quantities of alcohol quickly, thereby reducing the incentive to monitor consumption levels and responsible drinking. The consequences of this high-risk drinking include automobile crashes and fatalities, injuries, unplanned sexual activity, assault, rape and property damage.

Several jurisdictions in the United States have taken legislative action to eliminate special drinking promotions. There is currently no evidence to suggest these policies will reduce violence or drinking rates; however, research does demonstrate that alcohol consumption, intoxication, and drinking and driving rates are sensitive to the price of alcoholic beverages (Chaloupka, et al., 2002), indicating that special or promotional pricing of alcoholic beverages are a potential public health threat.

For example, researchers in the Netherlands found that drink discounts play a significant role in youth drinking behavior. A survey among 14 and 15 year-olds in the Netherlands showed that Dutch youth who visit bars indicate that alcohol discounts regularly play a decisive role in the choice of bars and alcohol discounts often result in higher alcohol consumption (Van Hoff et al, 2007). Sixty-three percent of the youth who participated in the survey reported that they base their choice of which bar to go to on the presence of an alcohol discount. More than half (55%) of the adolescents reported drinking more alcohol than usual when an alcohol discount is present (Van Hoff et al, 2007).

2.3. Local control strategies

In the public sphere, the threat of aggressiveness, disorderly behavior, and physical harm, has led to a variety of interventions targeting public display of intoxication or eliminating the possibility for people to get highly intoxicated in the first place (Rehn, Room & Edwards, 2001).

These policies include prohibitions or controls on alcohol use at community events or in public areas such as parks and streets. For example, in the United States, public health advocates have promoted policies that prohibit serving alcohol at large public festivals such as community fairs or restricting alcohol consumption to certain designated areas. Usually in these designated areas patrons are restricted to purchasing only certain quantities of alcoholic beverage at a time (e.g. two cups of beer), can only consume the beverage within the designated area, and must show proof of age to enter the area. All staff working in these designated areas is highly trained to spot problem drinkers. These policies attempt to ensure

that patrons drink safely, that only those over the legal drinking age purchase alcohol and that over-consumption does not take place.

In Puerto Rico, a community within the capital city of San Juan joined forces with public officials to implement a series of policies aimed at changing the social norms surrounding alcohol consumption in their community. Residents of Old San Juan complained about the public drunkenness, violence and vandalism that occurred on weekend nights and felt that the decreasing quality of life was the result of the absence of any policies that dealt with alcohol consumption. Public officials implemented a series of policies including prohibitions on street drinking, drink specials and alcohol advertisement and the police began to enforce these laws. In the three years after the policy implementation, crime rates fell by 20% (Harwood et al., 2004) (see Case Study number 2 for a more detailed description of the policies implemented).

Summary of policy measures to reduce youth access to alcohol by controlling the supply of alcohol

- Increase price of alcohol by raising taxes
- Establish minimum age for purchase and consumption
- Enforce age limits
- Reduce number of hours alcohol allowed to be sold
- Reduce number of days alcohol allowed to be sold
- Reduce locations at which alcohol allowed to be sold

3. Other policies related to reducing youth access to alcohol

3.1. Alcohol advertisement restrictions

According to Jernigan (2001), the marketing of alcohol to youth has gone through tremendous changes over the last two decades. New alcoholic beverages are being designed for the youth market, including wine coolers, alco-pops, pre-mixed cocktails, and energy drinks containing alcohol. Alcohol industries currently market these products via Internet, by creating an association between the product and popular music, through sports marketing, in addition to regular marketing practices, such as magazine ads and television and radio commercials.

Research on alcohol advertising in traditional media (TV, radio, and print) suggests that it has a minimal impact on drinking behavior (WHO, 2004a). However, the shift in alcohol advertisement and marketing from traditional media to advertising that seeks to intertwine product name into the day-to-day activities of the target audience has played a significant role in the globalization patterns of alcohol use by young people (Jernigan, 2001).

Moreover, the marketing of alcohol has contributed significantly to the construction of identities associated to and the definition of social norms regarding its consumption as described by Jernigan (2001), "the choice to drink, of how much to drink, and of which beverage, and the choice of whom to drink with, in what situation, all become means for claiming and living out an identity which is increasingly shaped by global rather than local actors and trends" (Jernigan, 2001). Jernigan states:

> "In the marketing driven chain, the product becomes a symbolic object to which the multinational marketers attach a wide range of signification, seeking to implant new or extended traditional drinking patterns and cultures, broadening the range of times, places and reasons for drinking the products."

In LAC, many countries do have restrictions on advertising, although most are partial or voluntary restrictions (see Appendix 1 for a list of countries with alcohol advertising restrictions). For example, Argentina places restrictions on the advertising of alcoholic beverages aimed at minors under 18; namely, minors under 18 should not be portrayed drinking, the consumption of alcohol should not suggest the improvement of physical or intellectual performance and alcohol should not be connected with sexual stimulation or violence in any form (Munné, 2005). However, very few Latin American countries that do have restrictions on advertising and sponsorship actually enforce these laws (see Appendix 1).

Sponsorships of sports events, concerts and cultural events by the alcohol industry are an important part of marketing and promotion. According to the WHO's *Global Status Report on Alcohol Policy*, only 24% of countries worldwide have statutory controls on sponsorship of sports or youth events. Eleven countries, including two Latin American countries, (Costa Rica and Guatemala), have complete bans on both

kinds of sponsorships and five countries, including Panama and Venezuela, ban sponsorship of youth events (WHO, 2004b).

The Region of the Americas has the highest number of countries with restrictions on beer industry sponsorship of sports events (42%) (WHO, 2004b). More research is needed to measure the enforcement of such restrictions in Latin America. Nonetheless, the WHO found that the Americas seems to have the least number of countries with low levels of enforcement. It is important to note, however, that the level of perceived enforcement increases with the frequency and toughness of advertising restrictions (WHO, 2004b).

4. Prevention of impaired driving

In many countries, the personal and societal costs associated with impaired driving (drinking and driving) are staggering. For example, in the United States, motor vehicle crashes are a leading cause of death for people ages 15-20. Youth between 15 and 20 years of age are killed in traffic crashes at twice the rate of the general population and alcohol is involved in over 35% of these crashes (NHTSA, 1995). Figure 2 shows standardized mortality rates per 100,000 population for traffic casualties for select LAC countries (with comparison to the United States and Canada).

In countries that make substantial use of motor vehicles for transportation, impaired driving crashes may be of concern. In an effort to reduce the death and injuries associated with impaired driving, countries have implemented various strategies, including zero tolerance laws and vigorous and well-publicized enforcement of impaired driving laws.

4.1. Zero tolerance laws

Zero tolerance laws set the Blood Alcohol Concentration (BAC – the level of alcohol in a person's blood) at a lower level for young people than adults. The penalties for violating zero tolerance laws usually result in the automatic loss of a person's driver's license. A study of the effect of zero tolerance laws in the first twelve states in the U.S. to enact such laws found a 20% relative reduction in the proportion of single-vehicle night-time fatal crashes among drivers under the age of 21, compared with the nearby states that did not have zero tolerance laws (Hingson et al., 1994).

Figure 2 Standardized mortality rates per 100,000 population

Country	Traffic Casualties
Argentina	9.56
Brazil	16.63
Chile	10.69
Colombia	17.71
Costa Rica	17.83
Cuba	12.19
Ecuador	11.95
El Salvador	33.51
Mexico	11.64
Panama	15.25
Paraguay	10.42
Trinidad and Tobago	11.87
Uruguay	10.05
Venezuela	23.20
United States	15
Canada	8.45

Source: WHO Global Status Report on Alcohol 2004 (WHO, 2004a)

4.2. Sobriety checkpoints

One strategy for increasing certainty of apprehension and punishment is to increase the frequency and visibility of impaired driving enforcement, such as sobriety checkpoints. Sobriety checkpoints are a law enforcement technique where law enforcement officials evaluate drivers for signs of alcohol or drug impairment. Vehicles are stopped in a specific sequence (e.g., every other vehicle or every fourth vehicle). Fell et al (2004) found that in the United States more frequent and better publicized sobriety checks can cut impaired driving fatal crashes by 20%. Roeper et al (2000) reported that in a three-year period there were 116 fewer injury accidents, representing a savings of approximately $7 million after a community in California increased enforcement of sobriety checkpoints combined with extensive use of the media.

5. Programs targeting individuals

5.1. Screening and brief interventions

Early detection of substance abuse problems, includ-

ing alcohol, has become increasingly valuable in the management of people with alcohol-related problems. One of the most effective and low-cost strategies for early detection is screening and brief interventions (SBI) by primary health care workers. The first step in the SBI process is screening, where a health care professional administers a brief instrument to identify whether a patient has an alcohol-related problem. Once the screening has been conducted, the SBI approach guides the health worker to use brief interventions to respond to three levels of risk: hazardous drinking, harmful drinking and alcohol dependence (Babor and Higgens-Biddle, 2001).

In a comparison of screening instruments for identifying alcohol dependence, alcohol abuse or harmful drinking between a primarily Mexican-American emergency room population in California and emergency rooms patients in Pachuca, Mexico, Cherpital and Borges (2000) found that those instruments showing the greatest sensitivity for alcohol dependence performed equally well across the two samples.

Wilk et al., (1997) reviewed twelve randomized controlled screening and brief intervention trials and concluded that drinkers receiving a brief intervention were twice as likely to reduce their drinking over six to 12 months as those who received no intervention. Moyer et al., (2002) conducted a review of studies comparing brief intervention both to untreated control groups and to more extended treatments and found positive evidence for effectiveness of brief intervention.

In Costa Rica, Montero (1992) found that there was a significant reduction in the intensity of drinking across groups participating in various brief interventions. Serrano et al., (1992), in their study in Mexico, found some evidence that the number of drinking days changed in those individuals participating in a brief intervention. Currently, screening and brief intervention are being used in various LAC countries such as Brazil, Argentina, Mexico, Peru and Panama.

5.2 School-based education

The aim of alcohol education programs based in school settings is to change youth drinking beliefs, attitudes and behaviors or to strengthen social skills and self-esteem that are believed to be underlying factors in youth drinking. In a review of research on school-based interventions, Anderson and Baumberg (2006) found that although these programs increased knowledge and changed attitudes toward alcohol use, actual alcohol use remain unaffected.

Foxcroft et al (2003) identified and summarized 56 studies of psychosocial and educational interventions aimed at the primary prevention of alcohol misuse by young people up to the age of 25. This review included long term studies (more than three years) as well as popular international programs such as DARE and Life Skills Training. They found that 20 of the 56 studies showed evidence of ineffectiveness and that no firm conclusions could be made about the effectiveness of prevention interventions in the short- and medium-term.

Longer term outcome results from Project Northland[9] showed that at four-year follow-up, there were no significant effects of the Project Northland intervention over the control group (Perry et al., 1996). The evaluation showed that it had a positive influence on alcohol knowledge and family communication about alcohol but it had no sustained impact on alcohol use. Clayton et al (1991) followed-up a Drug Abuse Resistance Education (DARE) intervention after five and 10 years from when the students participated in the program and found that DARE status was unrelated to alcohol use at follow-up. Ringwalt et al., (1991) found similar results after evaluation of DARE.

9 Project Northland was a series of school-based resistance skills, media literacy and normative education sessions.

V. Recommendations

Over the past several decades, public health advocates have focused attention on policies that change the environmental factors that breed alcohol and other drug related problems such as crime and violence. As public health advocates have implemented environmentally-based policies, researchers have shown that many of the policies have been effective in reducing a variety of AOD-related problems, including youth access to alcohol, violence, and impaired driving fatalities. As stated by WHO, individual approaches to prevention, such as school-based prevention programs, have been shown to have a much smaller effect on drinking patterns and problems than do population-based or environmentally-based approaches that affect the availability of alcoholic beverages and where they are consumed (WHO, 2004a).

Although no extensive list of research exists on the effects of environmentally based prevention strategies in LAC, several of the strategies mentioned here have been implemented with successful results. The case studies provide a glimpse of what is possible in LAC in terms of reducing alcohol-related youth violence. Below are recommendations for policy makers, public health officials and community advocates who are interested in implementing effective strategies to reduce alcohol-related youth violence. The recommendations are divided into two categories: research and policy implementation.

RESEARCH

To create effective policies to prevent AOD-related youth violence, public health officials need to have data on the extent of the problem and areas of high-priority. The first step to identifying the appropriate policy is to determine the area of greatest concern. The questions to be answered by the research and data collection include:

- ***Who:*** Who is engaged in the violent activity? Who is engaged in alcohol-related violence? Who is engaged in illicit drug-related violence? What age group is at high-risk for AOD-related violence? Are males or females most at risk? What are the socio-demographic dynamics of those youth involved in AOD-related violence? Are youth involved in gangs at higher risk for AOD-related violence?
- ***When:*** When is AOD-related violent activity most likely to occur? During weekends? Late evening hours? Early morning hours? During holidays?
- ***Where:*** Where is AOD-related violence occurring? Is it occurring at bars, nightclubs or other drinking establishments? Is it occurring in specific bar environments (i.e. neighborhood bars, large nightclubs, places that sell low-priced alcohol)? Is it occurring at public festivals? Is the AOD-related violence occurring in public spaces (streets, bars, etc.) or in private (residential home)?
- ***How:*** How are youth, especially those under the legal drinking age of their country, able to get a hold of alcohol? How are youth able to get a hold of illicit drugs? How are they consuming alcohol and other drugs? Do they drink high levels of alcohol when they do drink?

The information for these types of questions can be obtained through various sources but most often through surveys and public data collection. The most typical type of surveys include school (or youth) and household. However, information can be obtained from specialized surveys that target specific populations, such as surveys that are given to youth who are arrested or incarcerated and surveys that are given to youth who are not in school.

Data from other sources include law enforcement data. Law enforcement usually does or can track where and when violence occurs, who was involved and whether alcohol or other drugs were involved. Hospital records can also track information regarding patients who are involved in AOD-related incidents.

In addition, there needs to be more research on the role of alcohol in injuries and violence. Most of the research that has been conducted on the relationship between alcohol and violence has been completed in the United States, Europe and Canada. This type of research in LAC can be valuable in helping decision makers with appropriate information regarding the extent of the problem, the costs to society and what strategies have proven to be effective. Additional research to be conducted includes:

- Surveillance of alcohol-related injuries
- Research on links between alcohol and violence and their costs to society
- Research on the effectiveness of enforcement and monitoring in lowering youth access rates to alcohol and alcohol-related violence
- Research on alcohol-involved traffic deaths and effectiveness of interventions on reducing alcohol-involved crashes, injuries and death
- Research on and monitoring of alcohol-marketing practices toward youth

POLICY IMPLEMENTATION

Reducing alcohol-related youth violence is by no means an easy task. It requires the implementation of a series of policies and strategies. Government officials and community organizations attempting to implement the alcohol policies may find policymakers and the public skeptical and resistant to making changes in laws, raising alcohol prices and enforcing alcohol laws. However, the recommendations described in this document provide a summary of policies and strategies that will have an impact in lowering violence rates through the implementation of effective alcohol policies. Below is a list of policy recommendations:

- **Increase the price of alcohol**: Research from around the globe indicates that raising the price of alcohol, for example through an alcohol tax, is one of the most effective policies in controlling the sale of alcohol. It lowers overall drinking rates for all age groups. In the majority of countries globally, the price of alcohol has not kept up with inflation. Price controls include limiting happy hours, all-you-can-drink specials and free alcohol giveaways. In LAC, governments should give priority to increasing the price of alcohol as a means reducing youth access to alcohol.
- **Controls on alcohol availability, selling hours and outlet density**: Other policy or strategy priorities should be given to controls over the times when alcohol can be legally sold, its physical availability and density or concentration of alcohol outlets in any given area. For example, if the majority of AOD-related violence occurs on Friday and Saturday nights at local neighborhood bars, then it may be appropriate to establish a law that changes the hours in which alcohol can be sold on these days. Such was the case in Diadema, Brasil, and Old San Juan, Puerto Rico.
- **Enforcement of alcohol laws**: Another priority must be given to supporting enforcement and monitoring of new or existing alcohol laws. Again, in Diadema and Old San Juan, new laws were created to control the hours of physical availability of alcohol but just as important, support was given to the appropriate enforcement agencies to monitor the new laws. Establishing and enforcing a minimum legal drinking age will also help in reducing youth access to alcohol.
- **Alcohol advertisement restrictions**: Other priorities for governments and community organizations to consider are restrictions in alcohol advertisements. Alcohol is now advertised to youth through various mechanisms besides television, radio and billboards. The marketing of alcohol is now embedded in music, sports, cultural events, sponsorships

and the Internet. Governments can restrict where and when alcohol advertisements are shown and community organizations can choose not to have cultural events, youth sports and other family events be sponsored by the alcohol industry.

Once an appropriate comprehensive strategy is chosen, implementation of the strategy will require the commitment and partnership of many sectors of society. This includes public policy makers (both elected and non-elected), public health officials, youth, community groups/activists, law enforcement officials and others interested in the issue. If effective policies do not exist, then they must be created. If effective polices are in place, then they must be enforced. Well-written laws and polices related to AOD are in place in LAC but implementation and enforcement has been weak.

Once policies are implemented, governments and communities should also implement a way of monitoring the policy's effectiveness. An evaluation component is helpful to communities, policy makers and public health officials in determining whether the desired impact of the policy is occurring. A good evaluation will not only show whether youth violence is being reduced, but the amount of youth violence being reduced. Again, the examples in Brazil and Puerto Rico demonstrate that officials in both communities were able to show violence and crime reductions.

The majority of communities operate in an environment where resources are scarce and where prevention programs often compete with each other for those resources. The process and approach described in this document is not easily accomplished in the short term. It requires resources to determine how much of the violence is AOD-related, who is involved and where it occurs. It also requires political and community will to identify and implement the appropriate strategies that will prevent AOD-related violence and crime. However, studies from North America, Europe and Australia show that this approach is successful and several recent LAC examples show that this approach is quite feasible, especially when they are combined with other prevention projects such as school-based curriculums and community-based programs that work with at-risk youth.

VI. Appendices

APPENDIX 1. Alcohol regulations

Country	Age Limit	Restrictions on consumption in parks and on streets	Sponsorship restrictions	Enforcement of advertising and sponsorship restrictions
Argentina	18	Ban	Voluntary	Partially
Belize	18	Ban	Partial	No
Bolivia	18	No	Voluntary	Partially
Brazil	18	No	No	Partially
Chile	18	Ban	No	Partially
Colombia	18	Ban	Partial	Fully
Costa Rica	18	Ban	Ban	Unknown
Dominican Republic	18	No	Partial	Partially
Ecuador	18	Ban	Partial	Partially
El Salvador	18	Voluntary	No	Unknown
Guatemala	18	Ban	Ban	Partially
Guyana	18	Ban	No	N.A.
Honduras	18	Partially	No	Partially
Jamaica	16	No	No	N.A.
Mexico	18	Voluntary	Partial	Partially
Nicaragua	19	No	Unknown	Unknown
Panama	18	Ban	No/Ban	Partially
Paraguay	18	Ban	Partial	Partially
Peru	18	Voluntary	No	Fully
Suriname	16	No	No	N.A.
Trinidad and Tobago	18	No	No	N.A.
Uruguay	18	No	No	N.A.
Venezuela	18	Ban	Partial/Ban	Unknown

Source: World Health Organization. (2004) *Global Status Report: Alcohol Policy.* Geneva, Switzerland: WHO, Department of Mental Health and Substance Abuse.

APPENDIX 2. Off-premise alcohol sale restrictions and levels of enforcement

Country	Hours of Sale	Days of sale	Places of sale	Density of outlets	Level of enforcement
Argentina	Yes	No	Yes	No	Partially
Belize	Yes	Yes	No	No	Rarely
Bolivia	No	No	No	Yes	Rarely
Brazil	No	No	No	No	Unknown
Chile	Yes	Yes	Yes	Yes	Partially
Colombia	Yes	Yes	Yes	No	Partially
Costa Rica	Yes	Yes	Yes	Yes	Fully
Dominican Republic	No	No	Yes	No	Partially
Ecuador	Yes	Yes	Yes	No	Partially
El Salvador	Yes	No	Yes	N.A.	Fully
Guatemala	Yes	No	Yes	No	Unknown
Guyana	Yes	No*	No*	No*	Partially
Honduras	Yes	Yes	Yes	No	Partially
Jamaica	No	No	No**	No	Rarely
Mexico	Yes	Yes	Yes	No	Partially
Nicaragua	No	No	Yes	No	Not
Panama	No	Yes	Yes	No	Partially
Paraguay	No	Yes	Yes	No	Partially
Peru	No	Yes	No	No	Partially
Suriname	Yes	No	Yes	No	Rarely
Trinidad and Tobago	Yes	Yes	Yes	No	Partially
Uruguay	Yes	No	No	No	Partially
Venezuela	Yes	Yes	Yes	Yes***	Unknown

* Yes for Spirits
** Yes for Wine and Spirits
*** Unknown for Beer and Wine

Source: World Health Organization. (2004) *Global Status Report: Alcohol Policy*. Geneva, Switzerland: WHO, Department of Mental Health and Substance Abuses.

APPENDIX 3. Case study 1: *Prevention of Violence in Diadema, Brazil*

In response to questions from the mayor, the Diadema secretary for social defense asked the municipal civil guard to develop a map of criminality in Diadema, a suburb of São Paulo. The crime report data for the city demonstrated that about 60% of murders in the city occurred between 11:00 PM and 6:00 AM and most frequently in the city neighborhoods with high bar concentration. Murder investigations further revealed that the majority of these crimes were not planned, but were in response to spontaneous confrontations. Additionally, 45% of complaints about violence against women occurred during these same hours, and these violent acts were highly associated with alcohol consumption. The data analysis demonstrated that violent crime was closely connected to times and locations where heavy alcohol consumption occurred, specifically during late evening hours.

Public officials in Diadema then took the step to adopt a municipal law to limit the hours for permitted alcohol retail sales (Municipal Ordinary Law #2.107 adopted July 15, 2002). The new code required that all alcohol retailers in Diadema cease alcohol sales at 11:00 PM. Following the passage of the municipal law, public information materials describing the need for and content of the new law were distributed to all households in Diadema. The public education campaign included use of local news and radio announcements, as well as meetings with community leaders.

Six months prior to scheduled implementation of the new alcohol policy the municipal civil guard visited most alcohol retailers and discussed with the owners the proposed new law and its application to alcohol sales. A second visit was held with retailers three months prior to policy adoption and the owners were asked to sign a declaration that they were aware of the law and the legal consequences of violations.

Two features of the Diadema municipal law on alcohol sales make it particularly effective: first, penalties for violation of the law are adjudicated administratively, not criminally; second, the penalties are progressive in nature and clearly established in the law. The first violation results in a warning, the second violation in a fine, the third violation is a fine and a temporary license suspension, and the fourth violation in a license revocation.

Research estimates that following the policy implementation, 273 murders were prevented over the 24 month period, or an average of 11 murders per month. Research also shows that rates of assaults against women were lower in the two years following adoption and enforcement of the new alcohol policy. Recent surveys conducted by the Mayor's office reveal that 98% of Diadema residents know about the law and 93% support the new alcohol policy (PIRE, 2004).

APPENDIX 4. Case study 2: *Old San Juan and the Code of Order*

The historical district of San Juan, Puerto Rico, known as "Old San Juan," is a highly diverse zone containing residential, business and tourist areas. In the mid-1990s, this small district was also oversaturated with alcohol outlets, containing approximately 100 alcohol outlets. Residents of Old San Juan began to complain to public authorities about the heavy volume of people drinking in the streets, the high incidence of underage drinking, trash, increased crime, vandalism and excessive noise.

In response to the decreasing quality of life of Old San Juan residents, they organized and began working with merchants, law enforcement and public officials to develop and implement a plan to improve safety. The group focused on the price, promotion and over-saturation of alcohol as the primary contributor to the community's problems. Under the leadership of several community leaders and the mayor of San Juan, the group developed a "Code of Order" that dealt directly with the alcohol problems, including the sales of alcohol to youth and heavy drinking. The policies in the code included:

- Alcohol merchants must request ID on all alcohol sales.
- Prohibition against selling alcoholic beverages outside of the establishments, including selling them through store windows.
- Prohibition against selling alcoholic beverages from vehicles, coolers or trunks of cars.
- Prohibition against unnecessary or excessive noise.
- Prohibition of drinking alcohol beverages in public places.
- Prohibition of alcohol promotion including "Happy Hour" or reduced alcohol prices.
- Prohibition of signage or banner promoting alcohol.

Violations of each of the policies promoted in the Code of Order have associated fines ranging up to $1,000. The community began a public education campaign to inform visitors and merchants of the new code. After a period of public awareness, law enforcement officials, with the support of both the community and elected officials, increased their operations in Old San Juan and began to give citations to those found violating the Code of Order.

The code went into effect in 1997 and during the first quarter, the police reported 417 criminal activities including violent crime. In the same period in 1999, the police reported 205 criminal incidences. As a result of the initial success, other cities in Puerto Rico adopted similar measures. In Rio Piedras, police reported 2,725 crimes in 1999 when the code was implemented there. In 2000, total crime reported by the police was 2,175, approximately a 20% decrease (Harwood et al, 2004).

VII. References

Anderson, P. and Baumberg, B. (2006) *Alcohol in Europe: A Public Health Perspective*. London: Institute of Alcohol Studies.

Ayres, R. L. (1998) *Crime and Violence as Development Issues in Latin American and the Caribbean.* Washington, DC: The World Bank.

Babor, T., et al. (1978) Experimental Analysis of the 'Happy Hour': Effects of Purchase Price on Alcohol Consumption. *Psychopharmacology.* 58: 35-41.

Babor, T. and Higgins-Biddle, J. (2001) *Brief intervention for hazardous and harmful drinking: A manual for use in primary care.* Geneva: World Health Organization.

Babor, T. et al. (2003) *Alcohol: No ordinary commodity. Research and Public Policy*. New York: Oxford University Press.

Bejarano-Orozco, J. (2005) Alcohol, Gender and Partner Aggression: A Study in the Greater Metropolitan Area of Costa Rica. In: Obot, I.S. and Room. R. Eds. *Alcohol, Gender and Drinking Problems: Perspective from Low and Middle Income Countries.* Geneva: World Health Organization.

Brecklin, L. (2002) The role of perpetrator alcohol use in the injury outcomes of intimate assaults. *Journal of Family Violence, 17*, 185-197.

Borkman, T. et al (1998) An Historical and Developmental Analysis of Social Model Program. *Journal of Substance Abuse Treatment, 15*(1), 7-17.

Breinbauer, C. and Maddaleno, M. (2005) *Youth: Choices and Change. Promoting Healthy Behaviors in Adolescents*. Washington, DC: Pan American Health Organization.

Buvinic, M., Morrison, A., and Shifter, M. (1999) *Violence in Latin American and the Caribbean: A Framework for Action*. Washington, DC: Inter-American Development Bank.

Carlini, E.A. et al. (2002) *I National psychotropic use survey in Brazil: study in the 10 biggest cities in the country, 2001*. São Paulo, Brazil: Centro Brasileiro de Informações Sobre Drogas Psicotrópicas (CEBRID).

Cercone, James A. (1994) *Alcohol-Related Problems as an Obstacle to the Development of Human Capital: Issues and Policy Options*. Washington, DC: The World Bank Technical Paper Number 219.

Chaloupka, F., Grossman M. and Saffer H. (2002) The effects of price on alcohol consumption and alcohol-related problems. *Alcohol Research on Health 26*(1), 22-34.

Cherpital, C. and Borges, G. (2002) Performance of Screening Instruments for Alcohol Problems in the ER: A comparison of Mexican-Americans and Mexicans in Mexico. *The American Journal of Drug and Alcohol Abuse, 26*(4), 683-702.

Chikritzhs, T. and Stockwell, T. (2002) The impact of later trading hours for Australian public houses (hotels) on levels of violence. *Journal of Studies on Alcohol 63*, 591-599.

Clayton, R.R., Cattarello, A. and Walden, K.P. (1991) Sensation seeking as a potential mediating variable for school based prevention intervention: A two year follow-up of DARE. *Health Communication, 3*, 229-239.

Concha-Eastman, A., Espitia, V., Espinosa, R. and Guerrero, R. (2002) La epidemiología de los homicidios en Cali, 1993-1998: seis años de un modelo poblacional (Epidemiology of homicides in Cali, Colombia, 1993-1998: Six years of population-based model). *Pan American Journal of Public Health 12*(4), 230-239.

Dixon, D. and Coffin, P. (1999) Zero Tolerance policing of illegal drug markets. *Drug and Alcohol Review, 18*, 477-486.

Dube, S.R. et al (2001) Growing up with parental alcohol abuse: exposure to childhood abuse, neglect, and household dysfunction. *Child Abuse and Neglect, 25*, 1627-1640.

Edwards, G. et al. (1994) *Alcohol Policy and the Public Good*. Oxford: Oxford University Press, Oxford medical publications, World Health Organization Europe.

Fell, J., Lacey J. and Voas, B. (2004) Sobreity checkpoints: Evidence of effectiveness is strong , but use is limited. *Traffic Injury Prevention, 5*(3), 220-227.

Foxcroft, D.R., et al. (2003) Longer-term primary prevention for alcohol misuse in young people: a systematic review. *Addiction, 94* (4), 397-411.

Graham, K. (1999) *Safer bars: assessing and reducing risks of violence*. Toronto, Canada: Centre for Addiction and Mental Health.

Graham, K. and Homel, R. (1997) Creating safer bars. In: Plant, M., Single, E., and Stockwell, T. eds. *Alcohol: minimizing the harms, 1st ed*. London: Free Association Press.

Graham, K. and Purcell, J. (ND). Preventing Barroom Aggression: A Summary of the Results of the Evaluation of the *Safer Bars* Program. Prevention and Research Center. Accessed online on May 23, 2008 at http://resources.prev.org/documents/layreport0403.doc

Grey, D., Saggers, S., and Sputore, B. (2000) What Works? A review of evaluated

alcohol misuse interventions among Aboriginal Australians. *Addiction 95*, 11-22.

Greenfield, L., (1998) *Violence by Intimates: Analysis of Data on Crime by Current or Former Spouses, boyfriends and girlfriends*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics Factbook.

Grossman, M. and Markowitz, S. (2001) Alcohol Regulation and Violence on College Campuses. In: Grossman, M. and Hsieh CR, Eds. *Economic Analysis of Substance Use and Abuse: The Experience of Developed Countries and Lessons for Developing Countries*. Cheltenham, United Kingdom: Edwin Elgar

Grube, J. (1997) Preventing sales of alcohol to minors: Results from a community trial. *Addiction, 92*(Suppl. 2), S251-S260.

Gruenewald, P. et al. (2006) Ecological models of alcohol outlets and violent assaults: crime potentials and geospatial analysis. *Addiction, 101*(5), 666-677.

Guerrero, R. (2004) *Violence Control at the Municipal Level*. Washington, DC: Inter-American Development Bank.

Harwood, E. et al. (2004) Public Opinion in Puerto Rico on Alcohol Control Policies.

Hispanic Journal of Behavior Sciences, 26(4), 426-445.

Hingson, R., Heeran, T. and Winter, M. (1994) Effects of lower legal blood alcohol limits for young and adult drivers. *Alcohol, Drugs and Driving 10*, 243-252.

Holder, H. (1998) *Alcohol and the community: A systems approach to prevention.* New York: Cambridge University Press.

Homel, R., McIlwain, G. and Carvoth, R. (2001) Creating safer drinking environments. In: Heather, N., Peters, T.J., and Stockwell. T. eds. *International Handbook of Alcohol Dependence and Problems, 1st ed*. London: John Wiley and Sons.

Inter-American Drug Abuse Control Commission. (2003) *Drug Prevalence Survey of Secondary School Students A comparison report of three Caribbean Countries: Barbados, Belize and Guyana*. Washington, DC: Organization of American States.

Inter-American Drug Abuse Control Commission. (2004) *Comparative Report on Nationwide School Surveys in Seven Countries: El Salvador, Guatemala, Nicaragua, Panama, Paraguay, Dominican Republic, and Uruguay 2003*. Washington, DC: Organization of American States.

Inter-American Drug Abuse Control Commission. (2006) *Youth and Drugs in South American Countries: A Public Policy Challenge.* Washington, DC: Organization of American States.

Jernigan, David. (2001) *World Status Report: Alcohol and Young People*. Geneva, Switzerland: World Health Organization.

Kerr-Corrêa, F. et al (2005) Differences in Drinking Patterns between Men and Women in Brazil. In: Obot, I.S. and Room. R. Eds. *Alcohol, Gender and Drinking Problems: Perspective from Low and Middle Income Countries.* Geneva: World Health Organization.

Krug, E. et al., Eds. (2002) *World report on violence and health*. Geneva: World Health Organization.

Kuo, M., et al. (2003) The Marketing of Alcohol to

College Students: The Role of Low Prices and Special Promotions. *American Journal of Preventive Medicine.* 25(3): 1-8.

Kypri, K. et al. (2006) Minimum purchasing age for alcohol and traffic crash injuries among 15 to 19 year-olds in New Zealand. *American Journal of Public Health 96*(1), 126-131.

Lodoño, J.L. and Guerrero, R. (1999) *Violencia en América Latina Epidemiología y Costos*. Washington, DC: Banco Interamericano de Desarrollo.

Martin, S. and Bachman, R. (1997) The relationship of alcohol to injury in assault cases. In: Galanter, M., Ed. *Recent Developments in Alcoholism, Volume 13,* pp. 42-56. New York: Plenum Press.

Mattila, V. et al. (2005) Occurrence of violence and violence-related injuries among 12-18 year-old Finns. *Scandinavian Journal of Public Health, 33*, 207-313.

Moller, L. (2002) Legal restrictions resulted in a reduction of alcohol consumption among young people in Denmark. In: Room, R., ed. *Effects of Nordic Alcohol Policy: What Happens to Drinking and Harm When Alcohol Controls Change?,* pp. 155-166. Helsinki, Finland: Nordic Council for Alcohol and Drug Research.

Moser, C. and Van Bronkhorst, B. (1999) *Youth Violence in Latin America and the Caribbean: Costs, Causes, and Interventions*. Washington, DC: The World Bank

Moser, C. and McIlwaine, C. (2001) *Violence in a post-conflict context: urban poor perceptions from Guatemala*. Washington, DC: The World Bank.

Moyer, A., et al. (2002) Brief interventions for alcohol problems: a meta-analytic review of controlled investigations in treatment-seeking and non-treatment-seeking populations. *Addiction*, 97(3), 279-292.

Munné, M.I. (2005) Social Consequences of Alcohol Consumption in Argentina. In: Obot, I.S. and Room. R. Eds. *Alcohol, Gender and Drinking Problems: Perspective from Low and Middle Income Countries.* Geneva: World Health Organization.

National Highway Traffic Safety Administration (NHTSA). (2006) *Traffic Safety Facts 2004 Data: Young drivers*. Washington, DC: NHTSA's National Center for Statistics and Analysis.

Office of Applied Studies. (2004) *The National Survey on Drug Use and Health (NSDUH): Alcohol Dependence or Abuse and Age at First Use*. Rockville, MD: Substance Abuse and Mental Health Services Administration.

O'Malley , P., and Wagenaar, A. (1991) Effects of minimum drinking age laws on alcohol use, related behaviors and traffic crash involvement among American youth: 1976-1987. *Journal of Studies on Alcohol, 52*, 478-491.

Office of Juvenile Justice and Delinquency Prevention (OJJDP). (1999) *Regulatory Strategies for Preventing Youth Access to Alcohol: Best Practices*. Calverton, MD: Pacific Institute for Research and Evaluation.

Osgood, DW. (1998) *Drugs, Alcohol and Adolescent Violence*. Boulder, CO: Center for the Study and Prevention of Violence.

Pacific Institute for Research and Evaluation (PIRE). (2004) *Prevention of murders in Diadema, Brazil: The influence of new alcohol policies*. Unpublished manuscript.

Perry, C.L. (1996) Project Northland: Outcomes of a community-wide alcohol use prevention program during early adolescence. *American Journal of Public Health, 86*, 956-965.

Preusser, D., Williams, A. and Weinstein, H. (1994) Police underage alcohol sales. *Journal of Safety Research, 25*, 127-133.

Pyne, H., Claeson, M. and Correia, M. (2002) *Gender Dimensions of Alcohol Consumption and Alcohol-Related Problems in Latin America and the Caribbean*. Washington, DC: The World Bank.

Ramirez, JC. et al. (1992) Mujer y Violencia: un hecho cotidiano. *Salud Pública 35*(2), 148-160.

Rehn, N., Room, R. and Edwards, G. (2001) *Alcohol in the European Region –Consumption, Harm and Policies*. Copenhagen: WHO Regional Office for Europe.

Rehm, J. and Montiero, M. (2005) Alcohol consumption and burden of disease in the Americas: implications for alcohol policy. Pan American Journal of Public Health, 18(4/5), 241-248)

Ringwalt, C., Ennett, S.T. and Holt, K.D. (1991) An outcome evaluation of project DARE. *Health Education Research*, 6, 327-337.

Roeper, P., Voas, R., Padilla-Sanchez, L. and Esteban, R. (2000) A long-term community-wide intervention to reduce alcohol-related traffic injuries: Salinas, California. *Drugs: Education, Prevention & Policy, 4*(1), 51-60.

Romero-Mendoza, M., Medina-Mora, M.E., Villatoro, J. and Durand, A. (2005) Alcohol Consumption among Mexican Women: Implications in a Syncretic Culture. In: Obot, I.S. and Room. R. Eds. *Alcohol, Gender and Drinking Problems: Perspective from Low and Middle Income Countries.* Geneva: World Health Organization.

Saltz, R. and Stanghetta, P. (1997) A community-wide responsible beverage service program in three communities: Early findings. *Addiction. 92*(Suppl. 2), S237-S249.

Spunt, B., Brownstein, H., Goldstein, P., Fendrich, M., and Liberty, J. (1995) Drug use by homicide offenders. *Journal of Psychoactive Drugs 27*(2), 125-134.

Toomey, T, et al. (2001) Project ARM: Alcohol Risk Management to Prevent Sales to Underage and Intoxicated Patrons. *Health Education & Behavior*. 28(2): 186-199.

United Nations (UN). (2006) *World Report on Violence Against Children*, Geneva, Switzerland.

Van Hoff, J., Gosselt, J., van Noordenburg, M., and de Jong, M. (2007) Happy hours and other alcohol cash discounts in cafes: prevalence and effects on underage adolescents. Manuscript to be published. Journal of Public Health Policy.

Wagenaar, A. and Holder, H. (1991) Effects of alcoholic beverage server liability on traffic crash injuries. *Alcoholism: Clinical and Experimental Research.* 15(6): 942-947

Walsh, C. MacMillan, H.L. and Jamieson, E. (2003) The relationship between parental substance abuse and child maltreatment: findings form the Ontario Health Supplement. *Child Abuse and Neglect, 27*, 1409-1425.

Wechsler, et al. (2003) Drinking and Driving Among College Students: The Influence of Alcohol-Control Policies. *American Journal of Preventive Medicine* 25(3): 212-218.

Weinsheimer, R. et al. (2005) Severe intimate partner violence and alcohol use among female trauma patients. *Journal of Trauma, 58*, 22-29.

Wiggers, J., et al. (2001) The Linking Project: Pilot Project in the Hunter & Northern Metropolitan Policing Regions of NSW, Final Report. New South Wales, Australia: *Hunter Centre for Health Advancement*.

Wilk, A., Jensen, N. and Havighurst, T. (1997) Meta-analysis of randomized control trials addressing brief intervention in heavy alcohol drinkers. *Journal of General Internal Medicine, 12,* 274-283.

World Health Organization (WHO). (1996) *Violence: a public health priority*. Geneva, Switzerland: World Health Organization.

World Health Organization (WHO) (2001) Global Status report on Alcohol and Young People. Geneva. Mental Health and Substance Dependence Department.

World Health Organization (WHO). (2002a) *World Report on Violence and Health.* Geneva, Switzerland: World Health Organization, Department of Mental Health and Substance Abuse.

World Health Organization (WHO). (2002b) *A Summary of Alcohol in Developing Societies: A Public Health Approach*. Geneva, Switzerland: World Health Organization,

World Health Organization (WHO). (2004a) *Global Status Report on Alcohol 2004*. Geneva, Switzerland: World Health Organization, Department of Mental Health and Substance Abuse.

World Health Organization (WHO). (2004b) *Global Status Report: Alcohol Policy*. Geneva, Switzerland: World Health Organization, Department of Mental Health and Substance Abuse.

World Health Organization (WHO). (2006a) *Youth Violence and Alcohol Fact Sheet*. Geneva, Switzerland: World Health Organization, Department of Mental Health and Substance Abuse.

Organización Mundial de la Salud (OMS). (2006b) *Violencia interpersonal y alcohol* Ginebra, Suiza: Organización Mundial de la Salud, el Departamento de Salud Mental y Abuso de sustancias psicotrópicas.

Organización Mundial de la Salud (OMS). (2006c) *Maltrato de niños y nota descriptiva de alcohol* Ginebra, Suiza: Organización Mundial de la Salud, el Departamento de Salud Mental y Abuso de sustancias psicotrópicas.

York, J., Welte, J., Hirsch, J., Hoffman, J. y Barnes, G. (2004) la Asociación de edad a primera bebida con variables de consumición de bebidas alcohólicas actuales en una población general nacional muestra. *Alcoholismo: Investigación clínica y experimental 28* (9), 1379-1387.