



World Health Organization Youth Violence and Alcohol Fact Sheet

Harmful and hazardous¹ alcohol use are risk factors both for being victimized and perpetrating youth violence.² Youth violence takes many forms including bullying, gang violence, sexual aggression, and assaults occurring in streets, bars and nightclubs. The victims and perpetrators alike are young people, and the consequences of youth violence can be devastating. Across the world an average of 565 young people aged 10 to 29 die every day through interpersonal violence, with males at greater risk, and for each death there are an estimated 20 to 40 youth that require hospital treatment for a violence-related injury (1). The impact of youth violence reaches all sectors of society, placing huge strains on public services and damaging communities. Reducing harmful alcohol use and violence among young people should thus be considered a priority for policy makers and practitioners across a broad range of agencies, with public health professionals having a key role in leading partnerships and prevention. This fact sheet summarizes the role of alcohol in youth violence, the magnitude of the problem, risk factors for involvement in alcohol-related youth violence, prevention measures and the role of public health.

Links between alcohol and violence affecting young people

- Alcohol use directly affects cognitive and physical function. Hazardous alcohol use can reduce self-control and the ability to process incoming information and assess risks, and can increase emotional lability and impulsivity, to make certain drinkers more likely to resort to violence in confrontation (2,3). Similarly, reduced physical control and ability to recognize warning signs in potentially dangerous situations can make some drinkers easy targets for perpetrators (4,5).
- Individual and societal beliefs about the effects of alcohol (e.g. increased confidence, increased aggression) can mean that alcohol is consumed as preparation for involvement in violence (6).
- Experiencing or witnessing violence can lead to the harmful use of alcohol as a way of coping or self-medicating (7).
- Uncomfortable, crowded and poorly managed drinking venues contribute to increased aggression among drinkers (8,9).
- Alcohol and violence may be related through a common risk factor (e.g. anti-social personality disorder) that contributes to the risk of both heavy drinking and violent behaviour (10,11).
- Alcohol and violence can be linked ritualistically as part of youth gang cultures (see Box 1).
- Hazardous and harmful levels of alcohol use are key risk factors for intimate partner violence (12), which can feature in relationships between young people (13).

¹ Harmful use of alcohol is defined as a pattern of alcohol use that causes damage to health. Hazardous alcohol use is defined as a pattern of alcohol use that increases the risk of harmful consequences for the user (World Health Organization, http://www.who.int/substance_abuse/terminology/who_lexicon/en/).

² Following the *World report on violence and health* (1) youth are defined as young people aged 10-29.

- Prenatal alcohol exposure (resulting in fetal alcohol syndrome or fetal alcohol effects) is associated with behavioural and social problems, including delinquent behaviour (14).

Box 1: Gang violence

Youth gangs exist throughout the world and are frequently associated with violence. In Bremen (Germany), for example, youth gangs commit almost half of all police-reported violent offences (1). While most gangs comprise young males, for both sexes gang involvement is associated with higher levels of violence and alcohol use (e.g. Caribbean countries [15]). Qualitative research in the US found alcohol to be a central part of gang culture and to be strongly linked to violence. For example, fights between gang members erupted after drinking; alcohol was used prior to fights to build confidence; alcohol use occurred after fights as a seal of gang unity, and alcohol and violence were linked ritualistically during gang initiation processes (6).

Magnitude of alcohol-related youth violence

At a global level, uniform data for cross-national comparisons of youth alcohol consumption are scarce. However, a range of international and regional surveys (e.g. World Health Survey [16], WHO global school-based student health survey [17], the European Schools Survey on Alcohol and Other Drugs [18]) show levels and patterns of alcohol consumption vary widely between countries. Thus, the World Health Survey shows abstinence rates among 18-24 year olds to range from 6.7% in Latvia to 98.6% in the Comoros, with the percentage of heavy episodic drinkers³ ranging from 0.2% in Lebanon and Malaysia to 20.1% in the Czech Republic (16). Particularly in the WHO European Region and the WHO Region of the Americas, young adults (aged 18-24) are more likely to engage in heavy episodic drinking than the general adult population (e.g. Brazil, Czech Republic, Spain, Dominican Republic[16]). Increasing consumption among young people elsewhere (e.g. Israel [19], Philippines [20]) is raising concerns that a youth culture of excessive drinking is spreading internationally. Further, while in most countries heavy episodic drinking is more common in males, alcohol consumption in females is increasing and in some countries heavy episodic drinking is now reported more by girls than boys (e.g. Australia, age 14-19; Lithuania, age 15-16 [16]).

Levels of youth violence also vary widely between countries. Mortality rates from homicide among 10-29 year olds range from 84.4 per 100 000 population (156.3 for males and 11.9 for females) in Colombia to less than 1 per 100 000 (males and females) in Japan and France (1). Globally, across all age groups, alcohol is estimated to be responsible for 26% and 16% of years of life lost through homicide by males and females respectively⁴. This ranges from 18% for males and 12% for females in high mortality developing countries⁵ (where there is high mortality from other causes such as disease and famine) to 41% and 32% respectively in developed countries⁶ (16). While non-fatal violence is more difficult to measure cross-nationally, studies conducted in numerous countries identify links between non-fatal youth violence and harmful alcohol consumption by both perpetrators and victims. Findings include:

³ Heavy episodic drinking is defined as: consumption of six or more drinks in one sitting at least once a week for Lebanon; consumption of five or more drinks in one sitting at least once a week for Malaysia and Czech Republic.

⁴ based on disability-adjusted life years (DALYs)(16).

⁵ WHO regional sub grouping codes AFR-D, AFR-E, AMR-D, EMR-D, SEAR-D (see World Health Report 2002, available from: <http://www.who.int/whr/2000/en/index.html>).

⁶ WHO regional sub grouping codes AMR-A, EUR-A, EUR-B, EUR-C, WPR-A.

- 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 (21).
- In Finland, 45% of all violent incidents reported by 12-18 year olds involved drinking by the perpetrator and/or victim (22).
- In the Philippines, where 14% of 15-24 year olds reported physically hurting someone through violence in the previous three months, such violence was significantly associated with drinking (20).
- In England and Wales, 18-24 year olds 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, than regular but non-binge drinkers (23).
- Among 10-18 year olds participating in the Caribbean Youth Health Survey⁷, having used alcohol in the last year was significantly associated with weapon-related violence for both males and females (15).
- In a community sample of 18-30 year olds in the United States of America, almost 25% of men and 12% of women had experienced violence or aggression in or around a licenced bar during the previous year (24).

Risk factors for alcohol-related youth violence

A wide range of factors have been identified that increase young people's risks of becoming both victims and perpetrators of youth violence (see Box 2). While alcohol use is itself a risk factor for involvement in youth violence, many studies (mostly in developed countries) have specifically examined alcohol-related violence and its associated risk factors.

Males are more likely than females to be both perpetrators and victims of alcohol-related youth violence (23,25). However, in some countries harmful alcohol consumption has been associated with disproportionate increases in levels of violent behaviour among girls (e.g. Israel [21], Caribbean countries [15]), despite their overall levels of alcohol and violence being generally lower than male counterparts. Within the youth age category, levels of alcohol-involvement in violence increase with age throughout adolescence (e.g. Finland [22]), with recent experience of alcohol-related violence peaking within the late teenage years and

Box 2: Risk factors for youth violence

Individual factors

- Male
- Delivery complications at birth
- Personality and behaviour disorders
- Low intelligence/academic achievement
- Impulsiveness and attention problems
- Alcohol use

Relationship factors

- Poor parental supervision
- Harsh parental physical punishment
- Parental conflict
- Large number of children in the family
- Young age of mother (e.g. teenager)
- Poor family cohesion
- Single parent household
- Low socio-economic status of family
- Having delinquent friends

Community and societal factors

- Presence of gangs, guns and drugs
- Poor social integration/low social capital
- Rapid demographic change in youth populations
- Modernisation and urbanisation
- Income inequality
- Weak governance
- Culture supportive of violence

Krug et al. 2002 (1)

⁷ Participating countries: Antigua and Barbuda; the Commonwealth of the Bahamas; Barbados; British Virgin Islands; the Commonwealth of Dominica; Grenada; the Republic of Guyana; Jamaica, and Saint Lucia.

early twenties (16-19 year olds in England and Wales [26], 20-24 year olds in Australia [27]). Other factors that have been associated with increased risk of involvement in alcohol-related violence include low educational attainment (28), low college expectations (29), emotional distress in adolescence (30), involvement in other forms of anti-social behaviour, having delinquent (23) or alcohol-drinking (31) peers, and high levels of aggression-facilitating personality characteristics (e.g. hostility and anger) (32).

Associations between alcohol and violence can also vary within societies by ethnicity. In the United States stronger links have been found between alcohol and fighting among Mexican-American youths than non-Hispanic White youths (33). In Israel, the relationship between alcohol consumption and being a perpetrator of bullying is stronger among Jewish youths, yet the relationship between alcohol and both being injured in a fight and carrying weapons is greater among Arab youths (21).

Levels of alcohol consumption among young people are strongly related to their risk of violence, with those who start drinking at an earlier age, drink frequently and drink large quantities at increased risk of being both perpetrators and victims (29,34,35,36). Research among schoolchildren in Switzerland found that having been drunk more than once was positively associated with perpetration of bullying and violence, yet reduced the risks of being a victim of bullying, particularly amongst socially integrated individuals (37).

Risks of committing alcohol-related violence are also affected by societal and individual beliefs about the effects of alcohol. Stronger links between alcohol and violence are seen in societies where alcohol is less integrated into daily life (38) and in individuals who expect alcohol to increase aggression (32). Much alcohol-related violence occurs at night, particularly at weekends (39), and often takes place in and around drinking venues (Box 3). Venue characteristics associated with a greater likelihood of violent behaviour include: low comfort levels (e.g. crowded, lacking seating and ventilation, hot and noisy); unattractive and poorly maintained premises; offer discounted alcoholic drinks; employ aggressive door supervisors; have a high proportion of intoxicated patrons, and have a permissive attitude towards anti-social behaviour (e.g. serving underage or drunk customers and allowing swearing and overt sexual activity) (8, 40, 41). Greater concentration of drinking establishments in an area is also associated with increased prevalence of violence (42).

Box 3: Alcohol and youth violence in bars

Qualitative studies have found that alcohol-related violence in bars and clubs is often reactive, triggered by events such as a spilt drink or an advance by one person towards another's sexual partner (43,44). Young men explain their aggressive responses to these events as necessary for defending their honour and retaining the respect of their peers; however fighting for fun is also a common reason given for initiating violence (45). Among young males participating in such violence, alcohol is believed to facilitate aggression by increasing confidence and willingness to take risks, making people more aroused and emotional, and reducing their ability to consider the consequences of their behaviour (44,45).

Impact

The consequences of youth violence are far reaching, affecting the health and well being of victims, relationships with family and friends, levels of fear within communities, and pressure on health and other public services. For victims, alcohol-

related violence can be more likely to result in physical injury (22), with alcohol consumption often leading to more severe injury (46). In Wales, 72% of assault patients presenting at an Accident and Emergency department at weekend nights had some form of facial injury (47), while across the United Kingdom 8% of facial injuries sustained in assaults were inflicted with the paraphernalia of alcohol use (i.e. the use of glasses and bottles as weapons [46]). Such injuries can cause permanent scarring and emotional and psychological trauma (48). Further, victims of violence during adolescence report higher levels of alcohol consumption in later life (7). For perpetrators of alcohol-related violence, judicial penalties can also affect future prospects in terms of education and employment (49).

Health and criminal justice surveys frequently show young people to account for the largest proportion of treatment demands and criminal justice responses for alcohol-related violence (e.g. Norway [50], the USA [51]), with substantial economic costs. In the United States, the costs of violent crime related to harmful alcohol use among youth were estimated at US\$29 billion in 1996 (1998 prices [52]). In England and Wales, violent crime is estimated to cost £24.4 billion annually (approximately US\$44 billion; including medical treatment, criminal justice, lost earnings and physical and emotional costs to victims [53]). Half of this violence is alcohol-related and half is committed by youths aged 16-24 (54).

Prevention

A range of prevention programmes targeting parents and children from infancy to adolescence have shown success in reducing youth violence, with most research conducted in high-income countries. Such programmes include: pre- and post-natal services; home visiting during infancy; parenting skills training; social development training for children, adolescents and gang members, and family therapy (1). In at least some cases (e.g. home visiting [55]), such programmes can also reduce future levels of alcohol consumption among young people.

Specifically for alcohol-related violence, interventions addressing access to alcohol can reduce both consumption levels and violence. Research in the United States indicates that increased alcohol prices through higher taxation can reduce the frequency of drinking and the chance of heavy alcohol consumption among young people (56). In the United States it has also been estimated that a ten percent increase in beer price would reduce the number of college students involved in violence by 4% (57). In Brazil (Diadema) the prohibition of alcohol sales after 23:00 helped prevent an estimated 273 murders (all ages) over a two year period (58); in Australia, extended licensing hours in public houses were associated with increased alcohol consumption and violence (59).

Legislation on the minimum legal age of alcohol purchase can reduce access to alcohol for young people, and where such laws exist minimum ages range from 15 (e.g. the Republic of Slovenia) to 21 (e.g. the United States). While illegal underage sales can be common (60), they can be reduced through server training programmes and strict enforcement of age of purchase legislation (61) (e.g. test purchasing and penalties including license revocation). Few studies have measured the effectiveness of such interventions on violence and most research has been conducted in the United States. Restricting access to alcohol for underage youths in parts of the United States reduced disorderly conduct violations among 15-17 year olds (62).

Research in the United States has also found some evidence that programmes which alter social norms (i.e. correct misperceptions of peer drinking habits) can reduce harmful alcohol consumption levels among college students (63), and thus may be useful in reducing alcohol-related violence. At the individual level, alcohol consumption among those at risk of alcohol-related violence can be reduced through brief interventions. One intervention targeted at young males with alcohol-related facial injuries in an oral and maxillofacial surgery department resulted in significant reductions in consumption (65). Further, brief interventions delivered to male violent offenders in a criminal justice setting (magistrates' court), reduced participants' risks of injury through assault in the following year (as measured Accident and Emergency Department presentations) yet had no effect on re-offending (66).

Modifying drinking settings can also impact alcohol-related youth violence. For example, improving management and staff practice through training programmes (67), implementing codes of good practice, and strictly enforcing licencing legislation (68) creates environments less conducive to violence. In wider nighttime environments, the presence of large numbers of intoxicated individuals at the end of the night increases potential for violent confrontations (69). Here interventions such as provision of safe late-night transport (68), improvements to street lighting (70) and use of closed circuit television (71) have been shown to help reduce alcohol-related violence around licenced premises. Judicial interventions can also be used to deter individuals from anti-social behaviour, such as the use of fines for low-level alcohol-related offences (e.g. public drunkenness) and banning orders preventing offenders of alcohol-related aggression accessing drinking venues. However the effectiveness of such interventions has not been fully assessed.

Box 4: Multi-component programmes

The DESEPAZ programme in Colombia

In response to increasing levels of violence in the city of Cali, the Mayor led the development of the DESEPAZ programme, comprising a partnership of demobilized guerrillas, labour union representatives, church members and private sector leaders. This involved the development of an accurate information system for measuring violence and a wide range of measures to: improve law enforcement (including education and training for police); increase communication between citizens and law enforcement agencies; and improve education and employment for residents and particularly high-risk youths. Recognising the important role of alcohol in violence, alcohol sales were restricted with closing times imposed on bars and nightclubs. Both hospitals and traffic authorities reported reductions in injuries following this intervention (72).

The Queensland Safety Action Projects in Australia

The Safety Action Projects targeted aggression and violence in nightclubs and nightlife areas in three Australian cities (Cairns, Townsville and Mackay). The projects focused resources at three levels: improving state regulation; developing a mechanism for community support of regulation, and facilitating self-regulation among bar and club management. Interventions within this included strict enforcement of legislation by licencing authorities and police; development of community forums and task forces regarding nightlife issues; conducting risk assessments at drinking venues, and implementing codes of practice. The intervention led to observed reductions in arguments (28%), verbal abuse (60%) and threats (41%) in drinking premises. The changes within drinking venues that were most associated with reductions were: improved comfort (e.g. availability of seating), increased public transport, less overt sexual activity and fewer highly drunk men (68).

Interventions that involve collaboration between different sectors and groups to implement an integrated package of prevention measures have successfully reduced

alcohol-related violence in both high-income and low- to middle-income countries (Box 4). In some low- and middle-income countries, single-sector interventions such as legislation on the legal minimum age for purchase of alcohol, and efforts to strengthen and expand the licencing of liquor outlets could be of great value in reducing alcohol-related youth violence. For example, there is no legal minimum age of sale for alcohol in the People's Republic of China or the Republic of Gambia, and in the Republic of South Africa it is estimated that 80-90% of liquor outlets are unlicensed. Further, in many low- to middle-income societies a large proportion of alcohol consumed is produced at home, meaning strategies to increase alcohol price may be less effective and may switch drinkers to cheaper home produce (74). More research is needed in low- to middle-income countries to identify successful interventions for tackling alcohol-related violence and to examine opportunities to regulate production and sale.

The role of public health

The public health approach to violence prevention uses a wide range of data and research to provide a better understanding of the extent, causes and risks of violence and to implement effective interventions through collective action. For alcohol-related youth violence, priorities for public health include:

- Collecting and collating information on the levels and patterns of youth drinking, incidence of youth violence, and the involvement of alcohol in such violence.
- Promoting, conducting and evaluating research on the links between youth violence and alcohol consumption by both victims and perpetrators. This should improve understanding of the extent of the problem as well as risk and protective factors. Such research is particularly needed in low- to middle-income countries.
- Measuring and disseminating information on the health, economic and wider associated sociological costs of harmful use alcohol and violence.
- Developing, evaluating and widely implementing interventions that show promise in prevention.
- Promoting multi-agency partnerships to tackle youth violence by raising awareness of the links between the harmful use of alcohol and violence, the cyclical nature of violence and associated alcohol use, impacts on society and effective and cost-effective interventions.
- Advocating for whole systems approaches to alcohol and violence education in schools that incorporate parents, local services and communities.
- Advocating for policies to limit access to alcohol, age of initiation to alcohol, hazardous drinking and associated harms among young people.

Policy

Both the harmful and hazardous use of alcohol and violence have been recognized internationally as key public health issues requiring urgent attention. At both national and international levels, health organizations have a key role in advocating for policies that address the relationships between alcohol use and violence and in doing so promote prevention initiatives that will improve public health. The World Health Organization (WHO) runs comprehensive programmes on both issues to instigate and conduct research, identify effective prevention measures, and promote action by Member States to implement successful interventions and align policy towards reducing hazardous and harmful drinking and violence.

For alcohol, this includes collating and disseminating scientific information on alcohol consumption, developing global and regional research and policy initiatives on alcohol, supporting countries in increasing national capacity for monitoring alcohol consumption and related harm, and promoting prevention, early identification and management of alcohol use disorders in primary health care (75). A World Health Assembly resolution on *Public health problems caused by harmful use of alcohol* (WHA58.26 [76]) of 2005 recognizes the health and social consequences associated with harmful alcohol use and requests Member States to develop, implement and evaluate effective strategies for reducing such harms, while calling on WHO to provide support to Member States in monitoring alcohol-related harm, implementing and evaluating effective strategies and programmes, and to reinforce the scientific evidence on effectiveness of policies.

For violence, this includes the WHO Global Campaign for Violence Prevention. Launched in 2002, the Campaign aims to raise international awareness about the problem of violence (including youth violence), highlight the role of public health in its prevention, and increase violence prevention activities globally, regionally and nationally. The approach to preventing violence is set out in the WHO *World report on violence and health* (1). World Health Assembly resolution WHA56.24 (77) of 2003 encourages Member States to implement the recommendations set out in the report, and calls on the Secretariat to cooperate with Member States in establishing science-based public health policies and programmes for the implementation of measures to prevent violence and to mitigate its consequences. Complementary to this, the Violence Prevention Alliance has been established to provide a forum for the exchange of best practice information between governments and other agencies working to reduce violence around the world.

For further information please consult:

http://www.who.int/violence_injury_prevention

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References

- (1) Krug EG et al., eds. *World report on violence and health*. Geneva, World Health Organization, 2002.
- (2) Room R et al. Alcohol and public health. *Lancet*, 2005, 365:519-530.
- (3) Graham K. Social drinking and aggression. In: Mattson MP, ed. *Neurobiology of aggression: understanding and preventing violence*, 1st ed. Totowa, New Jersey, Humana Press, 2003:253-274.
- (4) Abbey A et al. Alcohol and sexual assault. *Alcohol Research & Health*, 2001, 25:43-51.
- (5) Testa M, Livingston JA, Collins RL. The role of women's alcohol consumption in evaluation of vulnerability to sexual aggression. *Experimental and Clinical Psychopharmacology*, 2000, 8:185-191.
- (6) Hunt GP, Laidler KJ. Alcohol and violence in the lives of gang members. *Alcohol Research & Health*, 2001, 25:66-71.
- (7) Kaukinen C. Adolescent victimization and problem drinking. *Violence and Victims*, 2002, 17:669-689.
- (8) Graham K et al. Aggression and barroom environments. *Journal of Studies on Alcohol*, 1980, 41:277-292.
- (9) Homel R, Clark J. The prediction and prevention of violence in pubs and clubs. *Crime Prevention Studies*, 1994, 3:1-46.
- (10) Moeller FG, Dougherty DM. Antisocial personality disorder, alcohol and aggression. *Alcohol Research & Health*, 2001, 25:5-11.
- (11) White HR, Brick J, Hansell S. A longitudinal investigation of alcohol use and aggression in adolescence. *Journal of Studies on Alcohol Supplement*, 1993, 11:62-77.
- (12) World Health Organization. *Alcohol and intimate partner violence fact sheet*. Geneva, World Health Organization, 2005.
- (13) Wood K, Jewkes R. Violence, rape, and sexual coercion: everyday love in a South African township. *Gender and Development*, 1997, 5:41-46.
- (14) Kelly SJ et al. Effects of prenatal alcohol exposure on social behaviour in humans and other species. *Neurotoxicology and Teratology*, 2000, 22:143-149.
- (15) Ohene S et al. The clustering of risk behaviors among Caribbean youth. *Maternal and Child Health Journal*, 2005, 9:91-100.
- (16) World Health Organization. *WHO global status report on alcohol 2004*. Geneva, World Health Organization, 2004.
- (17) *Global school-based student health survey (GSHS)*. Geneva, World Health Organization and the United States Centers for Disease Prevention and Control, (http://www.who.int/school_youth_health/assessment/gshs/en/. html, accessed 2 February 2006).
- (18) Hibell B et al. *The ESPAD report 2003: alcohol and other drug use among students in 25 European countries*. Stockholm, The Swedish Council for Information on Alcohol and Other Drugs (CAN), 2004.
- (19) Weiss S. Review of drinking patterns of rural Arab and Jewish youth in the North of Israel. *Substance Use & Misuse*, 2002, 37:663-686.
- (20) Raymundo CM, Cruz GT. *Dangerous connections: substance abuse, violence and sex among Filipino adolescents*. Paper presented at the 7th International Conference on Philippine Studies, Netherlands, June 16th-19th, 2004. Available at: <http://yafs.com/papers.asp>.

- (21) Molcho M, Harel Y, Dina LO. Substance use and youth violence. A study among 6th to 10th grade Israeli school children. *International Journal of Adolescent Medicine and Health*, 2004, 16:239-251.
- (22) Mattila VM et al. Occurrence of violence and violence-related injuries among 12-18 year-old Finns. *Scandinavian Journal of Public Health*, 2005, 33:307-313.
- (23) Matthews S, Richardson A. *Findings from the 2003 Offending, Crime and Justice Survey: alcohol-related crime and disorder*. Findings 261. London: Home Office, 2005.
- (24) Leonard KE, Quigley BM, Collins RL. Physical aggression in the lives of young adults: prevalence, location and severity among college and community samples. *Journal of Interpersonal Violence*, 2002, 17:533-550.
- (25) Matthews S et al. Trends in alcohol-related violence in Australia, 1991/2-1999/00. *National Alcohol Indicators Bulletin 5*. Perth: National Drug Research Institute, 2002.
- (26) Budd T. *Alcohol-related assault: findings from the British Crime Survey*. Home Office online report 35/03. London: Home Office, 2003.
- (27) *Alcohol-related assault: time and place*. Canberra, Australian Institute of Criminology, 2000 (Trends and issues in crime and criminal justice, No. 169).
- (28) *Drinking, crime and disorder*. Londong, Home Office, 2003 (Findings No. 185).
- (29) Swahn MH, Donovan JE. Predictors of fighting attributed to alcohol use among adolescent drinkers. *Addictive Behaviors*, 2005, 30:1317-1334.
- (30) Tschann JM et al. Emotional distress, alcohol use, and peer violence among Mexican American and European-American adolescents. *Journal of Adolescent Health*, 2005, 37:11-18.
- (31) Bonomo Y et al. Adverse outcomes of alcohol use in adolescents. *Addiction*, 2001, 96:1485-1496.
- (32) Leonard KE, Quigley BM, Collins RL. Drinking, personality, and bar environmental characteristics as predictors of involvement in barroom aggression. *Addictive Behaviors*, 2003,28: 1681-1700.
- (33) Grunbaum JA, Basen-Engquist K, Pandey D. Association between violent behaviors and substance use among Mexican-American and Non-Hispanic White high school students. *Journal of Adolescent Health*, 1998, 23:153-159.
- (34) Swahn MH et al. Alcohol-consumption behaviors and risk for physical fighting and injuries among adolescent drinkers. *Addictive Behaviors*, 2004, 29:959-963.
- (35) Choquet M, Menke H, Manfredi R. Interpersonal aggressive behaviour and alcohol consumption among young urban adolescents in France. *Alcohol & Alcoholism*, 1991, 26:381-390.
- (36) Harrison LD et al. The drugs-violence nexus among American and Canadian youth. *Substance Use & Misuse*, 2001, 36:2065-2086.
- (37) Kuntsche EN, Gmel G. Emotional wellbeing and violence among social and solitary risky single occasion drinkers in adolescence. *Addiction*, 2004, 98:331-339.
- (38) Cherpitel CJ, Ye Y and Bond J. Attributable risk of injury associated with alcohol use: cross-national data from the emergency room collaborative alcohol analysis project. *American Journal of Public Health*, 2005, 92:266-272.
- (39) Ireland CS, Thommeny JL. The crime cocktail: licensed premises, alcohol and street offences. *Drug and Alcohol Review*, 1993, 12:143-150.
- (40) Homel R, McIlwain G, Carvoth R. Creating safer drinking environments. In: Heather N, Peters TJ, Stockwell T, eds. *International Handbook of Alcohol Dependence and Problems*, 1st ed. London, John Wiley and Sons, 2001:721-740.

- (41) Graham K, Homel R. Creating safer bars. In: Plant M, Single E, Stockwell T, eds. *Alcohol: minimizing the harm*, 1st ed. London, Free Association Press, 1997:171-192.
- (42) Norstrom T. Outlet density and criminal violence in Norway, 1960-1995. *Journal of Studies on Alcohol*, 2000, 61:907-11.
- (43) Tryggvesson K. The ambiguous excuse: attributing violence to intoxication – young Swedes about the excuse value of alcohol. *Contemporary Drug Problems*, 2004, 31:231-261.
- (44) Benson D, Archer J. An ethnographic study of sources of conflict between young men in the context of the night out. *Psychology, Evolution and Gender*, 2002, 4:3-30.
- (45) Graham K, Wells S. ‘Somebody’s gonna get their head kicked in tonight!’: aggression among young males in bars – a question of values. *British Journal of Criminology*, 2003, 43:546-566.
- (46) Hutchison IL et al. The BAOMS United Kingdom survey of facial injuries part 1: aetiology and the association with alcohol consumption. *British Journal of Oral and Maxillofacial Surgery*, 1998, 36:3-13.
- (47) Shepherd J, Brickley M. The relationship between alcohol intoxication, stressors and injury in urban violence. *British Journal of Criminology*, 1996, 36:546-566.
- (48) Magennis P et al. Trends in facial injury. *British Medical Journal*, 1998, 316:325-326.
- (49) Holzer et al. *Urban dimensions of reentry: understanding the nexus between prisoner reentry and work: employment barriers facing ex-offenders*. New York, New York University Law School, 2003.
- (50) Steen K, Hunskaar S. Violence in an urban community from the perspective of an accident and emergency department: a two-year prospective study. *Medical Science Monitor*, 2004, 10:CR75-79.
- (51) McClelland GM, Teplin LA. Alcohol intoxication and violent crime: implications for public health policy. *The American Journal on Addictions*, 2001, 10(Suppl):70-85.
- (52) Levy DT et al. Underage drinking: immediate consequences and their costs. Pacific Institute for Research and Evaluation working paper. Calverton, Pacific Institute for Research and Evaluation, 1999.
- (53) *The economic and social costs of crimes against individuals and households 2003/4*. London, Home Office, 2005 (<http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr3005.pdf.html>, accessed 21 August 2002).
- (54) Dodd T et al. *Crime in England and Wales 2003/4: supplementary tables: nature of burglary, vehicle and violent crime*. London, Home Office, 2004.
- (55) Olds D et al. Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow-up of a randomized controlled trial. *Journal of the American Medical Association*, 1998, 280:1238-1244.
- (56) Laixuthai A, Chaloupka FJ. Youth alcohol and public policy. *Contemporary Policy Issues*, 1993, 11:70-81.
- (57) Grossman M, Markowitz S. Alcohol Regulation and Violence on College Campuses. In: Grossman M, Hsieh CR, eds. *The economic analysis of substance use and abuse: the experience of developed countries and lessons for developing countries*, 1st ed. Cheltenham, Edward Elgar Limited, 2001.
- (58) *The prevention of murders in Diadema, Brazil: The influence of new alcohol policies*. Calverton, MD, Pacific Institute for Research and Evaluation, 2004

- (http://resources.prev.org/resource_pub_brazil.pdf. html, accessed 10 October 2005).
- (59) Chikritzhs T, Stockwell T. The impact of later trading hours for Australian public houses (hotels) on levels of violence. *Journal of Studies on Alcohol*, 2002, 63:591-599.
 - (60) Willner P et al. Alcohol sales to underage adolescents: an unobtrusive observational field study and evaluation of a police intervention. *Addiction*, 2000, 95:1373-1388.
 - (61) Grube JW. Preventing sales of alcohol to minors: results from a community trial. *Addiction*, 1997, 92(Suppl 2):S251-S260.
 - (62) Wagenaar AC, Murray DM, Toomey TL. Communities mobilizing for change on alcohol (CMCA): effects of a randomized trial on arrests and traffic crashes. *Addiction*, 2000, 95:209-217.
 - (63) Mattern JL, Neighbors C. Social norms campaigns: examining the relationship between changes in perceived norms and changes in drinking levels. *Journal of Studies on Alcohol*, 2004, 65:489-93.
 - (64) Steffian G. Correction of normative misperceptions: an alcohol abuse prevention program. *Journal of Drug Education*, 1999, 29:115-38.
 - (65) Smith AJ et al. A randomized controlled trial of a brief intervention after alcohol-related facial injury. *Addiction*, 2003, 98:43-52.
 - (66) Watt K, Shepherd J. *A randomised controlled trial of a brief alcohol intervention for violent offenders in a magistrates' court*. Cardiff, Violence Research Group, Cardiff University, 2005.
 - (67) Graham K et al. The effect of the Safer Bars programme on physical aggression in bars: results of a randomized controlled trial. *Drug and Alcohol Review*, 2004, 23:31-41.
 - (68) Homel R et al. Making licensed venues safer for patrons: what environmental factors should be the focus of interventions? *Drug and Alcohol Review*, 2004, 23:19-29.
 - (69) Bellis MA et al (2004). Violence in general places of entertainment. In: Pompidou Group, ed. *Violence and insecurity related to the consumption of psychoactive substances*. Strasbourg, Council of Europe, 2004.
 - (70) Farrington DP, Welsh BC. *Effects of improved street lighting on crime: a systematic review*. Home Office Research Study 251. London, Home Office, 2002.
 - (71) Sivarajasingam V, Shepherd JP, Matthews K. Effect of urban closed circuit television on assault injury and violence detection. *Injury Prevention*, 2003, 9:312-6.
 - (72) Guerrero R, Concha-Eastman A. An epidemiological approach for the prevention of urban violence: the case of Cali, Colombia. *World Health and Population*, 4.
 - (73) Parry C, Dewing S. A public health approach to addressing alcohol-related crime in South Africa. *African Journal of Drug and Alcohol Studies*. In Press.
 - (74) Room R et al. *Alcohol in developing societies: a public health approach*. Helsinki and Geneva, Finnish Foundation for Alcohol Studies and World Health Organization, 2003.
 - (75) World Health Organization. *Public health problems caused by harmful use of alcohol: report by the Secretariat*. Geneva, World Health Organization, Geneva, 2005.
 - (76) Resolution WHA58.26. Public-health problems caused by harmful use of alcohol. In: Fifty-eighth World Health Assembly, Geneva, 16-25 May 2005. *Resolutions*,

decisions and annexes. Geneva, World Health Organization, 2005. (WHA58/2005/REC/1).

- (77) Resolution WHA56.24. Implementing the recommendations of the World report on violence and health. In: Fifty-sixth World Health Assembly, Geneva, 19-28 May 2003. *Resolutions, decisions and annexes*. Geneva, World Health Organization, 2003. (WHA56/2003/REC/1).