

**Mental Health and Wellbeing Unit**  
Victorian Health Promotion Foundation



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**VicHealth Review of Links between and  
Interventions to reduce Alcohol-related  
Interpersonal Violence: an evidence-based  
comprehensive literature review**

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## **Contents**

Contents .....	3
Summary of key findings .....	4
Introduction .....	9
Background.....	10
What is interpersonal violence? .....	12
Is there a link between alcohol and interpersonal violence? .....	12
Explanatory factors .....	13
What pattern of alcohol use causes the most harm? .....	14
Patterns of alcohol consumption and attributable violence in Australia and Victoria .....	16
Risk factors .....	19
Settings .....	22
Alcohol and intimate partner violence .....	25
Alcohol, rape and sexual assault .....	28
Summary.....	31
What can be done to prevent or reduce alcohol-related interpersonal violence? .....	33
Universal interventions.....	35
Targeted early intervention .....	40
Targeted adult interventions.....	43
Targeted strategies to vulnerable populations .....	44
Interventions to reduce specific alcohol-related intimate partner violence (IPV) or sexual assault.....	46
Summary and conclusion.....	48
References.....	50
Tabulation of key recommended articles on the links between alcohol and violence .....	56
Tabulation of key reviews/intervention studies.....	59
Appendix 1. Methodology.....	62
Appendix 2. Useful Websites .....	66

## **Summary of key findings**

This study found strong evidence and explanations for the link between alcohol misuse and interpersonal violence. However, the review revealed that too few intervention studies include alcohol-related interpersonal violence as outcomes, whether the studies were alcohol or interpersonal violence focused. We outline the summarised findings below.

### ***Is there a link between alcohol and interpersonal violence?***

- Alcohol is neither a necessary nor sufficient cause of interpersonal violence, but there is a strong association between the two
- Alcohol is associated more strongly with male perpetration than female victimisation
- 22% of aggression has been reliably attributed to alcohol misuse with 50% of male aggression attributed to alcohol, but only 13% of female aggression
- The strong association between alcohol and interpersonal violence can be explained by the interactions between:
  - cultural and individual expectations about alcohol effect
  - the physiological effects of alcohol
  - individual temperament, co-morbidities, family background and other environmental factors
- There is some evidence of a relationship between population drinking patterns, levels of harm and restrictive alcohol policy. At the population level, greater alcohol consumption is thought to lead to greater violence and less consumption to less violence overall
- Acute or binge drinking (five drinks or more at a time) is more strongly associated with interpersonal violence than chronic or long term drinking
- Overall, males are more likely to experience alcohol-related injury and mortality
- Violence can be both a precursor to and a risk factor for alcohol abuse among women

### **Patterns of alcohol-related harms in Australia and Victoria**

- In Australia, overall consumption has remained the same and the average age of initiation to alcohol has not changed from 17 between 2001 and 2004
- One in ten Australians drink at risky levels for long term harm, however, trends in risky drinking by teenagers have dropped between 2001-2004, not risen
- The peak age for risky long term drinking is 20-29, but young Australian women (~one in five aged 18 to 23) are much more likely to drink at risky short term levels than older women
- Percentages of both male and female self-reported alcohol-affected physical and verbal abuse and levels of fear dropped a little between 2001 and 2004
- Alcohol attributable death rates have dropped for 14 to 17 year old Australians, but alcohol attributable hospitalisation rates among this group have risen
- Alcohol attributable mortality and morbidity data indicates that young Australian females are more likely to die from alcohol-related assault and males are more likely to be hospitalised
- A greater number of young Victorian people are drinking, although a only a small proportion (3%) report themselves as heavy or binge drinkers
- The proportion of alcohol drunk by young Victorians, especially young women, at any one time is increasing and will increase their risk of short-term harm
- Friday and Saturday, between 8 p.m. and 6 a.m. is the time of highest risk of alcohol-related assault in Victoria.
- Patterns of alcohol-related assault rose between 1995-1999 and are strongly correlated with social disadvantage in Victoria

### Risk factors for alcohol-related interpersonal violence

- Sex/gender: males are more likely to perpetrate physical and sexual violence, while women are at greater risk of victimisation

For both risk of perpetration and victimisation the following also apply:

- Young age
  - Socio-economic disadvantage
  - Aboriginal or Torres Strait Islander descent
  - Having co-morbidities, including illicit drug abuse or psychiatric disorders
- Alcohol outlet density is often correlated with socio-economic disadvantage
  - A large number of licensed premises may increase the risk of interpersonal violence, however risk may be accumulated among a number of particular venues
  - Specific venue environments- large numbers of young males, cheap drinks, a lack of food, overcrowding and other negative environmental factors increase the risk of alcohol-related assault
  - Sporting environments are often associated with young males and a culture of drinking permissiveness

### Alcohol and intimate partner violence

- More research is needed to explain the links between alcohol and intimate partner violence physical or sexual perpetration and victimisation
- Partner violence is associated with both dependent (chronic) and binge drinking
- Alcohol and partner violence are clearly associated in 25-50% of perpetration but less so with victimisation
- Alcohol consumption by perpetrators is likely to increase the severity of partner violence
- There is no evidence that women's intoxication causes their victimisation by partners, however in the presence of alcohol affected violence-prone men, women who are alcohol-affected are more likely to be vulnerable than women not affected.
- Victim-drinking can increase perceptions by both others and sometimes by the woman herself of her culpability, engender self-blame and reduce her coping skills
- Regardless of the aetiology of partner violence and alcohol abuse, both should be treated

### Alcohol and sexual assault

- Alcohol and sexual aggression are clearly associated, with stronger associations for sexual victimisation among alcohol affected women and less so for perpetration by alcohol affected men
- Alcohol misuse is associated with women's experience of childhood sexual abuse and is therefore associated with victimisation in child and adulthood
- Alcohol misuse by victims only is more common in sexual assault by strangers, than by intimates
- Some drinking environments increase the risk of alcohol-related sexual harm

## ***What can be done to prevent or reduce alcohol-related interpersonal violence?***

- Risk factors for interpersonal violence and alcohol misuse are interconnected and cumulative
- Primary prevention strategies to prevent risk factors for these interconnected problems are effective and more cost-efficient
- Prevention and early intervention strategies should target risk and protective factors for populations and contexts
- Strategies should include universal programs, targeted early intervention, targeted adult interventions and community system changes

## **Interventions**

### Universal interventions

- Community interventions are a promising development, however the evidence to date is inconclusive
- Mass media campaigns (harm reduction or counter-advertising) show some evidence of effectiveness in reducing alcohol-related interpersonal violence
- Restricting alcohol advertising has been demonstrated to reduce consumption, but there is no existing evidence for its effect in reducing alcohol-related assaults
- Increasing the minimum drinking age can reduce consumption and alcohol-related harms
- The evidence about the effect of price alone on consumption or related-harms is inconclusive
- Licensing restrictions are easier to enforce and not vulnerable to commercial pressure in comparison with voluntary accords. There is weak evidence for their effectiveness in reducing alcohol-related assaults
- Comprehensive strategies including community mobilisation, responsible beverage service, increased policing or creating safe atmospheres can reduce alcohol-related assault
- Police strategies have weak evidence of effect, but new technologies should be evaluated for their effectiveness in reducing alcohol-related assaults

### Targeted interventions

- Early intervention approaches including: home-visiting to vulnerable and disadvantaged mothers; newer family therapies; or psychosocial /educational approaches such as the Strengthening Families program are effective in reducing later adolescent misuse and alcohol-related social problems
- School-based intervention programs often target many forms of substance misuse, and are rarely well evaluated. In the US, many are abstinence-focussed, while Australian programs target responsible consumption where alcohol misuse is included.
- Evidence for the effectiveness of school-based psychosocial (eg building peer resistance skills) and educational (eg teaching alcohol harms) programs is mixed, as they are very heterogeneous, however, the most effective evidence based interventions recommended for schools are those using psychosocial approaches
- Methods for improving school-based program effectiveness have been identified and require further evaluation to assess their impact on assault rates

- There is good evidence that brief interventions (short sessions designed to assist an individual to modify a high risk health behaviour and reduce the associated harms) are effective in reducing problematic consumption
- There is some evidence of the effect of brief interventions in reducing alcohol-related interpersonal violence
- Strategies to reduce risky or high risk drinking and associated harms in university and sporting settings are poorly evaluated and require further research
- It is highly recommended that the political economy of alcohol be a focus of ATSI alcohol and violence interventions
- Most evaluations are of rural or remote interventions and there is a need for well evaluated urban ATSI alcohol-related interpersonal violence interventions
- Liquor licensing restrictions have been found to reduce assaults and domestic violence rates in ATSI interventions
- Interventions in the ATSI community (eg including restrictions on access to alcohol, or health promotion for responsible consumption) require more culturally sensitive and rigorous evaluation and better resourcing and support

#### Interventions to reduce specific alcohol-related intimate partner violence (IPV) or sexual assault

- There are no well evaluated interventions targeted to reducing alcohol-related intimate partner violence or sexual assault
- There is no rigorous evaluation of interventions to prevent or reduce partner violence for long-term benefit of women and children
- There is no rigorous evaluation of interventions designed specifically to prevent sexual assault in either private or public spaces
- Rigorous evaluation of perpetrator programs provides evidence of some reduction in partner violence, however, this is less effective when men have alcohol problems
- Evaluations of services which target treatment for both alcohol misuse and interpersonal violence should be developed and evaluated

## ***Implications for current policy and practice and research***

The review below presents evidence-based and sound conceptual frameworks that help to explain the complex multi-factorial connections between alcohol and interpersonal violence. Gender plays a significant role, which requires further research to unravel.

### Combining population and targeted approaches

The evidence for effective interventions to date indicates that a conceptual framework combining both universal and targeted interventions, together with community system changes will maximise population benefit.

In Australia, youth, those socially and economically disadvantaged and those of Aboriginal and Torres Strait Islander background are at greater risk of either alcohol-affected perpetration or victimisation, and certain subcultures, drinking environments and outlet density can exacerbate the vulnerability of these sub-populations. These should be the focus of targeted approaches.

### Invest in early intervention at home, in schools and communities

More investment in targeted early interventions can reduce the development of alcohol misuse and intimate partner violence in adolescence and later life. In addition, increasing the minimum age of legal drinking at a population level, while probably politically unpalatable, could maintain or reduce the proportion of young people at risk of longer or short term harm.

Complex community-based interventions show promise but require more rigorous evaluation. With multi-faceted interventions, better evaluation would tell us which mix of policy and legal strategies and which brief interventions are the most effective in reducing alcohol-related violence.

Australia has a strong model and research base for the rigorous development and evaluation of school-based interventions. More investment in evaluation could provide us with evidence for a national school curriculum targeted to reducing alcohol-related violence and other harms.

### Investigate gender-focussed alcohol and intimate violence prevention

We need more research to fully understand the links and pathways between alcohol and physical and sexual violence against women. There has been a strong focus on alcohol-related harm reduction in the public arena, and it is now time to develop and evaluate interventions for the prevention and reduction of alcohol-related violence against women in private domains. All evaluation should take account of the socio-economic determinants of alcohol-related interpersonal violence.

### Restrict the influence of the alcohol industry, especially in Indigenous communities

The alcohol industry is a strong and powerful one in Australia, as it is overseas. An anti-alcohol-related violence focus in media campaigns could counter the powerful weight of industry advertising, especially those associated with youth-oriented and sporting events.

There is an urgent need, especially in Aboriginal and Torres Strait Islander communities in city and rural areas, to analyse the political economy of the alcohol industry and evaluate the effectiveness of policy interventions to reduce the damaging levels of interpersonal violence.



## **Introduction**

Australia has a large and well-established alcohol industry, with a burgeoning international export trade, especially in beer and wine. Alcohol consumption contributes significantly to the pleasure of many social occasions in this country. On the other hand, it also has significant social harms and significant mortality and morbidity associated with alcohol misuse and abuse, which impacts on many Australian families and individuals. It is timely to investigate how these two phenomena are related and how to affect the right balance between these two facts and to reduce alcohol-related interpersonal harms

This review examines

- the links between alcohol misuse and inter-personal violence, and
- evidence based interventions to address inter-personal violence related to alcohol misuse.

The detailed methodology is contained in Appendix 1.

Articles cited in this review use the best quality available evidence for the area. In relation to the analysis of links, we only examined systematic reviews and narratives from known or often cited experts.

In relation to interventions, in some cases, there are Cochrane reviews of randomised trials, and where the evidence is rigorous, this is noted. We have described the strength of evidence in all available cases. When the evidence is weak, but the intervention appears to address an important area, for example, Aboriginal and Torres Strait Islander (ATSI) interventions, we have included it and noted the limitations.

In this review, we found that the majority of studies targeted to reducing alcohol-related consequences rarely included gendered forms of inter-personal violence such as partner violence or rape and sexual assault among their outcome measures, either directly or as an acknowledged component of a generic 'alcohol-related problems' measure.

GENACIS (Gender, Alcohol and Culture: an international Study) is a collaborative international project affiliated with the Kettil Bruun Society for Social and Epidemiological Research on Alcohol and coordinated by GENACIS partners from the University of North Dakota, the University of Southern Denmark, the Free University of Berlin, the World Health Organization, and the Swiss Institute for the Prevention of Alcohol and Drug Problems. More recently, GENACIS have outlined some promising directions on alcohol-related violence and gender. <http://www.med.und.nodak.edu/depts/irgga/GENACISProject.html>

Australia is a member country of GENACIS. The evidence from this review suggests that investment in research on understanding the pathways between alcohol and sexual and physical violence against women and interventions to prevent it would be a significant Australian contribution to this international project.

## **Background**

The Victorian Health Promotion Foundation, VicHealth, is an independent statutory body established in 1987. VicHealth works towards the development of innovative responses to the complex social, economic and environmental forces that influence the health of all Victorians. VicHealth has a particular focus on a flexible, responsive and evidence-informed approach to working with partners from across different sectors in the community to create environments which improve population health.

In 1999, in recognition of the growing human, economic and community costs associated with mental ill health, VicHealth identified mental health as a priority and established a program for the development of activity relevant to the promotion of mental health and wellbeing.

Mental health is defined as:

‘the embodiment of social, emotional and spiritual wellbeing. Mental Health provides individuals with the vitality necessary for active living, to achieve goals and to interact with one another in ways that are respectful and just’ (VicHealth 1999).

The VicHealth Mental Health and Wellbeing Unit is responsible for managing activity relevant to mental health promotion including:

- Research, monitoring & evaluation
- Direct participation programs
- Organisational development (including workforce development)
- Community strengthening
- Communication & social marketing
- Advocacy
- Legislative & policy reform.

Activity is directed towards strengthening three key areas for promoting mental health and wellbeing:

- **Social inclusion** (having supportive relationships, opportunity for involvement in community and group activity, civic engagement).
- **Valuing diversity and working against discrimination and violence** (having physical security and opportunity for self determination and control of one’s life).
- **Access to economic resources** (access to work, education, housing, money).

### **Background to this report**

In order to progress development of health promotion activity VicHealth commissioned a range of scoping reports which have included:

- Report of the Alcohol Misuse Research Project (2001, Taft), and
- Public Health, Mental Health and Violence against Women (2003, McCarthy)

Both of these reports have identified a strong link between alcohol misuse and inter-personal violence.

The reports also identified that;

- women are disproportionately affected by alcohol-related sexual assault and intimate partner violence, men by public alcohol-related interpersonal violence,

- there is considerable debate about the nature of the relationship between alcohol abuse and inter-personal violence and whether it is truly causal, and
- alcohol misuse is not generally viewed as a causal factor in precipitating violence against women but is more likely to be a factor in escalating the incidence and severity of the violence.

In 2004, VicHealth released a landmark report - *The Health Costs of Violence: Measuring the burden of disease caused by intimate partner violence*. This study identified that intimate partner violence contributed 9% to the total disease burden among Victorian women aged 15 to 44 and 3% in all Victorian women. The majority of this health burden impacted on women's mental health.

To further explore the link between alcohol and violence raised by these reports VicHealth commissioned Dr Angela Taft and Ms Liesje Toomey to undertake a review of national and international literature to identify and document evidence of:

- the links between alcohol misuse and inter-personal violence
- evidence based interventions to address inter-personal violence related to alcohol misuse, and

the implications of the findings for current policy and practice.

## ***What is interpersonal violence?***

For the purposes of this review, following that of the World Health Organisation World report on Violence and Health, (Krug EG, Dahlberg LL et al. 2002) we define interpersonal violence as including the following:

- intimate partner violence (also known as domestic violence)
- sexual assault and rape
- public violence, e.g.
  - street fights
  - crowd fights, such as football hooliganism or pub brawls
- homicide/femicide

We do not include collective violence such as that in wartime, suicide or child abuse.

## ***Is there a link between alcohol and interpersonal violence?***

It is important to note that in Australia, as elsewhere, drinking is a pleasurable social pastime. The majority of drinking does not lead to violence and most people do not become aggressive when they drink. Also, those who do become aggressive do not necessarily do so every time they drink. Nonetheless, a significant proportion of violent crime both in the public and private sphere involves offenders and/or victims who have been drinking (Haines B and Graham K 2005). The evidence that alcohol is a cause of violence remains controversial. Nevertheless, there is strong evidence of an association between alcohol and violence.

The links between alcohol and violence or aggression are complex and multidimensional, and studies of the relationship are difficult to assess because both alcohol consumption and violence are defined or measured in differing ways and because studies are often methodologically flawed and do not sufficiently take into account other explanations or factors which could explain the link, such as poverty or unemployment rates, ethnicity, age, mental illness or sociopathy etc (Roizen 1997; Room, Babor et al. 2005).

Most measures of these associations are derived from

- (a) studies of individuals, e.g. victims or offenders or participants in alcohol-related aggression experiments (event-level studies)
- (b) aggregate data, frequently at a population level (cross-sectional surveys, time series).

The World Health Organisation's updated 2004 Burden of Disease study recently estimated that alcohol consumption accounted for approximately 7% of the burden of intentional injuries in low mortality countries such as Australia, in comparison to 12.1% for the world (Room, Babor et al. 2005). Most experts agree that alcohol is neither a necessary nor sufficient cause of violence, interpersonal or otherwise, however the proportion of harm that can be attributed to alcohol can be calculated (Indermaur 2001; Room and Rossow 2001; Plant and Thornton 2002). The overall size of the effect of alcohol on aggression has been most reliably estimated from meta-analyses of experimental studies to be 22% (Bushman 1997; Room, Babor et al. 2005). Alcohol is thought to have a far greater effect on male aggression than on female, with 50% of male aggression attributed to alcohol, but only 13% of female aggression (Bushman 1997; Chermack and Giancola 1997; Haines B and Graham K 2005). Alcohol consumption increases the chances of men acting in an aggressive manner toward other men or women.

There is significant evidence that not only are violent acts committed by people who have been drinking or were intoxicated, but that assaults by people who are drinking are more likely to involve victims who have also been drinking (Plant and Thornton 2002). The estimates of alcohol-related interpersonal crime vary widely and in one analysis of criminal events, percentages varied between 28-86% for homicide perpetration, 14%-87% for

victimisation; 24-37% for perpetration of assault, 12%-16% for assault victimisation; and 14-87% for sex offences, with 6%-40% for victims (Roizen 1997). There is consensus that the relationship may be mediated by both perpetrator and victim expectations; experience with the effect of alcohol; the nature of the setting (a crowded bar) and the characteristics of the group (for example young heavy drinking males) (Haines B and Graham K 2005).

- **Alcohol is neither a necessary nor sufficient cause of interpersonal violence, but there is a strong association between the two**
- **Many studies do not adequately take into account socio-demographic and other factors which can explain the links**
- **Alcohol is associated more with male perpetration and female victimisation**
- **22% of aggression has been reliably attributed to alcohol, with 50% of male aggression attributed to alcohol, but only 13% of female aggression**

## **Explanatory factors**

There have been many studies to explore the physiological effects of alcohol on the brain and those by psychologists, criminologists and others about which beliefs, behaviours or environments could best explain the effect of alcohol on interpersonal violence, injury and death. The results can be described as a multi-faceted group of explanatory factors from individual physiological effects, beliefs and attitudes to wider environments and sub-cultures.

### Alcohol-related expectation

Attitudes, beliefs and expectations are related to alcohol-related aggression. For example, theory-based causal modelling studies have demonstrated how sex-related alcohol expectancies and experience can predict both alcohol consumption and sexual assault via misperceptions of sexual intent (between men and women) and expectations about the likelihood of punishment for sexual assault (Testa 2002). Beliefs about alcohol as an excuse for aggressive behaviour reflect cultural attitudes and expectations, and can be located within specific sub-cultures (e.g. certain pubs or 'macho' sporting sub-cultures) (Graham, Leonard et al. 1998). Perpetrators of alcohol-affected sexual assault are more likely to hold stronger beliefs about the effects of alcohol on sexual behaviour (Graham, Leonard et al. 1998; Testa 2004). The role of formal and informal social controls over alcohol-related aggression are reflected in the levels by which intoxication may be allowed as an excuse for aggression and deviant behaviour by judges and the courts, for example in Germany. This has been referred to as a 'discount for drunkenness'. However, intoxication in the victim may also be regarded by others and sometimes women themselves as increasing their perceived culpability (Graham, Leonard et al. 1998).

### Physiological effects

There are physiological effects which have been demonstrated to link the effects of alcohol on the brain with reductions in fear and anxiety and sensitivity to threats (alcohol myopia), as well as to a reduced ability to manage conflict (Lipsey, Wilson et al. 1997). These effects are moderated by social and physical environmental factors, which have been demonstrated in both experimental and natural studies (Ito, Miller et al. 1996; Chermack and Giancola 1997; Graham, Wells et al. 1997; Haines B and Graham K 2005). These factors include the presence of provocations or threats, permissive attitudes toward alcohol-related aggression and rewards by others for aggression (Haines B and Graham K 2005).

### Temperament, disorders and context

In their overarching review of biopsychosocial influences on alcohol and aggression, Chermack and Giancola identified that vulnerabilities and temperament (*antisocial behaviour, hostile interpersonal style and certain psychiatric disorders (e.g. APD, ADHD)*) combined with limitations in executive cognitive functioning (ECF) and environmental factors (*for example*

coming from homes with harsh discipline family violence or substance use) can interact over time in complex ways. These influences can leave children and adolescents at risk of alcohol-related aggression problems later in life. They may also encourage association with antisocial peer groups (Chermack and Giancola 1997). Such influences can be further complicated by other co-existing problems including illegal drug misuse (Parker and Auerhahn 1998).

**The strong association between alcohol and interpersonal violence can be explained by the interactions between:**

- **societal, cultural and individual expectations about alcohol effect**
- **the physiological effects of alcohol**
- **individual temperament, co-morbidities, family background and other environmental factors**

### What pattern of alcohol use causes the most harm?

There is considerable controversy over the question of which patterns of alcohol use cause the most harm, especially the impact of quantity of drinking versus frequency of drinking. Alcohol-related harms include chronic disease, unintentional and intentional injury, and acute and chronic social harm. Intentional injury includes injury as a result of interpersonal violence and suicide. One explanatory model is outlined below

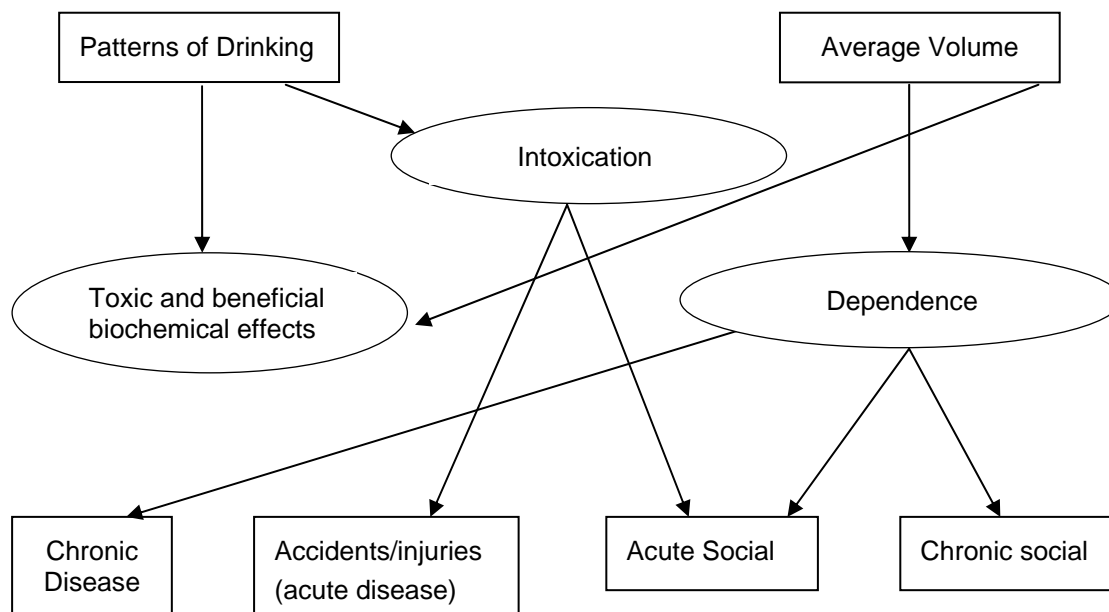


Figure 1. Conceptual model of alcohol consumption, intermediate mechanisms and long-term consequences. [Adapted from (Rehm, Room et al. 2003) permission pending]

Both average volume of alcohol consumption and patterns of drinking (e.g. heavy or binge drinking) have been shown to influence alcohol-related burden of disease (Rehm, Room et al. 2003). According to the model Rehm proposes, patterns of drinking are directly associated with injuries and acute social consequences (e.g rape, assault) through intoxication, while average volume of consumption acts through dependence to influence acute and chronic social consequences (e.g partner violence).

Some experts argue that drinking pattern (both frequency and volume), as well as expectancies and cultural beliefs about intoxication are important, but that we still know very little about how drinking patterns influence overall population levels of violence (Room and Rossow 2001). They assert that there is evidence of a relationship between population drinking patterns, levels of harm and restrictive alcohol policy.

Lipsey, Wilson et al comprehensively reviewed macro-level studies (population level studies) but found inconclusive results around the relationship between homicide, other crime rates and states with strong or weak alcohol restriction. Nonetheless they argue, it is notable that the alcohol-violence relationship appears with sufficient strength that it cannot be readily dismissed (Lipsey, Wilson et al. 1997). Room et al point out that when restrictions on sales were relaxed in Finland in 1969, total consumption, heavy drinking and arrests for drunkenness all increased significantly. In Russia, there was a 25% drop in estimated per capita consumption, accompanied by dramatic changes in morbidity and mortality, such as a drop of 40% in male homicide deaths following changes in Russian alcohol policy during 1984 to 1987 – the Gorbachov alcohol restriction era (Room and Rossow 2001).

The risk of injury has been found to increase at between five to seven drinks (heavy or binge drinking) at one time and then decrease at higher levels of consumption with variability in drinking pattern a stronger predictor of injury than average quantity per drinking session (Cherpitel, Bond et al. 2003). In 2005, staff of US National Centre for Disease Control and Prevention argued in a review commentary that binge drinking (defined as the consumption of  $\geq 5$  alcoholic drinks on one occasion for a man, or  $\geq 4$  for women) accounted for more than half of the deaths and two thirds of the potential years of lives lost as a result of excessive alcohol consumption in the United States in 2001. They argue that the strongest association of binge drinking is with injury. They cite a recent emergency department study where patients with a high blood alcohol concentration (0.8 g/dL) were more than three times as likely to have experienced violent injury than unintentional injury and that there was a significant dose response relationship between the amount of alcohol consumed and the risk of violent injury. They concluded that the scientific link between binge drinking and injuries, including violence is strong (Brewer and Swahn 2005).

A recent survey of alcohol consumption among 15 and 16-year-olds in 30 European countries illustrated that teenagers from countries in northern Europe are far more likely to report drinking to intoxication than those in southern European countries. Higher national levels of intoxication were also matched by teenagers self-reporting higher levels of adverse consequences (Hibell et al, 2001 cited in (Plant and Thornton 2002). Roizen argues from her comprehensive review that heavy drinking by the victim is associated with risk of injury and a more elevated risk when the assailant is drunk (Roizen 1997).

In a meta-analysis to estimate the global burden of disease from alcohol, Rehm et al concluded that the type of drinking patterns which predicts the highest risk of aggression consists of drinking to intoxication or drinking five or more drinks. Further, they suggest that this pattern is associated with being in a fight or being the target of aggression while drinking, over and above the relationship between overall volume of alcohol consumption and aggression (Rehm, Room et al. 2003).

Table no.1 below outlines the proportion of injury disease burden which could be attributed to alcohol outlined for each sex. The authors acknowledge limitations to their current ability to estimate the disease burden of alcohol, nevertheless state their overall conclusion to be that alcohol is related to many disease outcomes, both chronic and acute. The figures outlined in the table below can be read as percentages. For example, 25% of 15 to 29 year old male injury can be attributed to alcohol misuse. It is notable that alcohol attributable harms for males are higher in all injury categories, compared with female.

Table No. 1: Global alcohol-attributable fractions for injury mortality by age, sex and injury category (Rehm, Room et al. 2003) p.1223

	15-29		30-44		45-59		60 -69	
Injury category	Female	Male	Female	Male	Female	Male	Female	Male
Homicide	0.19	0.25	0.20	0.25	0.21	0.26	0.23	0.27
Other intentional injuries	0.14	0.19	0.15	0.19	0.16	0.20	0.17	0.21

- **There is some evidence of a relationship between population drinking patterns, levels of harm and restrictive alcohol policy. At a population level, greater alcohol consumption is thought to lead to greater violence and less consumption to less violence**
- **Acute or binge drinking (five drinks or more at a time) is more strongly associated with intentional injury than chronic or long term drinking.**
- **Males are more likely to experience alcohol-related injury and mortality**

### **Patterns of alcohol consumption and attributable violence in Australia and Victoria**

Overall alcohol consumption can be measured via per capita consumption and also more specifically per capita consumption of beer, wine or spirits (pure alcohol) per litre. Australia's per capita alcohol consumption is 7.3 litres (ranking 23<sup>rd</sup>) in a total ranking of selected countries which ranged from Luxembourg 11.9 litres (1<sup>st</sup>) to 3.1 litres for Taiwan and Mexico (45<sup>th</sup>). However, Australia ranks 9<sup>th</sup> (92.4 litres) for beer (range 155L-20L), 17<sup>th</sup> (20.6L) for wine (range 59.1L-1.1L), but 36<sup>th</sup> (1.2L) for spirits (range 6.2L-0.6L). Beer and spirits consumption has remained relatively stable in Australia over the last 40 years, but wine consumption rose between the 60s and 80s (Australian Institute of Health and Welfare (AIHW) 2005). More aggression is thought to occur following the consumption of distilled (spirits) rather than brewed drinks (e.g. beer) (Graham, Leonard et al. 1998).

The overall pattern of alcohol consumption in Australia has remained relatively stable over the period 1991 to 2004. There has been no increase in the age of initiation into alcohol abuse between 1995 (17.3) to 2004 (17.2) with the average first age of initiation at roughly 17 years. On the other hand, there has been a small rise in the numbers of males aged 14 to 19 drinking daily (0.3% in 2001 to 0.7% in 2004), but among females this figure dropped from 0.5% in 2001 to 0.4% in 2004. Both teenage males and females drinking weekly dropped between 2001 and 2004 (31.2% to 26.6% and 25.4% to 22.2% respectively (Australian Institute of Health and Welfare (AIHW); Australian Institute of Health and Welfare 2005).

The NHMRC define risky (50-75ml) and/or high risk (75ml+) alcohol intake for males as the consumption of seven or more standard drinks on any one day. For females, it is the consumption of five or more standard drinks on any one day (risky 25-50ml, high risk 50ml+). In 2004, at all ages, greater proportions of the population drank at risky or high risk levels for short term harm (e.g. interpersonal violence), than at levels considered risky or high risk for long-term harms (e.g. chronic disease) (Australian Institute of Health and Welfare 2005a).

#### Trends in Australian drinking patterns 2001 to 2004

Overall, one in 10 Australians drink alcohol at levels considered risky or high risk for long-term harm. For both males and females, the peak of such drinking occurs at ages 20 to 29, where 9% of men and 12% of women drink at risky levels and 6% of men and 3% of women drink at high risk levels. In conjunction with these figures, 27% of 20-29 year old males drank at levels for short term harm at least monthly and 17% at least weekly. 26% of females were at risk at least monthly and 11% weekly. Rates of drinking among teenage (14 to 19 year old)



males dropped with 15% at risk monthly (20% in 2001) and 11% weekly (10% 2001). This was the same for female teens 19% (21% in 2001) at least monthly and 11% weekly (12% 2001). It should be noted that if the average age of initiation is 17, presumably it is the greater proportion of older teenagers who account for the scale of harms among all teenagers (Australian Institute of Health and Welfare (AIHW); Australian Institute of Health and Welfare 2005).

Despite these figures, there is a perception that women's problematic drinking is increasing. There is also a concern about women's vulnerability to the effects of alcohol and its connection with physical and sexual victimisation. In 2005, the Australian Longitudinal Study on Women's Health (Women's Health Australia) a longitudinal cohort study of over 40,000 women, reported that while there were no great differences between women in different age cohorts who were long-term risky or high risk drinkers, the pattern was different for short-term risky drinking such as binge drinking among younger women. 5% of young women aged 18 to 23 years, 5% of middle-aged women aged 45 to 50 years and 3% of older women aged 70 to 75 years were long term risky or high risk drinkers. In contrast, 18% of younger women, 6% of mid-age women and 2% of older women were weekly short-term risk-takers (binge-drinking five or more drinks on one occasion), while 21% of younger women, 8% of mid-age women and 2% of older women did this monthly (Young A and Powers J 2005). In a separate analysis of the same data, women in the Younger cohort who consumed alcohol at risky or higher risk levels were more likely to be more socio-economically disadvantaged, poly-drug users, have poorer mental health, have deliberately harmed themselves and be victims of intimate partner violence (Taft A, Watson L et al. 2003). These figures do suggest that there is a greater proportion of young Australian females at risk of short-term harm, compared with other age groups, but this is not a rising trend.

Trends for alcohol-related harm in Australia

The attributable risk for alcohol-related assaults in Australia was estimated by English et al to be 0.47 in 1995 (that is approximately 47% assaults in Australia could be attributed to alcohol). However in 2001, Ridolfo and Stevenson points out that while this is an often cited figure, it is methodologically limited by the use of overseas studies. At the same time, Chikritzhs et al advised caution in the interpretation of this aetiological fraction for episodic, or acute hazardous drinking resulting in assault, because English et al had not adjusted for changes in drinking levels ie the 11% decline in per capita drinking between 1989 and 1997 (Chikritzhs, Jonas et al. 2001).

Self-reported female and male rates of alcohol-affected physical and verbal abuse and fear from two National Drug Strategy Household Surveys dropped between 2001 and 2004. Males reported higher rates than women of physical and verbal abuse overall, but women's level of fear was higher (Australian Institute of Health and Welfare (AIHW); Australian Institute of Health and Welfare 2005).

*Table No 2: Percentage of population aged 14 years or over who have been victims of alcohol or other drug-related incidents by sex, Australia 2001,2004 (Australian Institute of Health and Welfare 2005)*

	Males		Females		Persons	
	2001	2004	2001	2004	2001	2004
Verbal abuse	29.2	27.5	23.8	22.5	26.5	24.9
Physical abuse	5.8	5.4	3.9	3.5	4.9	4.4
Put in fear	11.8	10.6	15.6	15.3	13.7	13.0

Being young, male, single, with a low income and high alcohol consumption risk are risk factors for alcohol-related disorder (Makkai 1998). Alcohol-attributable death rates among 14

to 17-year-olds have declined markedly since 1990 (males by 41% and females 46%). Nevertheless, among alcohol-attributable deaths, 7% of male and 12% of female deaths are attributable to alcohol-related assault. Across the same period, 22% of alcohol attributable hospitalisation among males and 11% among females is due to assault. Teenage males are three and a half times more likely than females to die from alcohol attributable injury, but this is likely to include car accidents. Rates of alcohol-attributable hospitalisation for 14 to 17-year-old Victorian males rose from just over 20 per 10,000 in 1993/4 to over 30 in 1999/00 and for females from just over 10 to just below 20 per 10,000 (Chikritzhs, Pascal et al. 2004).

- **In Australia, overall consumption has remained the same and the age of initiation to alcohol has not changed from 17 between 2001 and 2004**
- **One in ten Australians drink at risky levels for long term harm, however, trends in drinking are dropping, not rising**
- **The peak age for risky long term drinking is 20-29, but young women (18 to 23) are much more likely to drink at short term risk levels than older women**
- **Self-reported percentages of alcohol-affected physical and verbal abuse and levels of fear dropped a little between 2001 and 2004**
- **Alcohol attributable death rates have dropped for 14-17 year old Australians, but alcohol attributable hospitalisation rates among this group have risen**
- **Among alcohol attributable mortality and morbidity, females are more likely to die from alcohol-related assault and males are more likely to be hospitalised**

In a state-by-state analysis for Victoria from the National Drugs Strategy Household Survey, 3% of Victorian males aged 14 and over drunk at high risk and 5% at risky levels of long-term harm and 2% of females drank at high risk; 7% at risky levels. Similar to national trends for short-term risk, 14% of Victorian males were at risk of monthly and 9% weekly and 12% of females monthly and 5% weekly (Australian Institute of Health and Welfare 2005).

The Victorian Burden of Disease study concluded that alcohol prevents more years of life lost in women than it causes, however more years of life are lost for men than are saved (Public Health Division 1999).

The most significant change noted in recent 2002-03 Victorian surveys examining drinking patterns is the increase in levels of lifetime use among 16 to 17-year-old girls from 90% to 94%, suggesting a small rise in initiation in Victoria. 91% of all young people surveyed had had a drink in the past 12 months (up from 89% in 2002). 3% reported themselves as heavy drinkers and 3% as binge drinkers. The report notes that one in five young people surveyed reported intending to get drunk, most or every time they drank. In addition, at least once in the past four months, 42% of young people could not remember what happened to them. The peak age for 'drinking to get drunk' was found to be 18-21. The report concluded that the increases in the amount of alcohol consumed by young people will put them significantly more at risk of short-term harm on a weekly (15% increase to 18%) and monthly basis (42% to 50%). While under the influence of alcohol, 26% of young people report verbally abusing someone. 41% of young people reported they verbally abused someone and 20% reported being in fear of somebody under the influence of alcohol, higher than national percentages (Premier's Drug Prevention Council 2003).

An analysis of assaults from the Victoria police database indicated that there are three categories of alcohol – related assault hours in Victoria.

1. High alcohol hour assaults occurring on Friday or Saturdays between 8 p.m. and 6 a.m. alcohol was implicated in 65% of these incidents
2. Medium alcohol hour assaults occurring from Sunday to Thursday, between 8 p.m. and 6 a.m. Involving 54% of assaults
3. Low alcohol hour assaults defined as occurring on all days between 6 p.m. and 8 p.m. Only 22.5% of assaults occurred during this period

The table below indicates that the rates (per 10,000 residents) of alcohol-related assault in Victoria rose between the years 1997 to 1999 (Dietze, McElwee et al. 2001). Suggesting a strong correlation with socio-demographic factors, Gippsland remained the highest region and Eastern Metro the lowest for alcohol-related assaults across the two time periods for all categories.

*Table No. 3 Trends in alcohol affected assault in Victoria per 10,000 residents from 1995-1999*

Victoria	Offender residence		Victim residence		Incident location	
	1995-6 – 1996/7	1997/8 – 1998/9	1995-6 – 1996/7	1997/8 – 1998/9	1995-6 – 1996/7	1997/8 – 1998/9
Alcohol affected events per 10,000 population	9.21	9.82	8.63	8.70	9.28	9.48

In summary, while rates of drinking per se have risen in Victoria between 2002 and 2003, there appears to be an increase in the amount of short term risky drinking by young people, especially young women. There is also a worrying trend in the number of young people intending to get drunk, and who have drunk to serious levels of intoxication. The conclusion that this may lead to a rise in alcohol-related harm, including assault seems reasonable and the assault trends underline this.

- **A greater number of young Victorian people are drinking, although a only a small proportion (3%) report themselves as heavy or binge drinkers**
- **The proportion of alcohol drunk by young Victorians, especially young women at any one time is increasing and will increase the risk of short-term harm**
- **Friday and Saturday, between 8 p.m. and 6 a.m. is the time of highest risk of alcohol-related assault in Victoria.**
- **Patterns of alcohol-related assault rose between 1995-1999 and are strongly correlated with social disadvantage in Victoria**

## Risk factors

### Young age

In 2001, the World Health Organisation, in a comprehensive review and analysis of their alcohol data base to understand trends in drinking among young people, noted the following:

‘The global burden of disease from alcohol exceeds that of tobacco in large part because acute consequences of alcohol use lead to death and disability in the younger years of life. There is evidence of convergence in drinking patterns among the young, towards products marketed to youth culture and tastes, and associated in developed countries with drinking to acute intoxication and with acute consequences such as motor vehicle accidents, drowning and interpersonal violence. It also appears that young people in many countries are beginning to drink at an earlier age, while research in developed

countries has found earlier initiation of alcohol use to be associated with a greater likelihood of alcohol dependence and alcohol-related injury in later life (Jernigan 2001).

The Australian and Victorian data above support many of these concerns, and while there is no evidence of earlier initiation of drinking in Australia over all, there is in Victoria. Jernigan expressed concern about the political economy of the alcohol industry and noted that young people were increasingly drinking beer and spirits, marketed as 'energy' drinks or 'alcopops'.

In America, Parker and Rebhun (1995) used time series homicide data from 1976 and 1983 divided in three age groups (15 to 18, 19 to 20, and 21 to 24). They found that the rate of beer consumption was a significant predictor of homicide rate in five of the six age-homicide category combinations (Parker and Auerhahn 1998).

### Sex and gender differences

Alcohol affects men and women in different ways. Women have greater sensitivity to alcohol, and are more likely to experience sedation at the same blood alcohol level than men; they also develop long-term complications of alcohol dependence more rapidly than men. Women also have a higher mortality rate from alcoholism than men (Blum, Nielsen et al. 1998). Risk factors for alcoholism in women include a family history of alcoholism, depression, stress and a history of physical or sexual abuse. Therefore, violence is both a precursor and consequent risk factor for alcohol abuse among women.

While men are more affected by alcohol (Bushman 1997) and more likely to be perpetrators of alcohol-affected violence, they are also more likely to be victims also, especially young men. However this victimisation is more likely to occur in the public rather than domestic sphere, where women are the overwhelming victims of alcohol-affected partner violence.

Pernanen found that alcohol involvement differed according to the gender of victim and assailant. Men are more likely to perpetrate and women to be victimised in alcohol-related offences. 62% of male only offences involved alcohol, 53% involved a female victim and male offender, and alcohol was involved in only 27% involving a female assailant. Violent episodes between men not only had higher levels of alcohol involvement but were also more likely to lead to injury.

### Socio-economic determinants

The association of alcohol with aggressive behaviour, and the extent of the belief about the relationship, differs for different subgroups and across countries, while expectations of alcohol-related aggressive behaviour are often higher among the males of most cultures (Graham, Wells et al. 1997; Room and Rossow 2001). Where there are marginalised sub-cultures, with less access to social rewards, such as status and material success, drinking occasions may be more likely to result in alcohol-related aggression (Graham, Leonard et al. 1998).

A British Crime Survey found that younger males and females (16 to 24 years) in lower socioeconomic positions, living in urban areas of poor housing were particularly likely to report being the victims of alcohol-related assaults. Additionally, from the Scottish Crime Survey, victims of alcohol-related crime were more likely to be in rented rather than owner-occupied housing and those in high-rise accommodations were most at risk (Plant and Thornton 2002). Similarly, studies of partner violence in Australia and overseas have shown that victims are more likely to misuse alcohol and drugs and be socio-economically disadvantaged (Eisenstat and Bancroft 1999; Goodwin MM, Gazmararian JA et al. 2000; Taft A, Watson L et al. 2003).

### Indigenous communities

There have been consistent findings about patterns of alcohol consumption among Aboriginal and Torres Strait Islander peoples which are similar to the patterns among indigenous people in other Western nations. What is also common to indigenous peoples is their experience of colonialism, dispossession and exclusion and this is considered to be the major contributor to the common patterns of alcohol misuse (Memmott 2001). The importance of this political context is emphasised by experts who highlight the political economy of alcohol.

A smaller proportion of Aboriginal and Torres Strait Islander people (62%) drink compared with those in the general population (72%). However, those who do drink alcohol consume much higher quantities than the general population and among these, there are higher rates of hazardous drinking patterns, especially among males, (Gray D and Saggars 2002). In some communities, this is complicated by higher rates of polydrug use.

In the context of the political economy of alcohol, excessive consumption has been explained as:

- A response to dispossession and grief
- A response to boredom is result of exclusion from the mainstream economy and its benefits
- one of the few cheap recreational activities available
- a protest at the imposition of a range of bureaucratic controls

Aboriginal people, women especially, are much more likely to die from alcohol-related homicide than are others in the Australian community and this often involves cases of partner violence and femicide (Mouzos 2001).

### Co-morbidities - mental and physical disabilities and illicit drug use

Risky and high risk alcohol use is associated with poorer mental health. Epidemiological studies often show high levels of violence in people with mental disorders. A recent substantial psychiatric epidemiological review found that male gender, more severe psychopathology (especially schizophrenia), primary antisocial personality combined with repeat intoxication and non-adherence to treatment could result in increased risk for aggression and violence (Soyka 2000).

An Australian study of psychiatric disorders in rural New South Wales examined 707 patients. This study exposed the complex co-morbid associations between psychiatric illness and alcohol abuse (47% of male patients were found to abuse alcohol compared with 6% female, 15% of men were abusing illegal drugs compared to 6% of women, 16% both were abusing tranquillisers). The authors commented that life problems such as domestic violence, sexual assault and incest are commonly found among women referred for psychiatric assessment (Yellowlees and Kaushik 1992).

Testa reviewed studies demonstrating co-morbid drug use and their role among both victims and perpetrators of alcohol-affected assault, suggesting that women's illicit drug use may expose them to a violent sub-culture of men and increase their vulnerability to violent assault. Nevertheless, studies examining this were few and drug use was not well-measured (Testa 2004).

## **Violence can be both a precursor to and risk factor for alcohol abuse among women**

### **Risk factors for alcohol-related interpersonal violence include:**

- **Sex/gender: males are more likely to perpetrate physical and sexual violence, while women are at greater risk of victimisation**

### **For both risk of perpetration and victimisation, the following also apply**

- **Young age**
- **Socio-economic disadvantage**
- **Aboriginal or Torres Strait Islander descent**
- **Having co-morbidities, including illicit drug abuse or psychiatric disorders**

## **Settings**

Several studies have highlighted the links between the spatial distribution of alcohol outlets, targeted advertising of alcohol to particular communities (especially low social demographic communities) and the prevalence of violence (Parker and Auerhahn 1998). The density of licensed premises is highly correlated with homicide rates and interpersonal assaults, even when studies control for other important variables (Giesbrecht and Greenfield 2003). However, the distribution of violence across and between such areas may not be uniform, because a small number of licensed premises can account for a majority of the violence. Studies of social ecology and regulatory strategies have demonstrated that community characteristics, for example larger populations of low educational attainment and vacant housing may be problem areas for alcohol-related assaults, dependent on whether or not they are located near high population areas. Regulations to mitigate the problem, for example reducing outlet density to reduce violence can aggravate problems elsewhere (Freisthler B and Gruenewald PJ 2005).

Studies mapping assaults in NSW over two years found that in Sydney 12% of licensed venues accounted for 60% of assaults and in Newcastle 8% accounted for 80%. This has been explained by the types of clients who frequent the bars and pubs, e.g. large groups of heavy drinking young men, combined with certain expectancies associated with a 'macho' drinking culture (Haines B and Graham K 2005). Levels of intoxication and cheap drink promotions which encourage risky alcohol consumption are highly associated with the risk of violence and aggression.

Haines and Graham (2005) also point out that there are several factors associated with licensed premises and the risk of interpersonal violence. One is the serving of food, which is associated with reduced risk. Venues failing to serve food have been linked to increased violence, because food consumption acts beneficially to reduce the level of blood alcohol concentration. In addition, a permissive atmosphere where antisocial and sexist behaviour is tolerated and venues poorly maintained or overcrowded can increase the expectation of interpersonal violence (Haines B and Graham K 2005).

Bar staff, security staff and bouncers also play a critical role in either preventing or increasing the possibility of interpersonal violence, although working in a bar is one of the more high risk occupations for experiencing violence (Haines B and Graham K 2005).

In Australia and New Zealand, there is a close association between beer, sporting prowess and national pride, similar to that in the UK. Sports clubs are the social centre of many smaller communities in which many young people, especially males learn about drinking and sport. Alcohol sponsorship is significantly involved in sporting events and associated

products and alcohol is marketed in a wide range of media (Hill and Casswell 2004). Australian sporting culture may be conducive to alcohol misuse and harmful consequences.

- **Alcohol outlet density is often correlated with socio-economic disadvantage**
- **A large number of licensed premises may increase the risk of interpersonal violence, however risk may be accumulated among a number of particular venues**
- **Specific venue environments- large numbers of young males, cheap drinks, a lack of food, overcrowding and other negative environmental factors increase the risk of alcohol-related assault**
- **Sporting environments are often associated with young males and a culture of drinking permissiveness**

To summarise all these associated factors: explanatory factors; patterns of frequency and quantity; trends in alcohol use; risk factors; and settings, it is useful to consider what Graham, Leonard et al (1998) propose as a socio-cultural model of factors contributing to intoxicated aggression involving two people (Graham, Leonard et al. 1998). They suggest the model offers avenues for prevention. It involves the interaction of two individuals in a social and cultural framework, the personal characteristics of each individual, the effects of alcohol on them and the influence of the drinking context and environment. This model is supported by others (Krug EG, Dahlberg LL et al. 2002; Plant and Thornton 2002).

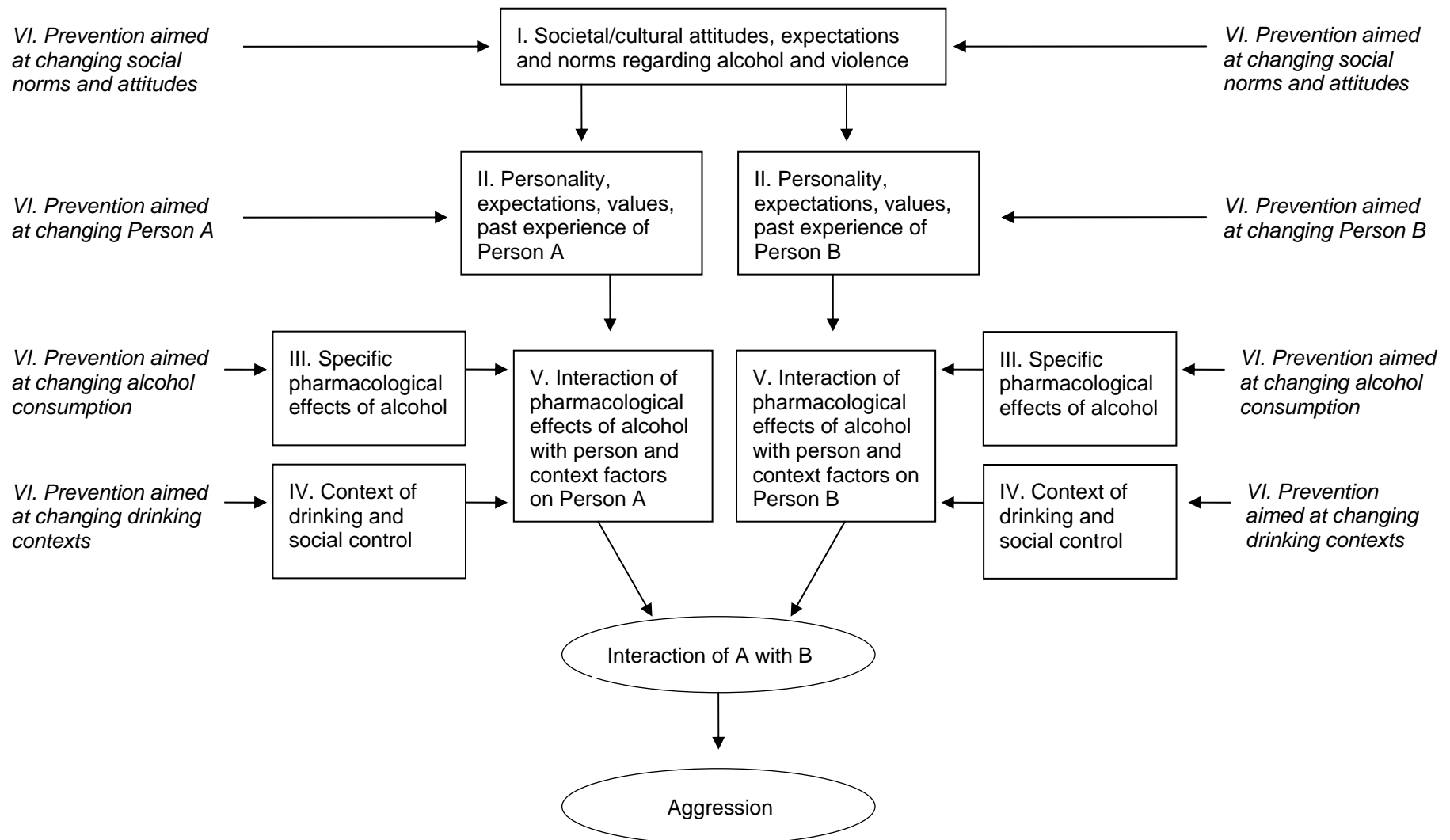


Figure 2 Contributing factors to intoxicated aggression: the example of aggression involving two people (Graham, Leonard et al. 1998). Permission pending



## Alcohol and intimate partner violence

We now specifically consider alcohol-related partner violence and sexual assault, where evidence for links is well established, but targeted interventions are virtually absent and much more could be accomplished. Women are most adversely affected by alcohol in their intimate relationships. The analysis above noted:

- women are more vulnerable to the effects of alcohol than men
- women are more likely to be victimised and men to perpetrate alcohol-related interpersonal violence
- a rise in young Victorian women drinking at risk of short-term harm
- high risk and risky drinking is associated with poor mental health, socio-economic disadvantage and partner violence
- young females are more likely to die from alcohol-related assault than males

There is a strong body of evidence linking alcohol with intimate partner violence (IPV) (Parker and Auerhahn 1998; Krug EG, Dahlberg LL et al. 2002; Testa 2004). In studies controlling for socio-demographic variables, hostility and marital satisfaction, the relationship between alcohol and violence remains highly significant (Buzawa ES and Buzawa CG 1990). In the US, it has been linked with intimate partner femicide; (Sharps PW, Campbell JC et al. 2001), however in Australia, alcohol is not an associated factor with homicide except for Aboriginal and Torres Strait Islander victims and offenders, where there was a high-level association (Mouzos 1999). In the US, alcohol and violence in a woman's family of origin was strongly correlated with all forms of intimate partner violence (physical, sexual and psychological) (Coker AL, Smith PH et al. 2000).

Alcohol has been implicated in approximately 25-50% of offenders in cases of partner violence (Leonard 2001; Bennett and Williams 2003). A 1997 meta-analysis of surveys of criminal and domestic violence examined associations with both chronic and acute drinking. They found the largest mean correlation of 0.22 was associated with the domestic violence-chronic drinker, compared with the criminal-chronic (0.15) and other criminal-acute (0.15). There were too few studies in the domestic acute category to calculate an effect size. Similarly Stith et al's meta-analysis found 24% of offenders were alcohol affected (an alcohol effect size of 0.24) and 13% of victims (0.13) (Stith SM, Smith DB et al. 2003). When studies were adjusted for all other variables which could account for the violence (e.g. socio-demographic, drug use, exposure to violence or personality disorders), it was only in the studies of domestic violence where the majority indicated a significant alcohol and interpersonal violence relationship (Lipsey, Wilson et al. 1997)

Reviews of the association between alcohol and IPV find:

- The highest rates of partner violence are associated with heavy or binge drinking (Buzawa ES and Buzawa CG 1990; Leonard 2001; Testa 2004)
- Partner violence perpetration and also victimisation affected by alcohol consumption may be compounded by illicit drug use (Buzawa ES and Buzawa CG 1990; Leonard 2001; Testa 2004)
- Men seeking treatment for alcoholism have higher rates of partner violence perpetration than those in the community (Lipsey, Wilson et al. 1997; Leonard 2005)
- Higher rates of alcohol problems among men perpetrating partner violence than among those who don't (Lipsey, Wilson et al. 1997; Testa 2004; Leonard 2005)
- Evidence supports the view that pro-violence attitudes have a stronger role to play than alcohol in predicting partner violence, however the highest rates of partner violence are found among men with attitudes which support violence against women and are heavy drinkers (Buzawa ES and Buzawa CG 1990) p38

- This relationship between partner violence perpetration, victimisation and alcohol has been observed among samples from hospitals (Roberts GL, Lawrence J et al. 1998), primary health care settings (McCauley J, Kern et al. 1995), family practice clinics (Oriel and Fleming 1998), antenatal clinics (McFarlane, Parker et al. 1996) and rural health clinics as well as the wider population.

Leonard analysed longitudinal studies of newlyweds and found that a husband's alcohol abuse is predictive of subsequent marital aggression although only among couples in which the partner was a light drinker (Leonard 2001). O'Farrell and colleagues demonstrated that alcoholics involved in marital behaviour therapy and alcoholism treatment reduced their violence towards partners (O'Farrell and Murphy 2002).

In a 2005 editorial in the journal *Addiction*, alcohol/violence expert Leonard proposes that there are moderators of this relationship. Among men with many motives to be aggressive and few restraints, alcohol does not make much difference, but more research is required to distinguish between individuals in whom alcohol plays a role in their violence toward partners. He states 'Alcohol's influence on intimate partner violence is not uniform. Instead, it is clear that alcohol contributes to violence in some people under some circumstances...these findings (studies reviewed to date) suggest that the occurrence of a violent episode amongst the most violent, antisocial men is not related to alcohol consumption, but that alcohol consumption may increase the severity of the violent episode. Given the limited research into moderators of the alcohol-intimate partner violence relationship, the conclusion should be regarded as tentative and in need of further research.' (Leonard 2005) p424

Leonard also analysed experimental studies which demonstrated that alcohol in the context of marital conflicts increased negative behaviours and that husband's alcohol consumption was more prevalent in physical aggression compared with verbal. Pernanen (1991) found that in 13% of sober domestic violence cases, the domestic violence victims were injured compared with 26% in victims injured in cases of intoxicated violence. An American study using the 1992/3 National Crime Victimization Survey found that 54% of alcohol-involved intimate partner assaults involving male perpetrators were severe compared with 43% of sober assaults. Gondolf et al in a very large and rigorous evaluation of batterer intervention programs found that after 30 months, men who reported intoxication before the course were more likely to re-offend (Gondolf EW 2000).

#### Alcohol, partner violence and women's victimisation

There is consistency across a variety of studies suggesting that alcoholic women may be more likely to be blamed by others for the abuse, and may blame themselves. In the criminal justice arena, intoxication may make the difference between a man being arrested or not, provided he is not aggressive with the police. However any evidence of use by the woman may reduce the likelihood of arrest of the man and increase the likelihood of arrest for the woman (Leonard 2005). A US study by Buzawa and Buzawa (1990) suggests that when men are prosecuted, if they are intoxicated it may lead to increased likelihood of prosecution because of (a) a general get tough on drugs attitude or (b) because of the belief there is a higher recurrence rate among substance abusers (p186). However the studies of victim drinking find that offenders may be held less responsible if the victim drinks, and consequently is held responsible for contributing to her victimisation (Buzawa ES and Buzawa CG 1990) .

Alcohol abuse by battered women can exacerbate a range of problems; it can be even more difficult to manage the complicated and dangerous process of leaving violent relationships and maintaining violence-free lives. This can increase the morbidity and injury associated with battering, contribute to increased use of health services, and enhance the risk of partner homicide and chances of attempted and completed suicide.

The chronic nature of partner violence coupled with all the other barriers to seeking assistance can make it harder for women to break free of the alcohol dependency (Collins, Kroutil et al. 1997).

Several studies find an association between alcohol and female victims of partner violence (Roberts GL, O'Toole BI et al. 1993; Stewart and Cecutti 1993; McCauley J, Kern et al. 1995). Kantor et al specifically examined the relationship of women's intoxication to their victimisation and concluded that the topic is poorly researched (Kantor and Asdigian 1997). They examined several theories of the role of women's intoxication and found very little evidence that women's intoxication provokes assaults by their partners. They found that battered women are often depressed and may use alcohol and/or drugs to self medicate. They also found that women's substance use is often highly correlated with those of their partners and this factor is often not adjusted for in studies. They suggest that **violence** in a woman's family of origin exerted a stronger effect on the current partner violence than the family's **history of drinking**. While both the victim's and perpetrator's family history of violence and alcohol abuse may be important, it is considered much more important in its effect on men's violence.

Among alcoholic women, they concluded, risks for victimisation are greater because:

- their drinking violates the traditional social norms that stigmatise alcoholism in women more than men
- they are more at risk due to their increased use of aggression and are more likely to have a heavy drinking male partner
- they are more likely to have a history of victimisation in the family of origin
- they have a low sense of self that reinforces beliefs they deserve to be beaten owing to their drunkenness, aggression, or unworthiness
- woman growing up in a violent home are more likely to consider violent modes of conflict resolution to be a normal part of intimate behaviour (Kantor and Asdigian 1997)

In Australia, a survey of 5000 young people (aged from 12 to 20) and domestic violence, found that almost a quarter had witnessed physical domestic violence. 55% of young people witnessed male to female physical violence in households where the male carer got drunk a lot, (although such households represented only 14% of the total surveyed). Young people considered alcohol intoxication to be a 'cause' of domestic violence. 14 per cent of females and three per cent of males indicated they had been sexually assaulted and almost a third (30%) of 19 to 20-year-old women had been frightened by one or more instances of physical violence compared with 12% of men. The same survey found a significant amount of violence-tolerant attitudes, especially among the socio-economically disadvantaged, younger male and Indigenous people. The report strongly emphasises the prevention role offered by early and targeted intervention in domestic violence among disadvantaged and marginalised communities and families (especially Indigenous families) where children are exposed at early ages and preventing the further exposure of children to alcohol-related violence (Indermaur 2001).

#### Alcohol, partner violence and problems in treatment approaches

Collins et al highlight that alcohol treatment programs focus primarily on an individual's use of alcohol, its consequences and the development of an abstinent way of living (Collins, Kroutil et al. 1997). However this primary focus can mean that perpetrators of domestic violence in alcohol treatment may go undetected, allowing the domestic violence to continue. If the violence is detected in the course of treatment, an emphasis on the disease concept of alcoholism can lead the violence to be viewed as a secondary problem as opposed to a problem requiring special intervention in its own right. Consequently, programs, staff and clients adhering to this alcoholism treatment approach may assume

that behaviour change (partner violence cessation) will occur once clients cease drinking and begin to manage sobriety. Similarly when female victims of partner violence have an alcohol problem, this is treated as independent of the battering problem or as a response to battering. They recommend that regardless of the aetiology of battering and victim's alcohol abuse, it is important to treat both problems. Collins et al highlight that difficulties in treating both problems concurrently include:

- the philosophies and goals of domestic violence and substance abuse services may not be compatible
- mechanisms and logistics for linking the two services may not exist
- funding and other resources to support linkages may also be limited (Collins, Kroutil et al. 1997).

We could find no evidence on the links between alcohol and intimate partner sexual aggression or marital rape.

- **More research is needed to explain the links between alcohol and intimate partner violence physical or sexual perpetration and victimisation**
- **Partner violence is associated with both dependant and binge drinking**
- **Alcohol and partner violence are clearly associated in 25-50% of perpetrator cases but the association is less strong with victimisation**
- **Alcohol is likely to increase the severity of partner violence, where it already exists**
- **There is no evidence that women's intoxication causes their victimisation by partners, however in the presence of alcohol-affected violence prone men, women who are alcohol-affected are more likely to be vulnerable than women not affected.**
- **Victim-drinking can increase others' perceptions of her culpability and self-blame and reduce her coping skills**
- **Regardless of the aetiology of partner violence and alcohol abuse, both should be treated**

## **Alcohol, rape and sexual assault**

Globally, the links between alcohol and sexual assault both within and outside intimate relationships have been acknowledged (Krug EG, Dahlberg LL et al. 2002). Sexual aggression has been defined as a man's attempts, whether successful or not, to coerce, threaten, or force a woman to engage in sexual acts against her will (Testa 2002). In 2002, Testa critically examined survey, longitudinal, events-based and experimental studies to examine whether men's alcohol consumption encouraged perpetration of sexual aggression against women. She found modest evidence that men's alcohol consumption patterns were positively related to sexual aggression, although she pointed out that the men's deviance may explain some of the association.

Event (rape or sexual assault event) level studies provided evidence of a high prevalence of men's alcohol use when sexual assault is perpetrated and suggest that sexually aggressive dates are more likely than others to include heavy alcohol use. In both types of studies, situational variables (victim alcohol use and drinking context) could account for some of the inconsistency. The experimental studies revealed a consistent proximal

effect of alcohol consumption by men on both actual and perceived likelihood of sexual aggression within hypothetical situations. Such an effect was predominantly the direct pharmacological effect of alcohol and to a lesser extent the expectations of its effect.

Testa concluded that there are both direct and indirect factors important to any understanding of the relationship between men's alcohol use and sexual aggression but that we need greater understanding of the pathway by which alcohol consumption can lead to subsequent sexual assault. Men with high levels of alcohol use and abuse or high in aggression enhancing characteristics such as hyper masculinity or antisocial personality disorder are more likely to drink to intoxication more frequently than others in situations where alcohol is available. Such environments could have a direct effect on aggression independent of the direct effect of alcohol. Pubs, bars and university parties involve norms where heavy drinking, unrestrained sexual behaviour and tactics to deliberately intoxicate women are common. The association between these drinking contexts and sexual aggression is consistent with the presence of intoxicated women who are perceived as more available and vulnerable to sexual victimisation (Testa 2002). Testa rightly notes however, that the majority of this research was conducted on dating relationships and has little relevance to intimate partner violence, which can include men's rape and sexual assault of partners.

Because of the heterogeneity of sexual aggression, Testa concludes that there is unlikely to be a single alcohol - sexual aggression relationship. Alternatively, there are likely to be different ways in which men's chronic and acute alcohol consumption can influence sexual aggression, depending on the situation and the individual man. In 2004, she summarised broadly that 'a limited number of survey studies provide weak evidence of an association between men's use of substances and perpetration of sexual aggression toward women... but somewhat stronger evidence supporting a link between women's substance use and their experiences of sexual victimisation. The findings were consistent with the notion that drinking alcohol may encourage sexually aggressive behaviour among individuals with congruent beliefs. Nevertheless, alcohol is not a necessary component for sexual aggression (Testa 2004).

Roizen (1997) finds similar limitations of analyses. She focuses on aspects of difference among alcohol-affected male sexual offenders, but emphasises the heterogeneity of complex situational factors even more strongly. She analysed North American alcohol and violence research, focusing specifically on sexual assault and rape. When reviewing 18 events-based studies reporting alcohol presence at the time of sex offenders' crimes, she found that alcohol was present in 13% to 60% of offenders and 6% to 36% of victims. There were significant differences in rapes where alcohol was involved. Roizen argues the demographic differences in samples, as well as measures, are important to explain the differences, but are rarely properly analysed. She questions whether the difference is in relation to the number of venues in the neighbourhood rather than any real difference. Two thirds of alcohol-present rapes involved drinking by both victim and offender. Like Testa, she also suggests that women who have been drinking may be less likely to recognise dangerous situations and therefore can be more vulnerable to sexual assault (Testa and Livingston (2001) cited in (Plant and Thornton 2002).

In Australia, there is anecdotal evidence of drink-spiking to incapacitate female rape victims but accurate figures are not available. An Australian study (Easteal 1994) found that some date rape victims who had been drinking said that self blame was one of the reasons for non-disclosure of the assaults (Cited in (Russo 2000).

Roizen also reported a large and comprehensive study of 646 rape events (Amir, 1971) in which:

- 41% of the initial meeting of offender and victim was in one of their homes, 42% on the streets and only 11% near a bar.
- Alcohol use by either victim (31%) or offender (24%) is twice as likely in rapes involving strangers (44%) compared with rape involving people known to each other (21%). In 77% of cases when only the victims had been drinking, they were strangers.
- When rape involves only men (as both victims and perpetrators), offenders are more likely to have been drinking and excess force was likely to be used in alcohol-present situations. In addition, sexual humiliation is also more likely where alcohol was present.
- Another study found that among fatal sexual assaults, positive blood alcohol content is present in 40% of the victims, of whom half were intoxicated (Roizen 1997).

#### Heterogeneity of alcohol affected rape

Among offender studies, there is no difference in levels of drunkenness between offenders who commit violent and non-violent, or sexual and non-sexual crimes. Almost 90% of rapists drank moderately to heavily in the year prior to imprisonment, but only 60% drank prior to the events, suggesting that alcohol is not proximally related to rape. However, many studies do not analyse many important socio-demographic and other variables. Roizen suggests that alcohol use may only be a marker for an inter-correlated set of problems (social/familial, economic, mental health eg sociopathy) which should be considered in any investigation. The role of alcohol may differ in different kinds of rapes and she refers to a study which distinguishes between anger rape, power rape and sadistic rape. For example, some rapists can't have intercourse because of the effect of alcohol and this may conclude with angry and sadistic responses.

Many US population studies are of college students. Alcohol use is very common among college students of both sexes and heavy drinking by those who are offenders and victims needs further analysis before it could be seen as a risk factor. Roizen argues that we know too little about the role alcohol plays in violent behaviour. Situations and contexts are multi-dimensional and complex, with other factors, such as drug abuse also present. Rape offenders, like other violent offenders, are heavy drinkers and drug users and there are many multi-faceted personal and social problems which may explain the deviant sexual behaviour. (Roizen 1997)

#### Directionality and alcohol sequelae following childhood sexual abuse

Alcohol may also be a consequence of abuse. There appears to be an association between severe alcohol problems leading to the use of treatment services and past sexual assault, especially childhood sexual abuse among women, and this is related to severity of abuse, especially penetration. The association between alcohol misuse and risk of childhood and/or adult sexual abuse/assault for women is confirmed in field studies (Fleming JM 1997; Ullman 2003).

Moncrieff and Farmer suggested there are plausible and not mutually exclusive hypotheses about the association.

- Sexual assault is a cause of alcohol misuse. The evidence to date indicates that while sexual abuse precedes alcohol problems often, other evidence suggests that heavy drinking can also constitute a risk factor for sexual abuse
- Alcohol misuse predisposes people to sexual assault. There is evidence to suggest links between family history of alcohol problems and sexual abuse; however the mechanisms by which children are put at risk are inconclusive.
- Sexual assault and alcohol misuse both result from another factor

- Sexual assault predisposes people to develop other conditions (psychiatric conditions, aggression or low self-esteem) that are associated with alcohol misuse
- The association is an artefact.

Moncrieff and Farmer concluded by highlighting that while clinical experience suggests sexual abuse is an important issue in treatment, there is no research on the impact of the history of abuse on the process of recovery from alcohol problems and that this is a potentially important area for further analysis (Moncrieff and Farmer 1998).

- **Alcohol and sexual aggression are clearly associated, with stronger associations for sexual victimisation among alcohol affected women and less so for perpetration by alcohol affected men**
- **Alcohol misuse is associated with women's experience of childhood sexual abuse and is therefore associated with victimisation in both child and adulthood**
- **Alcohol misuse by victims only is more common in sexual assault by strangers, than by intimates**
- **Some drinking environments increase the risk of alcohol-related sexual harm**

## Summary

Previous VicHealth reports have indicated that:

- ◆ Women are disproportionately affected by alcohol-related sexual assault and intimate partner violence and men by public alcohol-related interpersonal violence.
- ◆ There is considerable debate about the nature of the relationship and alcohol abuse and interpersonal violence, and
- ◆ alcohol misuse is not generally viewed as a causal factor precipitating violence against women but is more likely to be a factor in escalating the incidence and severity of the violence

This review evidence confirms these statements. In addition, however the review identified strong links between interpersonal violence and overall alcohol consumption, patterns of drinking, and explanatory and risk factors which operate at all levels from society and culture to the individual and their specific drinking contexts.

There is an increasing trend toward younger people, especially women, drinking at short-term risk in Victoria. This is associated with socio-economic disadvantage, and there is a risk for these young people of alcohol-related physical and sexual assault. Given the greater likelihood of young women to die from alcohol-related assault than young males, we now examine evidence for interventions to reduce such harm for the whole population, but especially for young females.

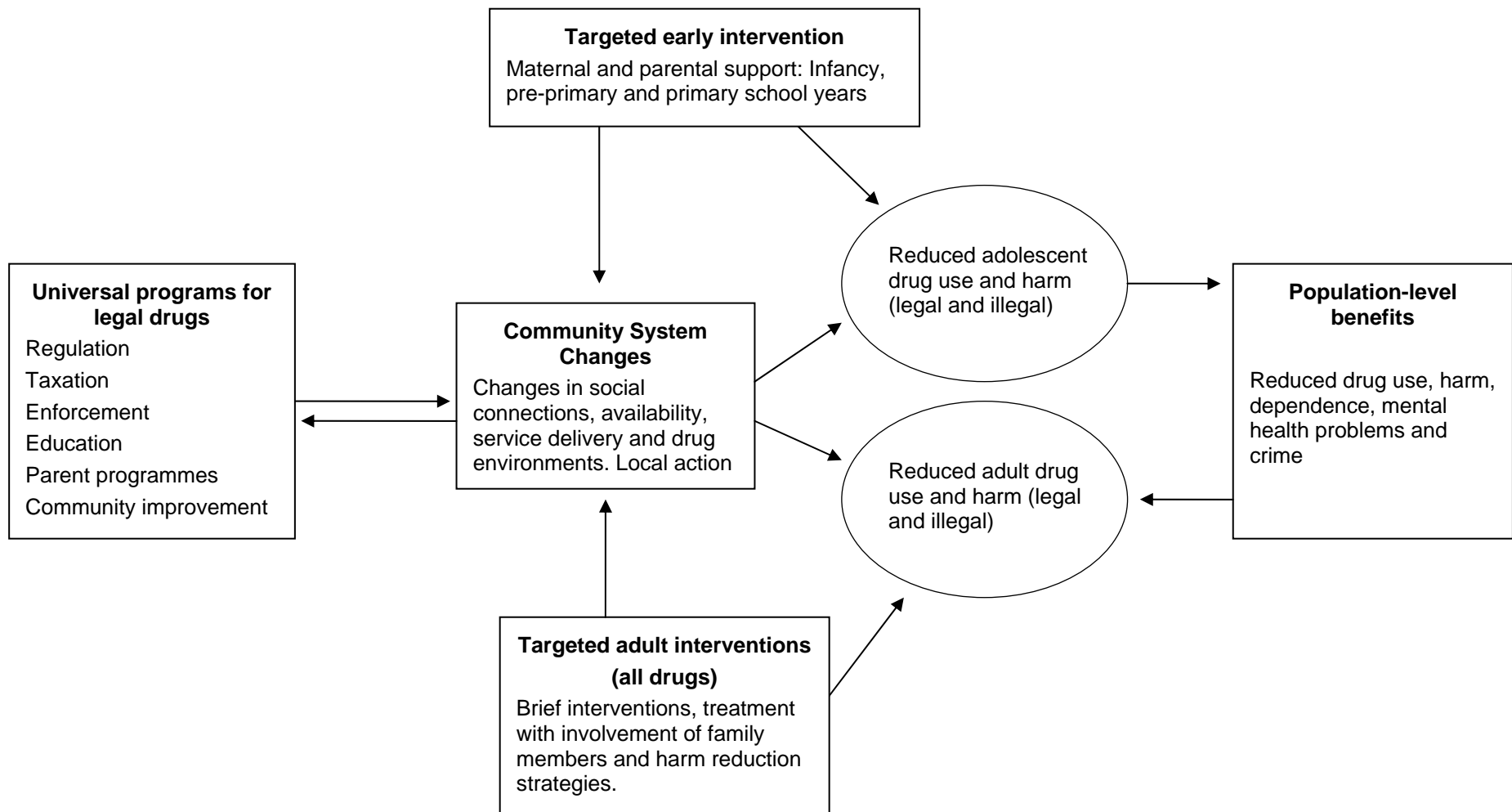


Figure 3 A summary of recommended interventions for future investment (Stockwell T, Gruenewald PJ et al. 2005) p446 Permission pending.



## ***What can be done to prevent or reduce alcohol-related interpersonal violence?***

In the previous section we demonstrated that there is a strong association between alcohol misuse and interpersonal violence, and we suggested that Graham's model (figure 2), is important to understanding and interpreting this association. The explanatory model outlines factors operating at distal or macro-level (economic and social policy, environmental and other contextual levels) as well as at proximal or micro-level (family, individual, and physiological factors), that influence the relationship between alcohol misuse and interpersonal violence. Following on from this, primary and secondary interventions aimed at alcohol-related interpersonal violence should acknowledge and target all these levels.

The following section outlines a range of such strategies from universal interventions at the community level to targeted interventions that focus on vulnerable individuals and at risk groups.

Conceptual models for alcohol harms and interpersonal violence recognise their mutual aetiology and inter-connectedness. Hence strategies which aim to prevent or reduce alcohol-related interpersonal violence need to intervene at all levels. There is therefore potential overlap and economy in primary prevention approaches to both alcohol abuse and interpersonal violence (Graham, Leonard et al. 1998; Krug EG, Dahlberg LL et al. 2002).

Stockwell et al have recently produced a set of recommended alcohol-focussed prevention strategies based on the evidence available to date, which we have reproduced above (figure 3). Consistent with Graham's model (figure 2) their recommendations incorporate community and individual level opportunities for change. For example, universal programs to regulate legal drugs including alcohol; targeted early intervention strategies and targeted adult intervention strategies such as brief interventions. The authors argue that such strategies will reduce adolescent and adult drug use and harm and will have population benefit through reduction of harms such as interpersonal violence (Giesbrecht and Greenfield 2003; Stockwell T, Gruenewald PJ et al. 2005).

Stockwell et al argue that overall cost-effectiveness of government investments in prevention can be maximised by:

1. directing resources towards prevention of the underlying patterns of drug use responsible for the most prevalent and serious harms
2. taking account of the extent to which patterns of risk are concentrated in particular social groups or evenly distributed across the whole population
3. emphasising investment in interventions that have evidence of effectiveness at the population level in controlled studies
4. funding research designed to fill gaps in the evidence base
5. comprehensive epidemiological monitoring to maintain appropriate targeting of funding and quality in delivery of funded programs (Stockwell T, Gruenewald PJ et al. 2005)

These broad approaches are further conceptualised and supported by others below:

- A life course development approach: improving the conditions for healthy development of children and young people by directing evidence based interventions to modify early developmental determinants (Toumbourou and Catalano 2005; Toumbourou, Williams J et al. 2005)

- Population or universal level strategies to reduce consumption (Toumbourou and Catalano 2005)
- Ecological perspectives (Freisthler B and Gruenewald PJ 2005; Lascalea E, Freisthler B et al. 2005)
- Harm minimisation (Midford and Boots 1999)
- Political economy and law enforcement strategies, including liquor licensing controls and better policing (Donnelly and Briscoe 2005)

### Implementation issues

Prevention programs are more successful where they maintain intervention activities over a number of years from childhood to adolescence and involve strategies in the different domains of family, school, community and peer groups. They can be poorly implemented in setting such as schools and communities, which require adequate resources for training and technical support. Coordinated funding bridging different jurisdictions, such as crime prevention and health promotion, can offer efficiencies and effectiveness. Coalitions undertaking local assessments of risk and protective factors are useful for planning and implementation and strengthen local ownership (Toumbourou, Williams J et al. 2005).

### Risk and protective factors

Early exposure to substance use leads to progression in substance use behaviours. Many of the same factors influencing the development of harmful use drug use also predict other youth problems, including delinquency, homelessness, sexual risk taking and mental health problems. Therefore preventing:

- maternal substance use prior to birth;
- early age use;
- exposure to early or more frequent use of alcohol (age 14 or 15) which can lead to crime and delinquency; and
- poly-drug use at an early age

is recommended in order to prevent later harms (Toumbourou and Catalano 2005).

Identifying risk and protective factors (defined as influences that modify the effect of risk factors while not directly predicting developmentally harmful drug use) has also been recommended (Toumbourou and Catalano 2005).

Risk factors for males to develop subsequent harmful substance misuse include:

- Inherited vulnerability
- Maternal smoking and alcohol use
- Extreme social disadvantage
- Family breakdown
- Child abuse and neglect

Early age protective factors are at an individual level, such as having an easy temperament, social and emotional competence, and a shy/cautious temperament. In adolescence, the protective factors are more contextual and include family attachment, parental harmony and religious involvement. The wider community level factors include alcohol taxation, higher drinking age laws, alcohol sales restrictions and programs aimed at enhancing school commitment and achievement (Toumbourou and Catalano 2005).

## Universal interventions

Experts argue that risk factors accumulate and interact to impact on both individuals and their broader contexts; therefore action at the population level will decrease an aggregate range of risk factors (Room, Babor et al. 2005; Toumbourou and Catalano 2005). Community ecological approaches account for the interaction between people and places that generate problems such as alcohol misuse. They may include policy levers (e.g. regulatory, economic and enforcement) at local or regional levels (Lascala E, Freisthler B et al. 2005; Toumbourou, Williams J et al. 2005).

Statistical analysis of community-based data show (1) population and place characteristics make important contributions to problem rates (2) spatial interactions of populations between neighbourhood areas can affect drug and alcohol problems and (3) risk and protective factors are heterogeneously related to problem outcomes across community areas (Freisthler B and Gruenewald PJ 2005)

Communities consist of geographically dispersed and interacting subgroups which use community resources in different ways. Policy and regulatory change in community settings can dynamically interact with local conditions and impact on problem outcomes in a variety of ways. For example, reducing numbers of alcohol outlets in low-income or minority areas can result in fewer assaults in those areas, but it may also lead to the development of outlets in other areas and therefore displace the problem from one neighbourhood to another rather than minimising it overall. Hence, a thorough understanding of the social ecology of the problems is highly recommended before designing an intervention program. (Freisthler B and Gruenewald PJ 2005). Computer programs simulating community systems approaches to alcohol prevention and associated problems have been developed to assist intervention planning (Holder, Treno et al. 2005)

- **Risk factors for interpersonal violence and alcohol misuse are interconnected and cumulative**
- **Primary prevention strategies to prevent risk factors for these interconnected problems are effective and cost-efficient**
- **Prevention and early intervention strategies should target risk and protective factors for populations and contexts**
- **Strategies should include universal programs, targeted early intervention, targeted adult intervention and community system changes**

### Community wide interventions

It has been argued that “we are all participants in a total community system: a dynamic, self adaptive social, economic and spatially distributed system of actors and organisations including licensed establishments selling alcohol, police responsible for enforcing laws regulating substance use, and parents monitoring youth activities. In this approach the community can provide strategic levers to improve its members’ health and well-being, establish appropriate standards for consumption and set formal and informal controls on the abuse of alcohol and other substances” (Holder, Treno et al. 2005) p150.

There have been recent attempts to integrate many of the universal strategies above into an ecological whole of community interventions. Foxcroft et al, in their Cochrane study have robustly evaluated and reviewed several of these studies and concluded

that while they are promising, the evidence is inconclusive (Holder, Gruenewald et al. 2000; Foxcroft, Ireland et al. 2002; Holder, Treno et al. 2005).

For example, Holder et al analysed interpersonal violence outcomes from three intervention communities in the American south whose strategies incorporated community mobilisation, limiting access to alcohol, increased enforcement of the law and responsible beverage service. Intervention communities demonstrated a 43% reduction of assault injuries observed in emergency departments and all hospitalised assault injuries declined by 2% in intervention communities compared with comparison communities (Holder and Moore 2000). A cost-effective analysis reports that for each dollar spent on the intervention there was a saving of \$2.88.

Other community intervention quasi-experimental trials did not examine interpersonal violence outcomes, but included relevant risk factors in their outcome measures. Waagenar et al (1999) report successful community mobilisation etc, but found no clear statistically significant effects in three-year follow-up results excepting a reduction in drink-driving. Perry et al (1996) conducted Project Northland, a largely school-based study and found no significant differences in the longer term (Foxcroft, Ireland et al. 2002).

One Australian study (Midford and Boots 1999) combined 22 major component activities in six domains:

- Networking and support,
- Community development
- Alternate options and underage disco
- Health education -- Operation Drinksafe
- Health marketing
- Policy institutionalisation

The intervention community, Geraldton was compared with a similar regional town, Bunbury in Western Australia. Evaluation measured night-time assaults, hospital morbidity and accident and emergency admissions. However, while there was a trend towards positive effect, there were no statistically significant results (Midford and Boots 1999).

- |  |
|--|
| <ul style="list-style-type: none"><li>• <b>Community interventions are a promising development, however the evidence to date is inconclusive</b></li></ul> |
|--|

#### Media campaigns and advertising

Mass media campaigns have the potential as effective communication and education tools to communicate harm minimisation and prevention messages to the whole community and to targeted populations. Conceivably, they can mitigate the effects of advertising by a well funded alcohol industry. However, reviews have found that anti-substance use/abuse campaigns have had greatest impact in increasing knowledge and awareness, but modest success in affecting attitudes and behaviours (Paglia and Room 1999).

The Northern Territory has had the highest levels of hazardous alcohol consumption and related problems such as violence in Australia. The Living with Alcohol (LWA) program was a state-wide harm reduction program which incorporated a range of interventions including an increase in state liquor taxes, price increases, (especially for cask wine), restrictions on hours of trading in licensed premises and a mass media campaign which covered responsible service of alcohol on licensed premises. The results demonstrated an estimated 19% reduction in alcohol-related deaths not

including road crashes. These are consistent with a 22% reduction in per capita alcohol consumption and reduction of 27% in hazardous drinking by males over the intervention period (Stockwell, Chikritzhs et al. 2001).

A study of alcohol advertising restrictions in 20 countries over 26 years, found that moving from no restrictions to partial restrictions or from partial restrictions to total bans reduced alcohol consumption between 5-8%. No studies have investigated the specific effect of advertising restrictions on drinking or drinking problems among young people (Grube and Nygaard P 2005).

Another review of counter-advertising found that it did not increase perception of alcohol-related risks (e.g. risk of sexual assault with intoxication) and in one experimental study it even made some products more attractive to both drinkers and non-drinkers alike. This review, which did not adequately analyse the quality of studies, found some modest support overall for the effect of counter-advertising (Giesbrecht and Greenfield 2003).

- **Mass media campaigns (harm reduction or counter-advertising) show some evidence of effectiveness in reducing alcohol-related interpersonal violence**
- **Restricting alcohol advertising has been demonstrated to reduce consumption, but there is no existing evidence for its effect in reducing alcohol-related assaults**

#### Policy and legal interventions

##### ***Increasing minimum age of alcohol use***

Recent systematic reviews of evaluations of minimum legal drinking laws in the US, Canada and Australia strongly indicates that a higher minimum legal drinking age is associated with lower levels of drinking and drinking problems among young people, although the strongest evidence appears to be for reduction of drink driving (Wagenaar and Toomey 2002; Grube and Nygaard P 2005). Increasing the minimum age for alcohol use in New York State was found to reduce youth alcohol use by encouraging less favourable parental attitudes towards alcohol use, leading to less permissive parental rules around alcohol use and older age at first introduction to alcohol. Yu, 1998 cited in (Toumbourou and Catalano 2005).

##### ***Taxation and Pricing***

International research finds mixed conclusions about whether alcohol price is inversely related to consumption and alcohol-related problems and appears to be context specific. One review of a large number of econometric studies found that *when other factors remain unchanged*, a rise in the price of alcohol generally leads to a drop in consumption (Her, Giesbrecht et al. 1999) Some experts argue that it is a useful lever for reducing overall consumption and highlight a finding that the US national economic costs from alcohol misuse is six times as large as government revenue from all forms of taxation, duties and excise combined (Giesbrecht and Greenfield 2003). A 2005 British study found that a 10% increase in price was estimated to reduce demand for beer drinking by 5% (on premises) to 10% (off premises), for wine by about 8% and for spirits by about 13%. It suggested young people may be more sensitive to price than adults, but there was little evidence about the specific influence on binge drinking (Ogilvie, Gruer et al. 2005).

In contrast, recent analyses (2005) among states in the USA found no evidence that taxation and price impacted on alcohol consumption and alcohol-related problems among either youth or the general population. Grube and Nygaard suggest that relations between taxes on alcohol and alcohol consumption and problems may have been affected by the requirement for documentation of proof of minimum legal drinking age. Price increases can lead to changes in patterns of consumption, such as switching to less expensive drinks or drinking in less expensive venues, without reducing overall consumption. Therefore it is difficult to estimate the effects of tax increases in a specific case (Her, Giesbrecht et al. 1999; Grube and Nygaard P 2005).

### ***Licensing, outlet density and other associated interventions***

Homel et al (2004) argue for a problem focused, responsive regulatory model because to be of any use, regulation requires an understanding of all aspects of the problem related to nightclubs and bars. They point out that licensed premises not only sell liquor, but entertainment, excitement, strenuous physical activity and sexual liaison. They are also businesses vulnerable to a range of community and political influences on the effects of regulatory and market reform (including national competition policy) (Homel, Carvolth et al. 2004). Licensing restrictions are one mechanism of control, considered superior to licensee accords, because accords are not enforceable at law and therefore vulnerable to commercial pressure (Gray D and Saggars 2002).

This is evident from a controlled evaluation of a West Australian police-licensee accord which provided evidence that compared to a control community, there were no statistically significant differences between levels of assault in the intervention community. This has been ascribed, amongst other factors, to a failure to refuse services to intoxicated patrons, or require age identification and contradictory instructions given to staff (Hawks D, Rydon P et al. 1999). Pre and post-evaluation of a Victorian Accord in Geelong offered more optimistic outcomes on reduction of serious assault rates (Gant and Grabosky 2000).

Multi-pronged ecological interventions in licensed premises appear to offer potential for reduction in interpersonal violence in public places. A community action programme involving hospitality industry members and authorities incorporated community mobilisation, responsible beverage service and enforcement of existing alcohol laws was evaluated in a controlled design and found a 29% reduction in violent crime in the intervention area compared with the comparison (Wallin, Norstrom et al. 2003; Grube and Nygaard P 2005). Responsible beverage server intervention programs are a useful addition to such interventions, but the evidence for their benefit in isolation is inconsistent. Most experts argue that the training must be combined with enforcement and in tandem with other environmental interventions (Giesbrecht and Greenfield 2003).

Interventions including liquor licensing regulations, public transport availability around licensed premises or the impact of tempered glass on intentional injury to patrons are poorly evaluated in relation to reducing or moderating alcohol-related violence in the context of licensed premises (Haines B and Graham K 2005). The effectiveness of licensing restrictions requires better controlled studies.

The Safer Bars Program consisted of a range of comprehensive strategies to identify and reduce environmental risks for aggression. This trial of large capacity bars and clubs in Toronto, Canada used strategies that included: creating a social and physical atmosphere that decreases provocation; maintaining policies and rules; responsible bar staff training and supervision and managing issues around closing time. The training uses group discussion and role-play to address range of issues around conflict

management. There was a significant reduction in moderate to severe physical violence in the intervention (18 bars) compared with control bars (12) where aggression increased. The sustainability was affected by high turnover of staff. However, the authors advise caution on interpretation because of the generally low rate of physical aggression in the study (Haines B and Graham K 2005).

Several other harm-minimisation strategies, similar to those outlined above, have demonstrated impressive reductions in assaults in uncontrolled studies, including the Surfers' Paradise project in Queensland. Subsequent replication of similar strategies in other quite different Australian regional towns also demonstrated 75% reduction in total physical assaults. However in a 2004 reanalysis of subsequent Queensland initiatives, the improved physical comfort, the reduced degree of overall permissiveness, the availability of public transport and aspects of the ethnic mix of patrons were the few significant factors that explained the reduction in assaults (Gant and Grabosky 2000; Homel, Carvolth et al. 2004; Haines B and Graham K 2005).

A 2005 process evaluation of a Margaret River WA community project for managing school leaver celebrations demonstrates the complexity of approach required for beneficial management of alcohol-related physical and sexual assault. This included an accommodating community management approach involving entertainment, cheap food, adult supervision and security (Midford R, Midford S et al. 2005).

- **Increasing the minimum drinking age can reduce consumption and alcohol-related harms**
- **The evidence about the effect of price alone on consumption or related-harms is inconclusive**
- **Licensing restrictions are easier to enforce and not vulnerable to commercial pressure in comparison with voluntary accords. There is weak evidence for their effectiveness in reducing alcohol-related assaults**
- **Comprehensive strategies including community mobilisation, responsible beverage service, increased policing or creating safe atmospheres can reduce alcohol-related assault**

### ***Policing***

Several studies in the UK in particular, as well in Australia, have combined policing of licensed premises, targeted cover charges, and responsible bar staff training with an emphasis on heavy policing of higher risk licensed premises. However, the evaluation of these interventions has not been rigorous and therefore the results of the studies cannot be generalised with confidence. Nevertheless, the authors note that the overall direction of results indicate that targeted policing is likely to be an effective approach to reducing bar-related violence (Doherty and Roche 2003).

Door staff or 'bouncers' have a role in the first line of response to potentially violent incidents and also managing conduct within licensed premises. However, some assaults in bars are perpetrated by security staff themselves or they can be the target of assaults perpetrated against them. Training of door staff and strict eligibility to work of security staff have shown some positive results. However their training has been part of larger programs of interventions, so that it is not possible to separate the effects of security staff training from those of other interventions (Haines B and Graham K 2005).

The Alcohol Linking Program evaluates the recent strategy of the adoption, implementation and subsequent outcomes of a computer-based program to enhance

police enforcement of liquor licensing laws. The program provides rapid intelligence data to police staff about the last place where people involved in police-attended incidents consumed alcohol and facilitate police enforcement planning (Wiggers, Jauncey et al. 2004).

- **Police strategies have weak evidence of effect, but new technologies should be evaluated for their effectiveness in reducing alcohol-related assaults**

## Targeted early intervention

### Pregnancy and early childhood

There is reasonable evidence of the efficacy of family home visiting to vulnerable and disadvantaged mothers through regular visits by a nurse from late pregnancy until the child is two years. Follow up at 15 years indicates that the young people have consumed less alcohol over the previous six months and have lower delinquency rates (Olds DL, Eckenrode J et al. 1997; Toumbourou, Williams J et al. 2005). Nevertheless the intervention effect is reduced if there is chronic domestic violence and staff are not trained to address this directly (Eckenrode, Ganzel et al. 2000).

### Family and other therapies

A new generation of family therapy focuses more on ecology [environment] than etiology (Liddle 2004). The rationale behind family-based therapies is that both protective and risk factors for substance use among adolescents are found within family structure and functioning, and the fields of developmental psychology and developmental psychopathology are the primary sources of evidence for treatment approaches. The binding principle between all the approaches is that dysfunctional family environments contribute to substance abuse problems and these in turn feed back into the family environment and create further dysfunction in a feedback loop (Liddle 2004).

A Cochrane review by Foxcroft et al of psychosocial or educational approaches to primary prevention of alcohol misuse by young people (25 years or less) found that the most promising intervention was the Strengthening Families program. Families were recruited through schools and attended 7 weekly family sessions of approximately 2 hours each. The effectiveness of the program on alcohol initiation increased over time (effect size 0.26 at 1 year, 0.36 at 2 years) and the number needed to treat analysis found that for every 9 individuals who received the intervention, 4 years later one less person will have reported alcohol use, alcohol use without permission or ever being drunk (Foxcroft, Ireland et al. 2002).

Liddle reports on a review of 13 controlled trials of outpatient family-based treatments which included adolescent alcohol use as an outcome measure. All 13 showed significant reductions in self-reported substance use and in 7 of the trials, the family-based therapies produced greater reductions than the alternative treatments evaluated, including individual therapy, adolescent group therapy and family psycho-educational drug counseling. Family-based therapies were as effective as a parent training group intervention and a 'one person' family therapy intervention. In 6 of 7 that included a follow up assessment, reductions in drug use were maintained for up to 12 months, a result superior to those obtained for adolescent group therapy or multi-family educational intervention (Liddle 2004).

Family-based therapies have also been shown to be as effective or better at reducing a variety of other risk or problem behaviours such as arrest and incarceration, co-morbid



psychiatric symptoms, poor school attendance and performance and poor parent-adolescent relationship compared to alternative treatments such as individualized cognitive behavioural therapy or supportive group therapy, parent-training group therapy, multi-family drug education (Liddle 2004).

Roe and Becker's review of drug prevention interventions in at risk youth cites one study in which a family-based intervention (Focus on Families) was delivered to substance using parents. Parents' drug use at 12 months was significantly reduced but there was no significant effect on children's drug use, however the program was centred on parents and did not include separate training with the children (Roe and Becker 2005).

- **Early intervention approaches including: home-visiting to vulnerable and disadvantaged mothers; newer family therapies; or psychosocial /educational approaches such as the Strengthening Families program are effective in reducing later adolescent misuse and alcohol-related social problems**

### School-based interventions

School-based intervention programs often target many forms of substance misuse. In the US, they are often abstinence focused, while Australian programs target responsible consumption of legal substances and alcohol misuse is included. Among approaches available for school-based programs, the most recommended effective approaches are Psychosocial approaches (information and skills including resisting pressure, problem-solving, decision-making, goal setting and assertiveness), compared with Affective-only or Knowledge/ information only approaches (Paglia and Room 1999).

A 2002 Cochrane review by Foxcroft et al examined primary prevention for alcohol misuse among young people up to the age of 25. They were unable to draw conclusions about the effectiveness of psychosocial and educational prevention interventions in the short and medium-term, because the programs were very heterogeneous and the effect sizes of positive outcomes were unconvincing. Further, many of the studies were methodologically limited and heterogeneous. Over the longer term, the Iowa Strengthening Families Program is showing promise as an effective prevention and intervention (Foxcroft, Ireland et al. 2002).

The Iowa Strengthening Family Program was targeted to families in late childhood. Their interventions involving communication skills and family management strategies for adolescents and parents (in separate groups) indicate that the program was as successful as parent education alone in discouraging youth alcohol abuse. Four year follow-up data has suggested the additional benefit of reductions in youth's hostile and aggressive behaviour. Excellent cost benefit analysis has also been estimated. (Toumbourou, Williams J et al. 2005).

There are few well evaluated strategies among school education studies (McBride 2005). Several strategic methods for improving future programs and behaviour effectiveness of school drug education interventions have been made and these include:

- Adopting adequate research designs
- Encouraging program planners to adopt a formative phase of development including piloting with students and teachers
- Implementing the programme at a significant point in youth development

- Ensuring programs are interactive and skill development focused
- Setting relevant behaviour change goals for all young people
- including booster sessions in later years
- including information of immediate practical use to young people
- providing effective teacher training for interactive delivery
- making effective programs widely available
- adopting marketing strategies (McBride 2005)

Further details are available from the National Drug Research Institute's systematic review (McBride N 2002). Details of the well evaluated West Australian School Health and Alcohol Harm Reduction Project (SHAHRP) are detailed in (McBride, Midford et al. 2000; McBride, Farrington et al. 2003; McBride, Farrington et al. 2004). Undertaken in metropolitan government secondary schools, the harm minimisation program aimed at non-use/delayed use, resulted in modest but significantly less risky drinking and a reduction in harms associated with students own use of alcohol. These results are similar to those found in well-designed and well funded American programs (Perry, Komro et al. 2003). None specifically address interpersonal violence.

Linking the Interests of Families and Teachers (LIFT) offered classroom social competence training and parent components with a reinforcement of social skills in the playground. Students received individual rewards for positive social behaviours but additional group awards were withheld if groups displayed negative behaviours. In a trial, grade five students showed lower rates of delinquent peer behaviours, lower arrests and less initiation of alcohol and drug use after three years.

A similar experimental trial in Seattle involving 800 children from high crime neighbourhoods also offered social competence and parent education with teacher training in effective classroom management. Outcome effects included an increase in school retention and bonding with long-term follow-up revealing moderate reductions in substance use and delinquency. Importantly, the program offered differential improvements for the most vulnerable students from the most disadvantaged backgrounds (Hawkins, Catalano et al. 1999).

- **School-based intervention programs often target many forms of substance misuse and are rarely well evaluated. In the US, many are abstinence focused, while Australian programs target responsible consumption where alcohol misuse is included**
- **Evidence for the effectiveness of school-based psychosocial (eg building peer resistance skills and educational (e.g. teaching alcohol harms) programs is mixed, however psychosocial approaches are the most recommended**
- **Methods for improving program effectiveness have been identified and require further evaluation to assess their impact on assault rates**

## Targeted adult interventions

### Brief interventions

Brief interventions (BI) are short sessions designed to assist an individual to modify a high-risk health behaviour and reduce the associated harms (Heather 2004; Roche and Freeman 2004). In essence, they are a secondary prevention measure that can be implemented in primary care settings. BIs are particularly attractive in the public-health approach to alcohol harm-reduction because:

1. they target individuals whose alcohol consumption patterns are associated with the majority of alcohol-related public harm, i.e. individuals whose drinking patterns are above the recommended levels (whether on a regular basis or through sessions of 'binge drinking'), but who are not dependent upon alcohol, and
2. their format has been evaluated for delivery in community-based settings routinely accessed by a great proportion of the population in such diverse locations as primary practice, emergency departments, specialist outpatient clinics, the justice system, educational institutions and licensed premises (as cited in (Heather 2004) pg 129).

Therefore the potential public health of BIs is high. One UK estimate (Anderson 1996) suggests that the total cost of identifying and advising a person with excessive alcohol consumption is £40 with an average reduction in alcohol consumption of 20% while a more recent cost-benefit analysis from the US (Heather 2004) found a US\$43,000 reduction in health care costs for every US\$10,000 invested in alcohol BI.

BIs comprise two essential components:

1. screening to identify an at-risk individual and
2. education: delivery of information on hazards associated with the behaviour, along with advice on reducing alcohol consumption (Anderson 1996).

In the alcohol domain, several screening tools e.g. FAST, AUDIT-3 (Roche and Freeman 2004) have been developed to enable speedy and accurate identification in the primary practice setting, of individuals who consume alcohol at high-risk levels. A number of research efforts are examining ways to improve GP capacity to deliver BIs (e.g. refer WHO collaborative Project on Identification and Management of Alcohol-related Problems in Primary Health Care - <http://www.who-alcohol-phaseiv.net/Phase%20I.htm>, <http://www.who-alcohol-phaseiv.net/phase%203.htm>). There is interest, particularly in the UK, but also in Australia, in the role that other primary health providers such as nurses could have in delivering alcohol-related BIs (Roche and Freeman 2004).

The information and harm-reduction component of alcohol-related BIs are hugely varied and range from as little as five minutes of advice to cognitive-behavioural therapy delivered over several follow-up visits (Heather 2004; Mulvihill C, Taylor L et al. 2005). Different authors have advocated distinguishing between the shorter more unstructured forms of BI and the more complex interventions incorporating elements such as behavioural therapy or follow-up visits, however no consensus in the research literature has been reached as yet.

The diversity in delivery method and content, along with differences in setting and population, makes it difficult to compare like with like and determine the most effective form of brief intervention. Further, several review authors caution that specific

population characteristics e.g. gender, baseline level of alcohol consumption and motivation to change, may have a significant impact on the effectiveness of specific forms of BI in any case and recommend further research into this (Heather 1996; Dinh-Zarr, Goss et al. 2004; Mulvihill C, Taylor L et al. 2005).

Reviews of alcohol BIs do reveal promising results in modifying alcohol consumption. One meta-analysis of eight RCTs has calculated that heavy drinkers who received a brief motivational intervention are almost twice as likely to decrease their consumption compared to those who did not receive the intervention. A systematic review of 12 RCTs of BI found a net reduction in weekly drinking of 13 to 34% (Mulvihill C, Taylor L et al. 2005).

There are few studies of BI that include inter-personal violence among their outcome measures, either directly or as an acknowledged component of a generic 'alcohol-related problems' measure. BI compared with no intervention or standard care have been shown to reduce alcohol-related social problems (e.g. with dates, friends), and to result in fewer arrests for assault, battery and/or child abuse (D'Onofrio and Degutis 2002; Dinh-Zarr, Goss et al. 2004).

- **There is good evidence that brief interventions are effective in reducing problematic consumption, but further evidence is required for more effective targeting of specific populations**
- **There is some evidence of the effect of brief interventions in reducing alcohol-related interpersonal violence**

#### University and sporting interventions

Several strategies have been implemented in universities to reduce hazardous university drinking and alcohol-related harm however they are all poorly evaluated. These have included:

- An environmental management approach including improved enforcement of local laws, safety awareness campaigns for off-campus students, comprehensive advertising and beverage service agreement with local bar owners (Gebhardt, Kaphingst et al. 2000)
- Targeting alcohol marketing practices at university bars, safety at private student parties, eliminating unsafe transport to licensed premises (Clapp and Stanger 2003)
- Banning alcohol at a university football Stadium (Bormann and Stone 2001)
- Investigating the relationship between protective behaviours and drinking consequences in order to implement an encouraging campaign for more soft protective behaviours (Delva, Smith et al. 2004)

Due to the poor evaluation it is not possible to confidently assume effectiveness in any of these cases.

- **Strategies to reduce risky or high risk drinking and associated harms in university and sporting settings are poorly evaluated and require further research**

### **Targeted strategies to vulnerable populations**

#### Indigenous community interventions

A comprehensive review of primary and secondary evaluation of indigenous Australian alcohol strategies was undertaken by Dennis Gray and Sherry Siggers of Curtin

University's National Drug Research Institute (Gray D and Siggers 2002). This includes details of a computer package for the monitoring and evaluation of night patrols and warden schemes, available free of charge to any organisation that wishes to use it. They have also developed a web-based database ([www.ndri.curtin.edu.au](http://www.ndri.curtin.edu.au)) with a comprehensive annotated bibliography. A major emphasis in this review is the political economy of alcohol and implications relating to the sale of alcohol to indigenous Australians, the under-resourcing of interventions and the need for more culturally sensitive and rigorous evaluation.

- Liquor licensing restrictions.
  - Licensing restrictions are under the jurisdiction of state and Territory governments. In remote and rural Australia, indigenous community organisations have sought restrictions through reducing trading hours and limiting the amount and type of alcohol (usually cask wine) that can be sold. In sound evaluations, these were found to lead to reductions in alcohol consumption, hospital admissions, women's refuge seeking and police incidents (D'Abbs and Togni 2000; Gray, Siggers et al. 2000). Compared with treatment and health promotion programs, they have been found to have a greater measurable impact (Gray D and Siggers 2002).
- Health promotion programs
  - The Victorian Koori alcohol and drug prevention project involved a broad range of treatment and prevention objectives to be implemented by Aboriginal drug and alcohol workers in four regional areas. Funding limited the program to education classes, sporting and recreational activities and support for homeless people. Qualitative process evaluation found these generally well-received but compromised by lack of support for alcohol and drugs workers, including additional counselling services undertaken by workers, for which they are not funded (Gray D and Siggers 2002).
- Other poorly or not-evaluated interventions in the ATSI community include,
  - counselling/treatment
  - support services
  - personal injury prevention e.g. serving alcohol in non-glass containers
  - alternatives to alcohol use, e.g. recreational educational training
  - employment and cultural activities
  - cultural initiatives
  - broad-based socio-economic interventions for example improving connection to country, employment opportunities and strategies focusing on control over Aboriginal people's own lives

There have been no evaluations of brief interventions among Aboriginal and Torres Strait Islander (ATSI) people, although there have been successful culturally sensitive interventions with Native American youths which demonstrated significant reduction in consumption for three and a half years (Foxcroft, Ireland et al, 2002).

- **It is highly recommended that the political economy of alcohol be a focus of ATSI alcohol and violence interventions**
- **Most evaluations are of rural or remote interventions and there is a need for well evaluated urban ATSI alcohol-related interpersonal violence interventions**
- **Liquor licensing restrictions have been found to reduce ATSI assaults and domestic violence rates**

- **Interventions in the ATSI community (including restrictions on access to alcohol or health promotion for responsible consumption), require more culturally sensitive and rigorous evaluation and better resourcing and support**

### **Interventions to reduce specific alcohol-related intimate partner violence (IPV) or sexual assault**

The majority of victims of partner violence and sexual assault are women (Krug EG, Dahlberg LL et al. 2002). There is global understanding that prevention and reduction of violence against women, including intimate partner violence and sexual assault (often co-existing) should aim to acknowledge the interplay of 'personal, situational, social and cultural factors' which are involved in perpetration, especially gender equality and poverty (Krug EG, Dahlberg LL et al. 2002). While alcohol is acknowledged to play an important role, major interventions to date have focussed on legal reform, police training, specialised services for victims, community campaigns, health sector reform and more recently and controversially, male behaviour change programs for perpetrators not alcohol-focussed violence reduction per se (Dobash RP, Dobash RE et al. 2000). Evaluation of these interventions has been limited, especially around the long-term impact on women. Important principles which have been developed to guide future interventions stress the importance of inter-sectoral collaboration and urge longer-term evaluations than those few conducted to date (Krug EG, Dahlberg LL et al. 2002; Wathen NC and MacMillan HL 2003). Other approaches have been a focus on early childhood development and schools-based prevention programs (Krug EG, Dahlberg LL et al. 2002; Wathen NC and MacMillan HL 2003). Only the latter have included a focus on drug and alcohol-related violence.

We were unable to find any specific (well evaluated or not) interventions to reduce partner violence or sexual assault associated with alcohol. Indeed, the only study we located (Barber JG and Crisp BR 1995) was a small South Australian strategy aimed at reducing alcohol-related harms among pre-contemplative dependent drinkers by training and supporting partners in a five stage application of 'pressures to change' to reduce harmful drinking. The newspaper-recruited sample was small (n=22), the intervention design compared three randomly allocated groups, individual or group-training compared with a 'wait-list' group and the evaluation was pre-test/post-test. While 7/16 sought help and 3/16 changed behaviours in intervention groups, there was no change among comparison, therefore significant change was in the intended direction. There were no significant beneficial effects on partners' life satisfaction or levels of distress (including marital discord) although again the trend was in a positive direction. The strategy, while monitoring violence, also appears to create the risk of it, by pressuring partners to change behaviours (Barber JG and Crisp BR 1995).

There have been several recent systematic reviews of interventions to reduce or prevent partner violence or violence against women in response to recommendations that health professionals screen all women (Ramsey J, Richardson J et al. 2002; Wathen NC and MacMillan HL 2003; US Preventive Services Task Force 2004). All reviews found insufficient evidence to recommend that professionals undertake 'screening' because there is no rigorous evidence that: professionals were confident, well trained and supported and would respond appropriately; interventions were effective or any long term evidence of benefit for women and children and not harm them. None of these reviews addressed the question of alcohol-related violence or victimisation directly.

There has been more recognition of alcohol-related problems among perpetrator interventions. Generally, although there are substantial problems with attrition, evaluations of rigorous programs (often combining behaviour therapy with gender analysis) have demonstrated a reduction in partner violence by those men who fully participate in male behaviour change programs and a significant improvement in quality of life for their partners (Dobash RP, Dobash RE et al. 2000; Gondolf EW 2000). Commonly, programs do not address alcohol misuse directly and in some cases, this may be a criterion for exclusion. One 1995 expert review of perpetrator intervention studies compared programs for different types of perpetrators, strategies and length of programs, but did not mention alcohol as an important factor at all (Tolman RM and Edleson JL 1995). In one large US study across four states (n=840), men with significant alcohol (or severe disorder) problems did not achieve the same level of violence reduction as those without the problem in male behaviour change programs (Gondolf EW 2000). Notably, one review identified significant reductions of partner violence among men completing individually based treatment of alcohol dependence (Testa 2004). Dinh Zarr et al compared cognitive behavioural therapy and cue exposure therapy found that the former reduced the risk of heavy drinkers committing assault more than the latter (Dinh-Zarr, Goss et al. 2004).

While interventions to reduce partner violence and sexual assaults have focused on societal, institutional and individual change, no intervention appears to directly address alcohol-related personal violence.

- **There are no well evaluated interventions targeted to reducing alcohol-related intimate partner violence or sexual assault**
- **There is no rigorous evaluation of interventions to prevent or reduce partner violence for long-term benefit of women and children**
- **There is no rigorous evaluation of interventions designed specifically to prevent alcohol-related intimate partner or other sexual assault**
- **Rigorous evaluation of perpetrator programs provides evidence of some reduction in partner violence, however, this is less effective when men have alcohol problems**
- **Evaluations of services which target treatment for both alcohol misuse and interpersonal violence should be developed and evaluated**

## Summary and conclusion

The purpose of this review was to identify evidence for the links between alcohol misuse and inter-personal violence and effective evidence-based interventions addressing alcohol-related interpersonal violence. Too few intervention studies include an alcohol-related interpersonal violence variable. In the majority of studies focussing on alcohol harm reduction, the main outcome measure is alcohol consumption, and inter-personal violence may or may not be incorporated within a broad alcohol-related harm category. The same case exists for alcohol measures within studies aimed at reducing interpersonal violence.

Accordingly, we included high quality reviews of alcohol and violence interventions. As these reviews acknowledge, the ability to form conclusions based on the evidence from primary studies to date is compromised because of the heterogeneity in program type, setting and definitions of outcome measures. Further, a number of studies are methodologically flawed; with common limitations including small sample sizes and lack of methodological and/or statistical rigour. There is a need for consistent measures and methodological rigour in future research.

We provided evidence of the strong association between alcohol and inter-personal violence and why alcohol is neither a necessary nor sufficient cause of violence. We provided a framework for the explanatory factors of this association, which moved outward from individual factors to those in the wider contexts of family, community and society. We argue that this provides the necessary conceptual model on which to base and develop effective interventions to prevent or reduce alcohol-related interpersonal violence.

There is no evidence of rising overall harmful population drinking trends in Australia. However, 10% do drink at risky or high risk levels for long term harm and the drinking behaviour of a small percentage of young Australians puts them at risk of harms. Young Victorian people are increasing their drinking at risky levels for short term harms.

There is good evidence to advocate for more investment in early interventions to reduce the development of alcohol misuse and intimate partner violence in adolescence and later life. There is also evidence to advocate for increasing the minimum age of legal drinking to maintain or reduce the proportion of young people at risk of longer or short term harm. Broad interventions at community level show promise, while better targeted and culturally sensitive evaluation could tell us which brief interventions are effective in reducing alcohol-related violence and which mix of policy and legal strategies is most effective.

Australia has a strong model for the rigorous development and evaluation of school-based psychosocial interventions. Evidence of the effectiveness of such interventions could result in their incorporation in national school curricula.

More research is required to fully understand the links between alcohol and physical and sexual violence against women. There has been a greater focus on harm reduction in the public sphere, and interventions for the prevention and reduction of alcohol-related violence against women in private domains should be developed and rigorously evaluated. All evaluations should take account of the socio-economic determinants of alcohol-related interpersonal violence.



The alcohol industry is powerful in Australia and globally. An anti-alcohol-related violence focus in media campaigns could counter the weight of industry advertising, which is prominent in e.g. sporting focussed programs. There is a need for rigorous analysis of the political economy of the alcohol industry and efforts to curtail over-representation of outlets especially in disadvantaged communities. Such a focus would be of particular benefit to Aboriginal and Torres Strait Islander communities where the burden of alcohol-related injury and death is disproportionately experienced.

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## Tabulation of key recommended articles on the links between alcohol and violence

Author	Date	Type and quality	Purpose	Major findings
Room, Babor and Rehm	2005	Expert narrative review (120 refs)	Reviews epidemiology of alcohol, health and illness, public health interventions, policy and research.	Reaffirms that relationship between alcohol, illness and death is complex and multi-factorial. Experimental effect size (0.22) correlates alcohol and aggression. Alcohol's pharmacological effect on the brain increases likelihood of aggressive behaviour. Relation also affected at population levels by consumption patterns between countries, resulting in differing risks for injuries and death.
Room and Rossow	2001	Expert narrative review (77 refs)	Analysis of the value and variability of attributable fractions for alcohol-related violence	Sufficient evidence to attribute qualified causation, even though there is no single invariant attributable risk at either individual or aggregate level data. Draws attention to evidence that cultures and patterns of drinking important, as well as overall volume. Accepts alcohol is neither necessary nor sufficient for violence, but in public health terms a reduction in alcohol will contribute to reduction in violence.
Bushman	1997	Meta-analytic review of over 60 studies	Tests the validity of three explanations of alcohol-related aggression	Physiological disinhibition, expectancy and indirect cause are all suggested explanations for alcohol-related aggression. Used balanced placebo designed analysis of experimental studies testing increased aggression. He argued results consistent with indirect (changes increasing person's likelihood to be aggressive) cause. Calculated mean effect sizes and found alcohol increased more in men (0.50, CI 0.41-0.58) than women (0.13, CI -0.20-0.45) but cautioned limits of experimental design
Lipsey, Wilson, Cohen et al	1997	Significant review (84refs)	Synthesis of experimental studies with animals; humans; and own meta-analyses of individual and aggregate level studies to explain	Good clear critique of study limitations-concept and measure issues. Also patterns - distinguishes studies of acute 'binge' and chronic alcohol consumption. Primate studies find moderator and interaction effects (eg status) and are inconsistent although some support for increased effect, especially of chronic consumption. Their prior meta-analysis of human experimental studies found mean effect size of 0.54 was modified by experimental design. Argued expectancy a factor, but study limitations urge caution. Further meta-analyses of surveys of criminal and domestic both chronic and acute drinking found largest mean correlation of 0.22 for domestic-chronic category; criminal-chronic 0.15; criminal-acute 0.15 and too few



			alcohol-related interpersonal violence	studies in domestic acute category. Conclude limited evidence, may be causal, more research focus on factors which aid prevention and harm minimisation.
Ito, Miller and Pollock	1996	Meta-analysis of 49 studies	Investigated 2 explanations for alcohol-related aggression and the moderating effect of alcohol dose	Significant mean effect size of 0.43 among heterogeneous studies suggests medium effect. Higher alcohol dose resulted in greater effect sizes. Problematic levels of heterogeneity between studies. They conclude that their paradoxical results provide support for the similar role of anxiety/inhibition conflict. Provocation and frustration affected by study design. Self focussed attention can reduce aggression and could be useful focus of intervention.
Chermack and Giancola	1997	Significant review of surveys and experimental studies (170 refs)	Reviews relation between alcohol and aggression and develops heuristic framework	Not systematic. Useful critical appraisals of situational factors such as provocation, benefits of social pressure, length of time after consumption, variability of threat (BAC levels/gender/personality) and self-focussed attention. Also gender differences, aggressive disposition, psychopathology, drinking experience etc. Their 'integrated biopsychosocial' model incorporates developmental influences, alcohol-related influences, individual differences and contextual influences that are not useful for research or testable.
Roizen	1997	Comprehensive, non-systematic review	Reviews epidemiological methods to analyse the link between alcohol and sexual violence (60 refs)	Outlines 6 dilemmas of research limitations. Looks at 'event-based' research of violent 'index' crimes esp. rape. Six studies (alcohol 13-50% of offenders and 6-36% victims) through various measures. Lower alcohol use by black compared with white offenders rarely analysed. Alcohol use twice as likely in rapes involving strangers compared with those involving primary relations - 44% compared with 21% and between men. Also more likely to involve sexual humiliation. 2/3 both drinking – role of victim precipitation?
Stith et al	2003	Systematic meta-analysis (over 120 refs)	Rigorous comprehensive meta-analysis of effect sizes for individual risk factors for partner violence	Systematic search, comprehensive selection criteria and analysis of 207 studies. Effect size analysis for both offenders and victims is presented in terms of exo-system (individual formal and informal support system) and micro-system (where abuse takes place) and ontogenic (intra-individual) factors. For alcohol (an ontogenic factor), significant effect sizes ranged from 0.18 to 0.57 for offenders and from 0.16 to 0.31 for victims. In the meta-analysis, offender alcohol use effect size was 0.24 (medium), <u>however</u> the studies were very heterogeneous and violence measure not adequately discussed. Similarly, the effect size for victims' alcohol use was 0.13 (small) but the studies were quite heterogeneous also and several important effects were or could not be calculated. Caution.

Graham, Leonard et al	1998	Rigorous research overview (134 refs)	Seeks to clarify what current research has illustrated, its limitations, a new framework and where research should now	Rigorous conference paper summarises the evidence to date about socio-cultural framing of intoxication and aggression; how personal factors moderate alcohol-related aggression (e.g. predisposition and expectations); how pharmacological effects can increase aggressive behaviour; how drinking contexts and environments affect behaviours and the process through which the interaction of the person, the situation and the environment combine. Outlines the limitations of this research and that of interventions. Well written.
Testa M	2002,	Rigorous research overview (109 refs).	Rigorous review of epidemiological and experimental studies of impact of men's consumption on sexual perpetration	Testa reviews associational, event-level and experimental studies. Associational studies find a correlation between alcohol and perpetration of sexual aggression, but the studies are limited by poor or narrow definitions of rape and sexual aggression. Further theoretical modelling showed strong sexual expectancies predicted consumption and through this via misperception to aggression and assault. Longitudinal studies showed some evidence of general deviance as a predictor of alcohol use and aggression. Event level studies show evidence for relationship of consumption and severity of outcome. Experimental studies provide some evidence of proximal effect and expectancy. Outlines research priorities including better measurement of sexual aggression, of indirect effects through context and understanding proximal effects better.

## Tabulation of key reviews/intervention studies

Author and date	Purpose	Population targeted	Setting	Quality	Findings
***Stockwell T, Gruenewald P et al, 2005	Reviews evidence for links and new directions for interventions in alcohol harm reduction.	All	All	Strong	Excellent book whose chapters by international and national experts summarise key studies on links to date and outline interventions to address them. Up to date, scholarly book. Highly recommended for anyone wishing a thorough and up-to-date overview of the alcohol and harm reduction field internationally but with a strong Australian focus.
Toumbourou et al, 2005	Examines evidence for effectiveness of interventions to reduce substance related harm	Children and young people	Family and community	Strong	Useful overview of social developmental interventions at all ages and stages. Clearly tabulate the scope and quality of controlled study evidence related to prevention strategies at the: <ul style="list-style-type: none"> <li>- family setting (preventing delayed pregnancy in young and vulnerable mothers; family home visiting; parent education; and family intervention)</li> <li>- school setting (school preparation program; school organisation behaviour management; and school drug education)</li> <li>- peer setting (peer intervention and education; youth sport and recreation programs; and mentorship)</li> <li>- community setting (community drug education; preventative case management; community mobilisation; health service reorientation; employment and training; law, regulation, policing and enforcement; social marketing)</li> </ul> <p>evidence tabulated in developmental stages also. Promising outcome efficacy related to use alcohol use and delinquency or hostile behaviour at all levels from pregnancy to birth, infancy in early childhood, primary school age of the lessons (school-based drug education) policy interventions and community mobilisation</p>
McBride, 2005	Evaluating effectiveness of school drug	School pupils	Schools	Strong	Clearly outlined systematic review of school drug education trials. Of the five primary studies, three primary studies reported significant effects and each required intervention over a number of years. One was classroom based, the other

	education programs				a comprehensive schools/community programme. The West Australian study (McBride et al, 2000) had an explicit harm minimisation goal and demonstrated effectiveness in reducing alcohol consumption, level of harmful and hazardous consumption and associated harms. Two other classroom based studies demonstrated effectiveness in males, high risk groups rather than the whole study groups and one of those was directed to preventing alcohol use (Shope et al, 2001). The chapter outlines recommendations for drug education practice and contextual and practical issues that impact on effective school drug education including epistemological differences between health and research academics and the education sector, and research issues.
Giesbrecht and Greenfield, 2003	Reviews (a) media campaigns and counter-advertising (b) laws and regulations (c) environment & policy levers	Whole population	Community	Medium	Substantial narrative review finds no definitive answer about whether alcohol advertising is a contributor to aggregate rates of consumption and drinking related problems and the impact on bans on advertising is inconclusive. Similarly, the effects of counter-advertising, especially warnings on drinks were inconclusive about the evidence of impact. However an experimental study of college students found that warnings did not increase perceptions of risk and made some products more attractive both drinkers and non-among drinkers. Finds support for a minimum legal drinking age and 21 in reducing alcohol-related problems but expresses concern about levels and types of enforcement. Argues support for alcohol prices & taxation as an effective measure in reducing drinking-related harm. Also acknowledges opposition from industry is substantial. Notes positive association between outlet density and interpersonal violence but expresses concern that further longitudinal data is needed to untangle the direction of interactions between density and problems. Finds contradictory evidence on the relationship between hours and days of sale and alcohol-related harm. RBS findings useful but inconclusive. Best incorporated into a more comprehensive intervention. Argues for a cumulative impact of more complex and comprehensive interventions.
Dinh-Zarr, Goss, Heitman, Roberts, DiGuseppi (2004)	Assesses the effect of interventions for problem drinking on subsequent injury risk	Strong **	'Problem drinkers' - alcohol dependence, alcohol abuse or hazardous		<ul style="list-style-type: none"> <li>▪ Interventions assessed from brief interventions to specialised and in-patient treatments.</li> <li>▪ Outcomes measures: injuries and injury death or their antecedents.</li> <li>▪ Meta-analysis was generally not possible because of heterogeneity in interventions, populations and outcomes studied.</li> <li>▪ 2 of 3 studies (out of 22 eligible, completed trials identified) reporting outcomes relating to inter-personal violence, showed that: domestic violence and assaults</li> </ul>

	Cochrane systematic review (update from 2002)		use		<p>were reduced when comparing interventions for problem drinking to no intervention.</p> <ul style="list-style-type: none"> <li>The third study compared two interventions delivered to 52 problem drinkers and found that at 12 months follow-up there was a reduced risk of committing assault after cognitive behavioural therapy compared to cue exposure therapy</li> </ul>
D'Onofrio, Degutis (2002)	Systematic review of evidence for success of screening and brief interventions that could be implemented in the emergency department setting.	Moderate 14/5	Inpatients, outpatients and college students, alcohol dependent or experiencing less-severe alcohol problems		<p>Alcohol-related problems were included as a secondary outcome measure and figures reported for two studies. (out of 27 that identified and combined with primary studies in a 1996 US Preventive Services Task Force report resulting in 39 studies (30 RCT and 9 cohort.))</p> <p>6 month follow-up of 18-19 year olds admitted to ED after alcohol-related event found that a 30 brief motivational interview compared with standard care resulted in fewer alcohol-related social problems (e.g. with dates, friends etc) <math>p &lt; 0.05</math>.</p> <p>Chick et al (1985) 156 18-65 yr old men inpatients, BI of 60 minutes also showed decreased alcohol-related problems</p>

## Appendix 1. Methodology

### Review focus

1. Review literature documenting evidence of links between alcohol misuse and inter-personal violence 1995-2005 inclusive
2. Primary and review literature documenting effective evidence based interventions addressing alcohol-related inter-personal violence 1999-2005 inclusive

### Literature Searching

We searched 16 electronic databases covering published medical, sociological and health-legal literature, (e.g. Cochrane, Medline, Cinahl, PsycInfo, Sociological abstracts, CINCH Health, Family). We further searched 29 Australian and International websites dedicated to reporting alcohol and violence research and policy, along with other Australian government sponsored websites known to provide local statistics on alcohol use and negative consequences. Dr Taft also retrieved relevant literature from her professional database and reference lists.

### Electronic Databases

The following search terms were developed to identify documents addressing both alcohol and interpersonal violence. They were used in conjunction with each individual database's unique set of corresponding thesaurus terms.

Alcohol	Inter-personal Violence
alcohol abuse alcohol misuse alcohol over-consumption excessive alcohol consumption alcoholic alcoholism alcohol problem problem drinking binge drinking harmful drinking hazardous drinking high risk drinking drunkenness alcoholic intoxication	inter-personal violence fighting domestic violence partner violence family violence spouse abuse wife abuse battered women domestic abuse partner abuse women abuse rape sexual abuse (not child sexual abuse) Alcohol-related: violence abuse harm injury condition assault problem death aggression

A published electronic filter designed to select systematic reviews with 'high sensitivity and reasonable precision' (CRD Medline filter No. 3: <http://www.york.ac.uk/inst/crd/search.htm>) was adapted to each database and used to select high quality reviews from among the citations produced.

The terms below in conjunction with each database's set of corresponding thesaurus terms were used to identify literature focusing on interventions in the public health, community, policy and legislative domains.

Public Health	Community Based	Policy and Legislative
Public health Primary prevention Health promotion Health education  Harm: minimisation prevention reduction violence/assault/aggression/ alcohol/ drinking/liquor: prevention reduction improvement initiative programme strategy curriculum education project campaign impact evaluation intervention  alcohol/ drinking/liquor: responsible safety	Community/peer/ club/school: intervention strategy involvement support system development programme campaign initiative project curriculum evaluation community wide nation wide state wide country wide city wide  Social norms/ social control/environment  Multi: level component facet faceted disciplinary inter: disciplinary  Mass media Prevention advertising	Health policy Violence/assault/aggression/ alcohol/drinking/liquor: policy control legislation laws policing modus operandi statute understanding legislation directive ruling regulation rule plan protocol guiding principle course of action guideline management recommendation procedure  alcohol/drinking/liquor: taxation outlet licensing

### Websites

The Publications, Resource and Research Sections of each website were assessed for evidence-based documents, including primary research reports, reviews, issues papers and policy statements. Where possible a website's own search facilities were used as well, by entering simple terms such as 'alcohol' or 'violence'. Some sites also gave access to research registers which were searched using key terms and pre-indexed categories as appropriate. (Refer Appendix 2 below)

### Selection Criteria

The citation abstracts and summaries produced by the above process were assessed according to the following criteria. Those that satisfied the criteria were retrieved where possible. It was found that too few intervention studies included an alcohol-related interpersonal violence variable to assess effective and evidence based interventions. The majority of studies focussing on alcohol harm reduction focus on alcohol consumption, and inter-personal violence may or may not be incorporated within a broad substance or alcohol-related harm outcome measure. The same case exists for alcohol measures within studies aimed at reducing interpersonal violence.

Accordingly, we modified our approach to select high quality reviews of alcohol and violence interventions that were identified in the above search even if alcohol-related interpersonal violence was not an outcome measure.

### Interventions

1. Published post 1998
2. a. Intervention is primary prevention in primary care or community setting (this excludes hospital emergency settings and psychologist-based behaviour change therapy)  
OR  
b. Indicates use of both IPV and alcohol measures or describes harm-minimisation strategies to reduce alcohol-related IPV, implemented in a primary prevention setting
3. Is not focused on self-directed violence, child or elder abuse, collective violence or alcohol-related MVAs
4. Does not have a clinical or genetic focus
5. National or population setting is relevant to Victorian context
6. Publication language English

### Reviews

1. Published post 1994
2. Systematic or meta-analysis or authoritative/comprehensive narrative review
3. a. Addresses links between alcohol misuse and IPV  
OR  
b. Interventions to reduce alcohol-related IPV (includes reviews of primary preventions in primary care or community settings or psychologist-based behaviour change therapy, does not include interventions in hospital emergency settings or other secondary or tertiary preventions)
4. Is NOT focused on self-directed violence, child or elder abuse, collective violence or alcohol-related MVAs
5. Does NOT have a clinical or genetic focus
6. National or population setting is relevant to Victorian context
7. Publication language English

### Indigenous or Minority Populations

1. Qualitative or Quantitative primary study describing impact of alcohol-related IPV in Indigenous Australian populations
2. Publication language English

### Primary Studies addressing links between alcohol misuse and violence

1. Government collected statistics on the Australian population
2. Addresses correlation or links between alcohol use and interpersonal violence
3. Published post 2000



### Selection of Articles

Documents retrieved using the above processes were assessed for quality according to the following criteria and relevance to the review's focus and the Victorian and Australian context. Literature of weak quality was not incorporated into the review unless it had particular relevance to the review focus.

#### Review Strength

Strong= score of 18-21

Moderate= score of 14-17

Weak = score of  $\leq 13$

#### A Aims clearly stated

1= Completely

2= Partially

3= No

#### B Search strategy

1= comprehensive search outlined

2= search is outlined but limited

3= source of documentation not revealed

#### C Definitions/measures defined

1= Yes

2= Partially

3= No

#### D Reporting on studies' outcomes

1= Tabulation or other method of display with complete information (e.g. population type, sample size, controls and interventions elucidated, outcomes measured, outcomes reported, quality of study)

2= Tabulation or other method of display with partial information

3= No

#### E Data quality of studies assessed

1= Yes and discussed when interpreting results

2= Acknowledged but not addressed when considering results

3= No

#### F Synthesis of studies' data

1= Comprehensive analysis or meta-analysis if appropriate

2= Partial analysis

3= No analysis

#### G Conclusions congruent with evidence

1= Yes with acknowledgement of all influences

2= Yes but focused on one aspect of the evidence

3= No

Appraisal of quantitative intervention studies was guided by The Cochrane Health Promotion and Public Health Field's 'Quality Assessment Tool for Quantitative Studies' (2005).

## Appendix 2. Useful Websites

### AUSTRALIAN DRUG AND ALCOHOL ORGANISATIONS

Alcohol and Other Drugs Council of Australia

<http://www.adca.org.au>

### AUSTRALIAN ALCOHOL RESOURCES PAGES

National Drug Research Institute, Curtin Institute of Technology

<http://www.curtin.edu.au/curtin/centre/ndri/>

National Drug and Alcohol Research Centre University of NSW

<http://ndarc.med.unsw.edu.au/ndarc.nsf>

### AUSTRALIAN VIOLENCE SITES

Australian Centre Study of Sexual Assault (ACCSA)

<http://www.aifs.gov.au/acssa/>

Australian Domestic and Family Violence Clearinghouse

[www.austdvclearinghouse.unsw.edu.au](http://www.austdvclearinghouse.unsw.edu.au)

### AUSTRALIAN GOVERNMENT SITES

National Alcohol Campaign

<http://www.nationalalcoholcampaign.health.gov.au>

National Drug Strategy

<http://www.nationaldrugstrategy.gov.au/>

### OTHER RELEVANT AUSTRALIAN SITES

The Australian Institute of Criminology

<http://www.aic.gov.au>

The Centre of Aboriginal Economic Policy Research, Australian National University

<http://www.anu.edu.au/caepr>

### INTERNATIONAL SITES

Alcohol studies database

[http://www.scc.rutgers.edu/alcohol\\_studies/alcohol/](http://www.scc.rutgers.edu/alcohol_studies/alcohol/)

European Monitoring centre for drugs and drug addiction

<http://www.emcdda.eu.int/>

National Institute on Alcohol Abuse and Alcoholism's Alcohol and alcohol problems science database

<http://etoh.niaaa.nih.gov/>

New Zealand Drug Foundation

<http://www.nzdf.org.nz>

World Health Organisation Alcohol drinking

[http://www.who.int/topics/alcohol\\_drinking/en/](http://www.who.int/topics/alcohol_drinking/en/)

### INTERNATIONAL VIOLENCE SITES

The Family Violence Prevention Fund

<http://endabuse.org/>

Minnesota Centre Against Violence and Abuse

<http://www.mincava.umn.edu/>

SafetyLit. (a free service of the Center for Injury Prevention Policy and Practice at San Diego State University in collaboration with the World Health Organization).

<http://www.safetylit.org/>

