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To the Research Director,

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Please find attached the correct and final submission document dated 27 October 2009.

Thank you for your understanding and li apologise for any inconvenience

Regards

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Parliamentary inquiry into alcohol-related violence

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28 OCT 2009

Law, Justice and
Committee



Parliamentary Inquiry into Alcohol-related Violence

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and Dr James Freeman

October 2009



*The Centre for Accident Research & Road Safety - Queensland
is a joint venture initiative of the Motor Accident Insurance
Commission*



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Executive Summary

Background

Alcohol consumption has been a popular leisure activity among Australian since European Settlement. Australians currently consume 7.2 litres per captia pure alcohol and Australia in regards to alcohol consumption is ranked as the 22nd highest country of 58 countries. Although the alcohol industry has provided leisure, employment and government taxes, alcohol use has also become associated with chronic health problems, crime, public disorder and violence. Drunken and disorderly behaviour is commonly associated with Pubs, Clubs and Hotels, particularly in the late night entertainment areas.

Historically, drunkenness and disorderly behaviour has been managed by measures such as floggings, jail and treatment in asylums. Alcohol has also been banned in specific areas and restrictions have applied to hours and days of operation. In more recent times alcohol policies have included extended trading hours, restricted trading hours and bans in some Aboriginal communities in order to reduce alcohol-related violence. Community and business partnerships in and around licensed premises have also developed in order to address the noise, violence and disorderly behaviour that often occurs in the evenings and early mornings.

There is an urgent need for the government to be more robust about implementing effective alcohol control policies in order to prevent and reduce the harmful effects of alcohol.

Best Practice harm Minimisation Measures

A large proportion of the Australian community are consuming alcohol in excess of the recommended 1-2 standard drinks per day. The misuse of alcohol has become a major public health concern and impacts greatly on police, emergency and hospital services. For instance, approximately 1800 people are killed annually in road traffic accidents in Australia and about a third of these deaths are associated with alcohol impaired driving. Additionally, a substantial proportion of incidents requiring police attendance involve alcohol. The involvement of alcohol in incidents and/or offences increase the difficulty and stress for police and other emergency workers. Alcohol-related violence appears to be concentrated in and around specific licensed premises, particularly late at night and on the weekends

A range of biochemical, psychological and sociological theories attempt to explain the complex link between alcohol and violence. This paper discusses the strengths and limitations of some of these theories. Controlled studies have found patients with injuries due to violence are far more likely to be intoxicated than patients injured due to other causes. The overall evidence from various experimental studies designed to test theories about the link between alcohol and violence support the notion that intoxication increases the risk of violence. Numerous international reviews about the effects of excessive alcohol consumption support the notion that the higher the average alcohol consumption then the greater number there will be of excessive drinkers; and the greater number of excessive drinkers in a population, the greater the extent of adverse health and social problems stemming from alcohol use.

In general, violence is caused by a multiplicity of factors involving the interaction of the biochemical effects of alcohol with the characteristics of the individuals, the setting and

other contextual issues. Night time violence is more likely to occur in and around licensed premises that are densely located and have extended trading hours. Creating environments in and around late night liquor trading premises that enhance public safety will reduce injury and violent behaviour. However, if the government is serious about reducing alcohol-related harms it must implement policies that:

- limit the density of alcohol outlets;
- reduce the availability of alcohol and the alcoholic content of beverages;
- deliver effective substance abuse programs in all schools;
- deliver brief screening alcohol intervention programs in all hospital emergency centres;
- make brief alcohol intervention programs mandatory for all first time convicted drink drivers and more intensive rehabilitation programs for repeat drink drivers;
- introduce toughened glassware to reduce the severity of assault related injury;
- ensure the persistent and consistent enforcement of liquor regulation through effective crime prevention programs such as the LEAPS program;
and
- prevent the promotion of excessive alcohol consumption.

The Impact of late Opening Hours on the Incidence of Alcohol-related Violence

The vast majority of research indicates that it is young males who are more likely to drink excessively and become involved in violence and crime. However, in recent times excessive alcohol consumption and disorderly behaviour has increased among young

females. Studies have indicated that about 50% of alcohol-related offences occur in and around nightclubs and pubs usually in the late evenings and early mornings on weekends. Offences involving alcohol are more likely to be related to property damage, offensive behaviour, traffic incidents, domestic violence and assaults. An increase in total sales of alcohol has been found to be followed by an increase in violent crime. Although the link between alcohol and crime is complex the availability of alcohol plays a significant role in violent crime rates.

Studies utilising sophisticated spatial and crime mapping techniques have demonstrated that areas in which alcohol outlets are densely located there is an increase in violence and disorder. However, it is acknowledged that the social characteristics may interact with densely located outlets to increase violent incidents. Generally, violent assaults more often occur in areas of high density hotels and pubs selling beverages with higher alcoholic content. Although the densities of licensed restaurants have been found to be associated with less violence they are strongly associated with higher levels of self-reported driving after drinking. The vast majority of assaults occur in and around clubs and hotels that have late night and extended trading hours.

The Impact of the 3am Lockout on the Incidence of Alcohol-related Violence

Some jurisdictions in Australia have introduced an early morning lockout in order to prevent patrons from entering or re-entering late night trading clubs and hotels. A detailed study of the Ballarat central business district lockout indicated that assaults in licensed premises decreased by 47.5% and assaults in public places decreased by 33%. The effectiveness of the lockout has been examined in Queensland by Palk and his colleagues. The studies were restricted to brief periods before and after the introduction of the lockout.

The findings were modest indicating some overall significant reduction in offences related to street disturbances (12%) and sexual offences (33%) in the Gold Coast area. In the Brisbane area some significant reduction in traffic incidents (13 %) and personal trauma (20 %) was observed. However, no significant reductions for assault related offences were observed either in the Gold Coast or Brisbane areas.

Interviews with licensees indicated that although all were initially opposed to the lockout due to the perceived negative impact on business revenue but little negative impact on business revenue was reported. In fact some licensees noted improved benefits such as improved patron safety and development of better business strategies to retain and increase patron numbers. Police and Security personal that were interviewed indicated that the streets were much quieter and that there were less disorderly incidents during the lockout period. Some problems with a rush on taxis at closing times were noted and a lack of public transport was a concern. A concern about patrons spilling onto roadways while lining to get into nightclubs as a safety concern was expressed.

The lockout in the Gold Coast areas appears to have been more successful than in the Brisbane areas. This may be due to a number of issues including:

- A highly coordinated police liquor licensing team (i.e., the LEAPS program);
- A long history of community partnerships and safety action programs;
- Extensive consultation prior to the introduction of the lockout;
- The majority of late night licensed premises are located in close vicinity;
- The way in which police data was recorded.

Overall, it appears that the lockout has some modest benefits and is one strategy among a multiple of strategies that should be applied to curb disorder and violence associated with the late night entertainment industry. The lockout strategy could be improved by:

- The increased presence of police and trained security officers in and around licensed premises;
- A specialised liquor licensing group such as the LEAPS program to consistently and regularly enforce liquor regulations;
- Increasing the penalties for breaches of liquor licensing laws;
- Ensuring sufficient public transport is available;
- Providing safe drink programs in licensed premises;
- Ensuring that bar staff and security officers are appropriately trained to deal with excessive drinking and disorderly behaviour; and
- Reducing the vehicular speed around late night entertainment areas and erecting footpaths barriers near entry points of nightclubs.

The Impact of Alcohol-related Violence and Reducing this Impact on Police, Emergency Services and Health Workers

Only a few studies have examined the prevalence and characteristics of alcohol-related incidents requiring police attendance. Palk and his colleagues found that a quarter of all incidents attended by Queensland police involved alcohol while 3% were drug related. Disturbances and vehicular incidents were almost twice as likely to be alcohol-related compared to other types of incidents. The findings highlight the tremendous impact alcohol-related incidents have on the resources of police and emergency services. Studies have also

found that patients presenting at accidents and emergency centres due to violence are two to five times more likely to be intoxicated than patients injured due to other causes.

In order to reduce the impact of alcohol-related incidents on police and emergency services, officers of these services must be sufficiently resourced and appropriately trained to deal with such incidents. Police and emergency services personnel should be constantly screened for work stress related problems and supported. Additionally, if the government is serious about reducing the impact of alcohol-related incidents on police and emergency services then they must implement a range of strategies (some of these have been mentioned) that will ensure lower and safer alcohol consumption levels. For instance, consideration should be given to reducing the alcohol content of beverages and reducing liquor trading hours. Licensees who repeatedly flout liquor licensing regulations should have their extended trading hours permit revoked.

Education Campaigns to cultivate effective social change in community attitudes to alcohol consumption

Educational programs focussed on scare and shock tactics about the dangers associated with excessive alcohol consumption are generally not effective, especially for young males. The most effective programs are those based on harm reduction and cognitive behavioural therapy methods with a focus on education, personal skills training and relapse prevention techniques. The best programs are well structured with clear goals that address alcohol concerns within the broader health context and involve the wider community. Low alcohol consumption should be promoted through positive messages via the media, schools and the wider community.

The role of parents in influencing attitudes towards alcohol consumption

Parents play a crucial role in encouraging and guiding children to adopt responsible and healthy attitudes towards alcohol consumption. Children reared in families that provide a lack of guidance and model excessive alcohol consumption are more likely to experience higher rates of alcohol consumption later in life. Vulnerable children with learning problems and hyperactively disorders are the most at risk for developing substance abuse and antisocial behaviour later in life.

Educational packages, community and school based programs can be very effective and efficient in providing parents with the information and skills to guide their children to adopt responsible attitudes to alcohol consumption. The school and wider community must consistently promote messages that encourage the avoidance of risky levels of alcohol consumption.

The economic costs of alcohol-related violence

Australia wide, it has been estimated that it costs just over 15 billion dollars annually to treat injuries and illnesses associated with alcohol misuse. Some 80,000 Australians are admitted to hospital on an annual basis due to alcohol misuse. Injuries and illnesses associated with alcohol misuse are on the increase. States in which the deregulation of the alcohol industry has occurred (e.g., 24 hour opening & an increase in alcohol outlets) experience higher rates of alcohol-related hospitalisations compared to States with tighter controls over the alcohol industry.

In Queensland some 15% of the drinking population consume alcohol at risky levels that result in long term chronic illnesses and about 34% drink at risky levels resulting in short terms harms (e.g., motor vehicle accidents, falls, Assaults & Suicide). The economic cost of treating alcohol-related injuries and disease in Queensland is 128 million dollars annually with approximately 700 deaths (mostly males) and some 26,000 hospitalisations annually.

The best way to reduce the social and economic costs of alcohol misuse is to reduce alcohol consumption and ensure the population consumes alcohol at safe levels. This is best achieved by increasing alcohol taxes, banning alcohol promotions and introducing tough intervention programs to prevent drink driving.

Concluding Comments

Alcohol violence and disorder is a major public health concern and has a substantial impact on police and emergency services. To reduce the overall alcohol consumption rates of the drinking population the government must be bold and resist the pressure of the alcohol industry lobbyists to deregulate the alcohol industry. In fact extended trading hours is associated with an increase in violence, disorder, traffic incidents and increased hospitalisations. Hence there is an urgent need for tighter controls over the alcohol industry. A multiplicity of strategies needs to be utilised to consistently promote the positive benefits of drinking responsibly and safely. Shock and scare tactics should be avoided. The education system, the wider community and the alcohol industry should be involved in promoting messages about the harmful effects of excessive alcohol consumption. Alcohol brief intervention programs should be available to all at risk young adults and vulnerable children exposed to antisocial and unhealthy lifestyles.

1. Introduction

1.1 Background.

Alcohol consumption has been a popular leisure activity among Australians since European Settlement in 1788. During the early 1800s alcohol intake among colonial Australians was around 13 litres per head of the population annually and this was similar to other Europeans in the United Kingdom (UK) and the United States of America (US) (Dingle, 1978, 1980). Although the per capita consumption rates in Australia have varied over the last two centuries (between 17 litres to 7.2 litres) they have been fairly constant since the end of World War II with a slight decline occurring towards the end of the 20th century and the beginning of the 21st century (Alcohol in Australia, 1988; Diehm, Seaborn & Wilson, 1978; Makkai & McAllister, 1998; Room, 1988; World Drink Trends, 2005). In 2005, Australians consumed 7.2 litres per capita pure alcohol and Australia was ranked as the 22nd highest country out of the 58 countries listed in the World Drink Trends (2005) in regards to alcohol consumption.

Although the alcohol industry has provided leisure, employment and government taxes, alcohol use has also become associated with chronic health problems, crime, public disorder and violence. The burden that alcohol poses for individuals from all classes of society, especially for Aboriginal Australians has been recognised since the beginning of European colonisation of Australia (Diehm et al., 1978; Lewis, 1988, 1992; Powell, 1988; Ward, 1987).

1.2 Historical Alcohol Control Measures

Drunken and disruptive behaviour has been commonly associated with Pubs, Clubs and hotels. In order to reduce drunken riotous behaviour a variety of alcohol control policies have been developed and implemented. For example, at the beginning of the 19th century as the first Australian colony began to grow, drunken and antisocial behaviour associated with alcohol was dealt with by flogging, imprisonment or work chain gangs (Diehm et al., 1978). In the gold rush years of the mid 19th century a policy banning liquor from gold digging areas to restrain the unruly behaviour backfired, resulting in a sly and cheap adulterated alcohol trade (Powell, 1988).

A concern during the early part of the 20th century was the social impact of excess drinking and how to deal with the chronic drunkard. At this time there was a change in policy thinking from regarding chronic drunkenness as a crime to be punished, to regarding it as a disease, or health problem that required treatment, usually in asylums. For example, the Inebriates Act (NSW) was passed in 1912 and the aim of that Act was to ensure care, control and treatment was provided for a person who habitually used intoxicating liquor or narcotic drugs to excess. The Act allowed habitual drunkards to be diverted from the prison system into special institutions.

It was envisioned that diverting drunkards to the health system would reduce criminal arrests for drunkenness. At that time arrests for drunkenness and drunken disorderly behaviour formed a large proportion of police work and impacted heavily on police and prison resources (Lewis, 1992). The Inebriates Act 1912 (NSW) has recently been reviewed to reflect modern medical practice, treatment options and legal safeguards.

Another alcohol policy influenced by the Temperance movement (anti alcohol campaigners) and drunken rioting by World War 1 soldiers, was the introduction of the 6:00 p.m. closing time in 1914 with the aim of reducing alcohol availability and excess consumption. Unfortunately, this policy resulted in working men who finished work generally at 5:00 p.m. rushing to the local hotel and jostling with one another to consume as much alcohol as they could before the 6:00 p.m. closing time (referred to as the 6 o'clock swill). This practice became entrenched into the Australian male macho culture for some 50 years until the 6:00 p.m. closing time ended in various states during the 1950s and 1960s (Luckins, 2007). Other policies and practices that permeated the Australian pub culture until the late 1960s and early 1970s included the legal drinking age of 21 years, banning women in public bars, weekend liquor trading restrictions and preventing Aboriginal people from entering or being served in most pubs in Australia.

In the last few decades of the 20th century government and policing agencies in Australia have become more robust about implementing evidence based alcohol control policies to curb the violence and public disorder associated with the late-night entertainment industry (see Heather & Stockwell, 2004, pp. 194-373). Some of these policies have involved experimenting with extended trading hours, restricted trading hours and even implementing alcohol bans in some Aboriginal communities. In addition, some densely located licensed premises have entered into voluntary alcohol accords in which codes of acceptable conduct for both patrons and staff have been implemented to facilitate responsible beverage service, safe drinking patterns and appropriate security measures to deter underage drinking and violence.

Key Findings:

Alcohol provides leisure, employment and taxes;
Alcohol Misuse has been a public concern in Australia since European Settlement;
Currently Australians consume 7.2 litres per capita of pure alcohol;
Australia is ranked as the 22nd highest alcohol consumer of 58 countries;
Alcohol has become associated with chronic health problems, crime and violence;
The burden of alcohol affects all classes of society especially Aboriginal Australians; and
Historical Alcohol Control Measures such as floggings, imprisonment; hospitalisation, earlier closing times and weekend restrictions have not reduced the health, violence and crime problems associated with alcohol misuse.

Resolution:

The Government must become more robust about discovering effective evidence based alcohol control policies to prevent and reduce alcohol-related adverse health effects and the violence, injury and public disorder associated with the late night entertainment industry

2. Best Practice Harm Minimisation Measures

2.1 Alcohol-related Chronic Harms

It is now well established largely through epidemiological research involving individual level, population level, aggregate and case control studies that excessive consumption of alcohol is linked to serious health and social harms (AIWA, 2000, 2002; Barbor, Caetano, Casswell et al., 2003; English, Holman, Milne et al., 1995; Gutjahr, Gmel, & Rehm, 2004; NHMRC, 2001; Steenkamp, Harrison, & Allsop, 2002). The evidence from meta-analytic reviews appears to be sufficiently strong enough to suggest that alcohol plays a causal role for at least a number of diseases such as cirrhoses of liver, coronary heart disease (CHD) and some forms of cancers (English et al., 1995; Rehm, Room, Monterio et al., 2003).

However, low to moderate consumption of alcohol (defined as drinking 1-2 drinks or 23g or less per day) in individual level studies have been found to have some protective effects in older people (>40 years) against mortality from ischaemic heart disease and ischaemic stroke (Agarwal, 2002; Barbor et al., 2003; Chadwick & Goode, 1998; Corrao, Rubbiati, Bagnardi, Zambon, & Poikolaninen, 2000; Puddy Rakic, Dimmitt, & Beilin, 1999; Single, Ashley, Bondy, Dobbins, Rankin, & Rehm, 1999). Nevertheless, the beneficial cardio-protective effects have generally not been observed in aggregate studies and even low levels of alcohol intake may increase the risk of breast cancer (Coutelle, Hohn, Benesova et al., 2004; Hamajima, Hirose, Tajima et al., 2002; Seitz & Becker, 2007; Single et al., 1999) and colorectal cancer (Ferrari, Jenab, Norat et al., 2007).

A substantial proportion of Australians engage in risky alcohol use (AIHW, 1999, 2002; NDRI, 2002; NHMRC, 2001; Williams, 2000). It has been estimated that of current Australian drinkers aged 14 years and over, 23% of males and 18% of females consume alcohol at risky levels for acute harms at least once a month (Chikritzhs, Catalano, Stockwell, Donath, Ngo, Young, & Matthews, 2003). While consumption of small amounts of alcohol (2 or less standard drinks in any one day) is considered safe under the standard guidelines (National Health and Medical Research Council, 2007), research has found that Australians who drink alcohol tend to drink more than the recommended amount (Australian Bureau of Statistics, 2004/2005). Since 1995, there has also been an increase in the rate of both males and females who drink at risky/high risk levels. The recent trends indicate higher increases for women than for men. Three surveys undertaken between 1995 and 2005 indicate that the proportion of females who drank at risky/high risk level¹ increased from 6.25% to 11.7%, while for males the increase in risky/high risk drinking² was from 10.3% to 15.2% (Australian Bureau of Statistics). This increase demonstrates the need for further intervention strategies to reduce the risky levels of alcohol consumption in society.

2.2 Alcohol-related Acute Harms

A harmful pattern of drinking has been associated with a variety of acute harms such as alcohol poisoning & injuries due to intoxication. Some of the acute harms most commonly associated with risky or high risk alcohol intake include: pedestrian injuries and fatalities; drowning; suicides; work accidents; crime; public disorder; road traffic accidents and interpersonal violence. (Boles & Miotto, 2003; Bryant & Williams, 2000; Barbor et al.,

¹ As measured by the consumption of five or more standard drinks in a single occasion.

² As measured by the consumption of seven or more standard drinks on a single occasion.

2003; Chikritzhs et al., 1999; Sinha & Easton, 1999; Steenkamp, Harrison, & Allsop, 2002; Williams, 1999, 2000). The misuse of alcohol is therefore a major public health and safety issue and impacts greatly on the resources of police, ambulances and hospital services.

2.3 Alcohol-related Incidents Requiring Police Attendance

Police are required to attend to a range of incidents in a diversity of situations such as road traffic accidents, licensed premises and the family home. For instance, approximately 1800 people are killed annually in road traffic accidents in Australia (ASTB, 2004) and alcohol is regarded as a major contributing factor (Single & Rohl, 1997). A blood alcohol concentration (BAC) above 0.05g/100ml has been recorded among those tested in a third of all driver and rider fatalities in Queensland in 2003 (Queensland Transport, 2005). Alcohol is also implicated in a large number of domestic disputes requiring police attendance. In one study it was found that 40% of police attendance at domestic violence complaints in New South Wales, Australia involved alcohol (Ireland & Thommeny, 1993). An earlier study conducted in Queensland, Australia reported similar figures (53%) (Arro et al., 1992). Domestic violence complaints are regarded as the most difficult of all alcohol-related incidents for police to handle (Findlay, Sheehan, Davey, Brodie, & Rynne, 2000). Furthermore, it has been acknowledged that the presence of alcohol generally increases the overall difficulty of police work (NPRU, 1993).

2.4 Assaults and Alcohol Use

Other alcohol-related incidents that typically involve police include assaults, especially those that occur in and around licensed premises (i.e., pubs, bars, clubs & hotels). The drinking that occurs in and around licensed premises largely involves young males who

engage in occasional excessive drinking as well as acts of violence and public disorder (Jochelson, 1997; Stockwell, et al., 1998). Although most of these incidents are not reported to police (Bryant & Williams, 2000; Lister, Hobbs, Hall, & Winlow, 2000), a household survey has revealed that 74% of respondents who had experienced an incident related to an argument, fight or injury had been drinking in a licensed premise either at the time of the incident or just prior to the incident (Stockwell, Lang, & Rydon, 1993). Understanding the link between alcohol and violence involves considering a variety of issues such as the misuse of alcohol in the context of an individual's environment and personality. For instance, factors such as the use of illicit drugs, overcrowding in licensed premises, underage drinking, cheap alcohol promotions and other environmental factors create an unsafe and problematic environment for both patrons and the general public.

2.5 Why do some people become violent offenders after consuming alcohol? What medical and psychological factors are involved?

Intoxication at the time of offending, or just prior to the commission of the offence has often been proffered by offenders as an explanation for their criminal behaviour. Surveys and self-reports of offenders reveal that a substantial proportion of them (40%-60%) admit to consuming alcohol prior to, or at the time of their offending behaviour (Bartholomew, 1985; Dingwall, 2006, Greenfeld, 1998; Pernanen et al., 2002; Richardson & Budd, 2003; Rossow, 2004). Hence, alcohol misuse may be a risk factor related to involvement in crime. There are a multiplicity of theories that attempt to explain the relationship between alcohol and crime. Some of these theories focus on singular explanations such as the disinhibiting biochemical effects of alcohol. Other theories are more complex and explain the link between alcohol and crime as involving the interaction of

contextual, learning and personality factors. The most prominent theories that attempt to explain the alcohol and crime nexus are discussed below.

2.5.1 Biochemical Effects of Alcohol

Research examining the biochemical effects of alcohol essentially involves investigating the effect of alcohol on the central nervous system (CNS) and how changes in the CNS produced by alcohol impacts on aggression, violence, sexuality, interpersonal conflicts and social anxiety (Kallmen & Gustafson, 1998; White & Humeniuk, 1994).

The pharmacological properties of alcohol have been clearly shown to produce a range of physiological, behavioural and psychological changes (for a review see Deitrich & Erwin, 1996). These changes are brought about by the effects of alcohol on particular aspects of the CNS. For example, the consistency of lipids in the neuronal membranes are changed by alcohol and the main inhibitory neurotransmitter, gamma-aminobutyric acid (GABA), is also affected, resulting in reduced anxiety and sedative effects (Deitrich & Erwin; White & Humeniuk, 1994). These authors have noted that experimental and observational studies indicate that as alcohol dosage increases psychomotor decrements occur, resulting in a reduced ability to react appropriately and quickly to surrounding events and cues. In fact, when alcohol is initially consumed, BAC increases and acts as a stimulant but as the alcohol is absorbed into the body, BAC declines, resulting in a sedative or relaxing effect (Dingwall, 2006; Martin et al., 1993).

The scientific literature (Deitrich & Erwin, 1996; White & Humeniuk, 1994) accepts that alcohol has wide spread effects on brain mechanisms including many neurotransmitters as well as the endocrine system. At the cognitive level it has been found that

alcohol reduces the ability to reason abstractly, and results in individuals being less concerned about their behaviour (Phil, Paylan, Gentes-Hawn, & Hoaken, 2003). This might explain why decision making becomes impaired and why some individuals are more likely to engage in risky and aggressive behaviours. The impact of alcohol on aggressive behaviour has been tested in a number of experimental paradigms involving a placebo (non alcoholic beverage) or a balanced placebo design in which expectancy effects and alcohol consumption are crossed (see Bushman, 1997; Exum, 2006).

A number of studies have demonstrated that drinkers have a variety of well-established expectancies or beliefs about the effect of alcohol (Brown, Christiansen, & Goldman, 1987; Leigh, 1989). These beliefs or expectancies need to be controlled in order to measure the effect of alcohol on behaviour. The balanced-placebo design is a method that has been used to distinguish between the biochemical and expectancies effects of alcohol and is described in Exum (2006). In this design, participants are randomly assigned to four groups (A, B, C & D) in which the placebo and alcohol conditions are crossed. For example, Group A will be told they will receive alcohol and they actually receive alcohol. Group B will be falsely told they will receive alcohol when in fact they will receive a placebo. Group C will be falsely told they will receive a placebo when in fact they will be given alcohol. Group D will be told they will be given a placebo and are actually given the placebo. Studies adopting a balanced-placebo design involving clinical trials using alcohol and a variety of drugs have shown that expectancies can have a marked effect on behaviour (McKay & Schare, 1999; Swartzman & Burkell, 1998).

There have been a number of meta-analytic reviews of studies employing the above paradigms (Bushman, 1997; Bushman & Cooper, 1990; Lipsey et al., 1997; Ito, Miller, &

Pollock, 1996). The Bushman and Cooper (1990) meta-analytic review examined some 30 experiments involving mostly male subjects and fictitious males in studies that used between-subject placebo designs. In addition, there were a small number of studies using other types of designs with mixed gender that were also examined. While noting the equivocal nature of the findings for some study designs, Bushman and Cooper (1990) concluded that alcohol does indeed facilitate aggressive behaviour.

A weakness in the studies reviewed by Bushman and Cooper (1990) were that they failed to distinguish between the effects of alcohol and the possible effects of provocation. Hence these types of studies may have only measured the effect of alcohol when participants were provoked (Bushman, 1997; Lipsey et al., 1997). As a result, a number of studies and meta-analytic reviews have examined the independent effect of alcohol and provocation (see Exum, 2006; Lipsey, 1997; Ito et al., 1996). These studies while supporting a causal role for alcohol in the facilitation of aggression also highlight the importance of affective factors such as provocation and methodological features in determining the strength of the aggressive response.

Importantly, the level of the provocative stimuli, for example, has been found to vary the intensity of aggression. High provocation tasks tend to elicit aggressive behaviour in both alcohol and non alcohol conditions while under conditions of low provocation intoxicated participants behave more aggressively than sober participants (Ito et al., 1996; Lipsey et al., 1997). In addition, Hoaken and Pihl's (2000) research demonstrate that the intensity of the provocation stimulus can be a more important predictor of aggression than alcohol, particularly for females. While these researchers found intoxicated men to be more aggressive than sober men, intoxicated and sober females tended to react with similar

levels of substantial aggression when provoked. Alcohol therefore seems to have a stronger influence on aggressive responses in low provocative interactions. However, in high provocative interactions the influence of alcohol is less important than the nature of the provocative stimulus in determining aggressive outcomes.

Randomised experimental studies based on a balanced-placebo design have shown promise in being able to determine the role of alcohol and the relevance of other psychological (provocation, frustration & beliefs) and social factors (setting) in contributing to aggression and other crimes. However, in respect of alcohol-related aggression studies, the dosage of alcohol and the type of stimuli used to elicit aggressive responses have varied greatly across experiments limiting the generalisability of findings. In addition, the laboratory nature of experimental studies may not always reflect real world situations. However, some experimental studies have included features similar to the natural environment (see Ito et al., 1996; Exum, 2006; Lipsey et al., 1997). These studies have generally found that alcohol is more likely to increase aggression in situations involving males consuming high levels of alcohol (mainly distilled spirits) particularly where reprisal to victims is possible, and other non aggressive response options are not available.

In the real world aggressive incidents associated with alcohol use occur during complex interactions among drinkers both in the bar room, and the domestic context. Consequently, personality and contextual factors may also contribute to aggressive behaviour. Nevertheless, alcohol may play a fundamental role in the escalation of violence and the severity of the injury experienced. For instance, a number of studies using representative patient samples at hospital accident and emergency centres have found that patients with injuries due to violence are two to five times more likely to be intoxicated than

patients injured due to other causes (Cherpitel, 1994, 1997, 2007). In one particular case-control study, injured male drinkers who had consumed excessive amounts of alcohol and sought treatment at hospital emergency centres were 30 times more likely to be involved in violence resulting mostly from fights in bars (Borges, Cherpitel, & Rosovsky, 1998).

Furthermore, injuries from assaults tend to be more severe when alcohol is involved (Martin & Bachman, 1997). Taken together, the evidence from accident and emergency centres lends support to the notion that intoxication greatly increases the risk of violence.

2.5.2 The Physiological Disinhibition Hypothesis

The evidence that intoxication is closely associated with acts of violence enhances the popular notion among drinkers that excessive alcohol consumption leads to a reduced ability to control their behaviour, particularly in situations of interpersonal conflict. The Physiological Disinhibition hypothesis promotes this kind of thinking and essentially states: the consumption of alcohol particularly at high levels weakens inhibiting forces located in the cortex of the brain resulting in a loss of control that would not normally occur when in a sober state (Bushman, 1997; Kallmen & Gustafson, 1998). In other words, when alcohol is consumed it weakens or disinhibits the normal motivations that generally restrain individuals from being impulsive and violent. The drinker's violent or aberrant behaviour is therefore regarded as being directly related to the biochemical effects of alcohol. However, it is noted that while animal and human studies on the direct effect of alcohol on aggression lend some support to this hypothesis, the findings have not been conclusive (Deitrich & Erwin, 1996; Kallmen & Gustafson 1998; White & Humeniuk, 1994).

2.5.3 Expectancy and Arousal Models of Alcohol-Related Aggression

However some researchers suggest that it is not the biochemical effect of alcohol that disinhibits motivations to restrain behaviour but rather it is the learned belief or expectation that alcohol weakens natural inhibitions (Goldman, Brown, & Christiansen, 1987). In this expectancy model of alcohol-related behaviour when the drinker expects excessive alcohol to cause aggression, then aggressive incidents are most likely to follow excessive alcohol consumption. These expectancies related beliefs may initially be acquired through instrumental learning at an early age. Over time, conditioning processes allow the drinker to associate certain kinds of behaviour and expectancies with the consumption of alcohol (Goldman, Brown, & Christiansen, 1987; Oei & Baldwin, 1994).

An earlier model of alcohol-related crime and violence called the 'time out' hypothesis (MacAndrew & Edgerton, 1969) shared similar views to the expectancy model of alcohol-related aggression. The 'time out' hypothesis contends that social norms and rules of behaviour vary across different social settings. The learned social norms and rules of behaviour can be culturally or situationally defined within and between societies. Although there are generally strict codes of morally accepted behaviour when individuals are sober, it is acceptable for these codes to be relaxed under the influence of alcohol. In this way intoxication provides a means for the drinker to have 'time out' (misbehave) from sober morally acceptable behaviour. Inappropriate behaviour therefore is regarded as the expected norm of excessive alcohol consumption among the drinking population.

However, some research has demonstrated that most drinkers do not regard it as appropriate for themselves or other drinkers to act in a manner that contravenes morally acceptable behaviour (Gustafson, 1991). In addition, as noted in Barbor et al. (2003) some

cultures such as those in Northern Europe, Australia, US and the UK appear more likely to drink in environments such as bars and nightclubs. These environments seem to attract large crowds and are often associated with excessive alcohol intake that increases the risk of violence and disorder. In contrast, other cultures particularly those in Latin countries (i.e., Southern Europe) are more likely to consume alcohol in the home with meals on a regular and moderate basis in which violence and disorder rarely occur.

Although a number of studies have found that participants act in accordance with their expectancies about the effect of alcohol when under the influence of a placebo, the overall findings from meta-analytic reviews of experimental studies suggest the link between expectancy and aggression is tenuous (Bushman, 1997; Bushman & Cooper, 1990; Exum, 2006). Gender differences have also been observed with respect to the relevance of expectancy to alcohol-related aggression. For example, male perpetrators in intimate partner assaults were more likely than female perpetrators to believe that alcohol caused them to lose their temper (Kaufman-Kantor, & Asidigian, 1997). Kaufman-Kantor and Asidigian also noted that male perpetrators under the influence of alcohol were more likely to be violent during times of arousal and increased heart rate. The authors suggested that it is therefore possible sensations of physical arousal induced by alcohol are mistaken for feelings of aggression.

Sensations of physical arousal can be induced by alcohol as alcohol increases the concentration of epinephrine and norepinephrine in the blood stream that leads to an increased intensity of behaviour (see Kallmen & Gustafson, 1998). This has been referred to as the arousal hypothesis that relates aberrant behaviour to arousal induced by alcohol. Support for the arousal hypothesis has been limited (Bushman, 1997; Kallmen & Gustafson,

1998). However, a review of the evidence in respect of the disinhibition hypothesis and the 'time out' hypothesis has also received only partial and unambiguous support (Kallmen & Gustafson, 1998).

The validity of three possible explanations of alcohol-related aggression (disinhibition, expectancy & the indirect cause model) has been examined by Bushman (1997). The disinhibition and expectancy models and their related research have been described in more depth previously. To reiterate, the disinhibition model suggests alcohol directly increases aggression by its sedative effects on brain mechanisms that usually inhibit aggressive behaviour when unaffected by alcohol. The expectancy model asserts that alcohol increases aggression because people have learnt to expect aggression to be associated with alcohol.

2.5.4 Indirect Cause Model

According to the Indirect Cause Model, alcohol facilitates aggression indirectly by bringing about a number of cognitive, physiological and emotional changes including impaired intellectual ability and reduced awareness of risks. These changes coupled with the stimulating effects of alcohol and other methodological features (e.g., type of alcohol, alcohol dosage & gender) as well as external affective factors (e.g., provocation & frustration) increase the likelihood of aggression. Bushman's (1997) review of experimental studies on alcohol-related aggression found that there was a much stronger support for an indirect cause model rather than a disinhibition or expectancy model.

2.5.5 The Availability Theory

While the Indirect Cause Model provides a more complex explanation for alcohol-related crime and violence, there is a belief that if alcohol's availability was reduced, then overall population consumption levels would decrease resulting in the diminution of alcohol-related harms (see Bruun, Edwards, Lumio, Makela et al., 1975). The aforementioned research highlighted the relationship between per capita alcohol consumption levels and alcohol-related harms. This research has led to the development of the Availability Theory which proposes three main propositions outlined in Single (1988).

1. *the greater the availability of alcohol in a society the higher the average consumption of its population;*
2. *the higher the average consumption of the population then the greater number there will be of excessive drinkers; and*
3. *the greater the number of excessive drinkers in a population the greater the extent of adverse health and social problems stemming from alcohol use.*

There have been numerous international reviews often examining the same set of data to test the veracity of the Availability Theory (see Casswell, 1991; Edwards, Anderson, Barbor et al., 1994; Eliany & Rush, 1992; Guenewald, 1993; Holder, 1993; Peacock, 1992; Single, 1988, Smith, 1988a). The research examined in these reviews seems to provide evidence for the second and third propositions of the Availability Theory but the research regarding the first proposition remains controversial. Establishing the first proposition has proven difficult due to the variation in research methods across different cultures. For

example, different measures of drinking behaviour and problem behaviour, as well as alcohol intake have been used.

There are a multiplicity of theories that regard alcohol as only one factor, perhaps even a minor one, among a variety of factors (cultural, environmental & dispositional) that contribute to crime. As these theories are comprehensive only a few relevant ones will be highlighted (see Goldsmith, Israel & Daly, 2003 for a review of psychological & social explanations of crime). Sociological theorists would consider alcohol misuse as part of a pattern of wider social disorder concerns within a community that bring about crime. For example, there are a number of theorists such as Sutherland, Thomas and Znaniecki as well as Shaw and McKay (see Bursik, 1988; Snodgrass, 1976 for reviews) who advocate that crime and deviance are more likely to occur in areas where there is an absence or breakdown in communal relations and social order. This theory is commonly referred to as the Social Disorganisation Theory.

2.5.6 Social Disorganisation Theories

Theorists like Shaw and McKay argue that when both informal controls (Customs, Traditions, Norms & Social Values) and formal controls (School, Church, Family & Local Government) are absent or broken down, then disorder results. The research base used to support this theory often relies on official crime statistics that demonstrates crime and violence are far more prevalent in areas close to the city (often associated with rapid change) and characterised by low education, substance abuse as well as poor unemployment. However, the theory has been criticised for failing to consider all types of crime across a variety of socioeconomic areas. In addition, the theory fails to consider the

importance of internal motivations in committing crime and does not clearly demonstrate that the areas with high crime rates are completely without some form of social order.

A variant of the Social Disorganisation Theory is the Broken Windows Theory developed by Wilson and Kelling (see Kelling & Coles, 1996; Wilson & Kelling, 1982). These authors suggest that if some form of disorder is evident such as decay, broken windows, graffiti, and abandoned housing, this signals public disinterest leading to crime. Their theory was based largely on observations made by operational police that call outs to incidents and crime tended to be in areas that were neglected and rundown. These areas were often characterised by poverty, drug dealing and an abundance of individuals with alcohol-related problems. Wilson and Kelling also contended that even minor disorder if not addressed diminishes informal social controls resulting in both an increase in fear of crime and more serious crime. Pubs, bars and clubs for example, that are not well maintained, can be viewed as a kind of broken window in which disorder and violence can be observed. Licensed premises most likely to be problematic, are those that are less well maintained with irresponsible serving practices and attitudes held by staff that support resolution of conflicts through violence.

A policy implication of the Broken Windows Theory has been the introduction of Zero Tolerance Policing in some policing jurisdictions in Australia, but more commonly associated with New York City and the US. The philosophy of Zero Tolerance Policing is that minor misdemeanours must be pursued with the same vigour as serious crime. It is believed that punitive action even for minor violations will reduce crime rates and prevent more serious types of crime. However, both the theory of Broken Windows and Zero Tolerance policing are regarded as controversial and remains unproven (Gladwell, 2002). Such a theory

fails to address important factors such as encouraging adherence to a set of community values and norms that promote social order and pride in the community.

2.5.7 Social Control and Learning Theories

The Social Control Theory also referred to as Bonding Theory has highlighted the importance of strong social attachments to the values and norms of the community in order to achieve social order. This theory is most often associated with Hirschi (1969) and regards crime and alcohol-related problems as an outcome of weak social and personal commitments. Social and personal attachment to one another as well as to the community are viewed as developing through the process of acculturation and learning in which community members become attached and committed to common values and goals that promote strong bonds and social order. When bonds and attachments to peers, school and parents are weak, then young people tend to reject the common values and become involved in school truancy and the misuse of drugs & alcohol. However, Bonding Theory has been criticised for not clearly defining their main terms and providing an explanation for all types of crime (Lilly, Cullen, Ball, 1995, p. 99). While there has been a plethora of studies testing bonding theory only a few bonding variables are often examined and studies have been mostly cross sectional in nature (see Ozbay & Ozcan, 2006 for a review). Although most cross sectional studies demonstrate the importance that social bonding variables play in the explanation of delinquency, longitudinal studies have been mixed (Ozbay & Azcan, 2006).

Although Bonding Theory acknowledges the role of learning in developing appropriate attachments to community values the Theory of Social Learning appears to provide a more thorough and sophisticated explanation for crime and deviance.

The principals of social learning and its theoretical underpinnings have been primarily developed by Bandura (1977). Bandura has reviewed the empirical evidence in support of social learning theory which he also refers to as social cognitive theory (Bandura, 1986). The key principal of social learning is that individuals learn by modelling or observing others. The modelling process involves attentional, cognitive and motivational processes that impact on behavioural outcomes and explain variances among individuals. Both psychological and environmental factors are therefore important in determining behaviour. Criminal behaviour is like any other behaviour and can be viewed as an outcome of an individual's learning experience.

Social Learning Theory has been refined and expanded by Akers (1998, 2003) who has been mainly responsible for demonstrating how social learning and social structure (e.g., population density, sociodemographics, anomie or social disorganisation) can be influential in developing crime and deviance. Akers applied the principles of reinforcement and operant conditioning and expanded on a number of constructs (differential association, definitions, imitation, differential social reinforcement, social & non social reinforcement measures) to explain alcohol and drug use as well as criminal behaviour. He suggested that criminal behaviour can be learned in non social situations that are reinforcing or discriminative as well as through social interaction in which the behaviour of other persons is reinforcing or discriminative towards criminal behaviour.

A large body of empirical work examining the effectiveness of social learning in explaining deviant behaviour has been established (see Akers, 1998). This theory is now regarded as one of the most important explanations of criminal behaviour and its validity seems to be supportive by the research (see Krohn, 1999). However, Social Learning Theory

has been criticised for paying little attention to the opportunistic nature of crime (Jeffery, 1990, pp. 261-262) and political and economic factors that impact on crime (Halsey, 2003, p. 86). Ambiguities and problems with the theory as well as the need for further development have been acknowledged by Akers (1998).

Another theory that builds on an earlier version of the social learning theory developed by Rotter (1954, 1982) is the Problem Behaviour Theory (PBT). The concepts of value and expectation in Rotter's theory as well as Merton's (1957) understanding of anomie were instrumental in guiding the development of PBT. PBT was primarily designed in the 1960s by Jessor, Graves, Hanson, and Jessor (1968) to examine alcohol abuse and other problem behaviours. Jessor and his colleagues generally define problem behaviours as those involving alcohol and illicit drug use, and behaviours that contravene normal conventions, such as risky driving and sexual promiscuity. The theory emphasises the relevance of person (e.g., values & beliefs) environment interaction in formulating prosocial and problem behaviour. In more recent times PBT has been reformulated and extended focussing on adolescents and the factors that effect development through to young adulthood (Jessor, Donovan, & Costa, 1991).

Empirical research encompassing both cross sectional and longitudinal studies has identified a number of common causes and psychosocial risk factors associated with problem behaviour (Donovan, 1996; Donovan, Jessor, & Costa, 1999). These include poor attitudes to academic pursuits, low school grades, association with peers who approve of, or engage in problem behaviours, and a lack of connectedness to parents. Donovan and his colleagues have found a high correlation among the various problem behaviours and their common psychosocial risk factors seem to make young people prone to developing problem

behaviours. Alcohol use is regarded as just one risk factor that is linked to a variety of psychosocial risk factors that are prevalent during adolescence. In addition, it has been found that heavy drinkers who share a common history or predisposition towards attitudes supportive of problem behaviours and hostility are more likely to be predictive of violent assault than light drinkers with a similar common predisposition (Zhang, Wieczorek, & Welte, 1997).

According to Gottfredson and Hirschi (1990) the predisposition of the individual is fundamental to the development of criminal behaviour and other problem behaviours such as alcohol misuse. These authors contend that low self-control is a predisposition or trait that develops early in childhood and is the prime cause of social deviance. While it is claimed that social factors (e.g., poor learning & antisocial peers) and ineffective parenting contribute towards the development of this low self-control trait, it remains enduring throughout the lifespan and is not subject to extinction through re-learning. Evidence of low self-control according to Gottfredson and Hirschi (1990) can be observed in individuals who are prone to being impulsive and taking risks, particularly when opportunities arise to obtain short term benefits that require little planning. The Low Self-Control theory is regarded as a general theory of crime, as it contends that all forms of crime across the life span can be attributed to the trait of low self-control. Those with high self-control are regarded as far less likely than those with low self-control to engage in crime.

A meta analysis of 21 different empirical studies have found support for the relationship between low self-control, criminality and other forms of risky behaviour (Pratt & Cullen, 2000). However, Vold, Bernard and Snipes (2002) note the idea that low self-control is a life long stable construct formed in early childhood is yet to be determined

empirically. A major criticism of this general theory of crime is that crime statistics demonstrate that the majority of criminal activities are undertaken by young males and significantly declines with age (Shoemaker, 1996) suggesting a maturing out of crime effect. This contradicts the idea that low self-control remains constant throughout the various stages of life. However, Gottfredson and Hirschi (1990) address this criticism by arguing that it is the diminishing opportunities to commit crime that explain why older people with low self-control appear more prosocial, rather than any change in the trait of low self-control. While there is some empirical support for some of the contentions of the Low Self-Control Theory (Larange & Silverman, 1999) a general theory to account for all types of criminal behaviour remains to be demonstrated (Akers, 1997; Paternoster & Brame, 1997).

2.5.8 Place Based Theories of Crime

Although the aforementioned review of crime theories has demonstrated that there are a variety of psychological, sociological and dispositional explanations for the association between crime and alcohol use, the importance of place and time to explaining alcohol-related crime has obtained prominence in the last few decades.

This has been due to the development of computer crime mapping and geo-referencing (for a reviews see Eck & Weisburd, 1995; Lersch, 2004) that has facilitated the temporal and spatial analysis of crime. Crime mapping technology has shifted the focus of understanding alcohol and crime from the individual, to an emphasis on the time and place of the crime.

Perspectives that emphasise the importance of place and time in the occurrence of crime include rational choice theory, routine activity theory and crime pattern theory. All of these theories suggest that crime is not a random event, and this notion is supported by a

number of researchers demonstrating that most crime is concentrated in certain places at certain times referred to as 'Hot Spots' (Block & Block, 1995; Jochelson, 1997). Most alcohol-related assault seems to occur late at night, on weekends and in the early hours of the morning whether in the home, on the street or in licensed premises (Briscoe & Donnelly, 2001a; Homel et al., 1997; Teece & Williams, 2000). Traffic accidents, drink driving offences and assaults peak after midnight around the closing times of liquor trading places (Chikritzhs et al., 1997; Smith, 1988ab) and when closing times are varied, a shift in the pattern of drink driving offences and traffic accidents appears to coincide with the new closure times.

The time and place of a crime is important to rational choice theory as this perspective suggests offenders make a rational choice (though it may be unsophisticated) about when where and how to commit the offence as well as whom they intend to target (Cornish & Clarke, 1986). According to the routine activity theory of crime, offenders are motivated to identify suitable targets in the absence of capable guardians, intimate handlers, controllers and place managers (Cohen & Felson, 1979; Eck & Weisburd, 1995). Guardians, intimate handlers, controllers and place managers, when they are present, are likely to influence offenders not to commit offences and include individuals such as parents, teachers, friends, employers, security guards, bouncers and police.

Crime pattern theory (see Eck & Weisburd, 1995) combines routine activities (Cohen & Felson, 1979) and rational choice theories (Cornish & Clarke, 1986) to explain the temporal and spatial variation in crime. This theory suggests that crime is more likely to occur at specific times and places during the routine activities of motivated offenders who make rational choices about the risks and benefits of their actions. When the risk is reduced by the absence of capable guardians such as intimate handlers (e.g., spouse or influential

friend), controllers or place managers (e.g., security officers & police) to regulate behaviour, offending is more prevalent. Crime pattern theory also regards social and physical characteristics of the environment as well as the presence of alcohol as factors that contribute towards offending behaviour.

The interaction of offenders and their physical and social environments are necessary features of crime pattern theory. As noted by Eck and Weisburg (1995), places are necessary for the occurrence of a crime and their characteristics may be influential in increasing the likelihood of an offence happening as well as determining the type of offence. For instance, specific features of some localities such as abandoned buildings, public disorder, broken windows, licensed premises, schools and public housing have been shown to be associated with increased crime activity (Block & Block, 1995; Rossmo & Fisher, 1993; Wilson & Kelling, 1982). In particular, places in and around licensed premises are associated with increased violence and disturbances at specific time periods (Homel et al., 1997), especially where they are located in close proximity and have similar closing times (Rossmo & Fisher, 1993). The social activity of a place may therefore interact with the physical environment of a place to increase the probability of a crime occurring.

Crime prevention strategies may therefore be enhanced by including an analysis of criminal activity in terms of discrete time units at specific locations. Once this intelligence is gathered, specific times and locations could be targeted with a coordinated approach that incorporates intensive legal enforcement, community and environmental strategies. Crime pattern theory provides a model for understanding how, when and where crime occurs. Crime pattern theory is essentially a control theory of crime and while this theory does acknowledge the role of experience and learning, it places more weight on situational

factors regarding these as the prime determinates of crime. Crime pattern theory is regarded as a limited approach by theorists who suggest the emphasis should be on personality and social/behavioural factors when attempting to explain the causes of criminal activity. For example, as mentioned Gottfredson and Hirschi (1990) regard the underlying personal construct of low self-control as a main cause of crime in general. In contrast, social learning and interaction with peers has been emphasised by Bandura (1977) and Akers and Jensen (2007) as important factors contributing to behaviour.

While it is acknowledged that Place Based theories do not focus on the characteristics and social learning that may contribute to deviant behaviour, they do offer opportunities to explore the frequency of crime and identify when and where crime occurs. This information can be utilised to develop interventions to control and reduce harmful behaviour on a large scale, and in a cost effective manner. Theories that are offender centred tend towards offering individual therapies that can be costly and time consuming with little impact on the immediate deviant behaviour. The therapy is also dependent on the willingness of the individuals to modify their behaviour. Place Based strategies on the other hand, attempt to reduce crime by manipulating key environmental factors that are viewed as providing opportunities and inducements to engage in socially deviant behaviour.

Key Findings:

Alcohol misuse is involved in a high proportion of violence and crime;

Violence is caused by a multiplicity of factors involving the interaction of the biochemical effects of alcohol, psychological, physical and emotional characteristics of the individual, the availability of alcohol as well as learning experiences and environmental factors;

Alcohol-related violence is concentrated in certain places and at specific times (mostly in and around licensed premises, late at night and on weekends);

The presence of alcohol increases the difficulty of police work;

Placed based theories of crime provide a practical explanation of the complex relationship between alcohol and violent behaviour and offer effective preventive measures to reduce the social and health harms associated with excessive alcohol use;

Density of alcohol outlets and ineffective management and control of these outlets (particularly bars and clubs) are closely associated with an escalation in violence and public disorder; and

Patients with injuries due to violence are two to five times more likely to be intoxicated than patients injured due to other causes.

Resolutions:

Reducing the availability of alcohol and the alcoholic content of beverages has potential to reduce the social and health burdens of alcohol misuse;

Preventing excessive consumption of alcohol and encouraging safe levels of alcohol intake has the potential to reduce injuries and violent behaviour thus reducing the impact on police and ambulances resources as well as Hospital emergency and accidents centres; and

Creating environments in and around late-night liquor trading premises that enhance the safety of patrons will reduce injury and violent behaviour.

In the next section the effectiveness of preventive initiatives arising from Place Based theories as well as the effectiveness of other policing approaches and alcohol control measures to reduce alcohol-related harmful behaviour is explored.

2.5.9 What measures are there to reduce harm? How effective are these measures?

It has been noted above that modelling and learning are powerful precursors to future behaviour. If children are exposed to parents and older people that promote excessive drinking and have antisocial attitudes then these children are at high risk of becoming delinquent, violent and substances abusers in later life. There are a variety of effective early prevention programmes based on cognitive behaviour therapy that can be

utilized to teach problem solving and interpersonal skills (see McMurrin, 2006). The most effective school based programmes are taught in the context of broader health skills and are delivered before behavioural patterns are established. Additionally, these programs are goal directed, deliver consistent messages across the school environment, teach social resistance skills and address values and attitudes (McBride, Midford, Farrington, & Phillips, 2000; Shope, Kloska, Dielman, & Maharg, 1994; McMurrin, 2006).

However, school based substance abuse programs are not widely or consistently implemented. Additionally, factors such as parental and child resistance and lack of time for teachers and resources impede the success of such programs. The government needs to adopt a policy that ensures school based substance education programs are adopted and delivered on a wide scale and consistent bases that involves the broader school community. This strategy would ensure that the majority of the population are exposed to skills at an early age that would assist them to be more resilient to norms that support delinquency, bullying and alcohol misuse.

Although school based substance intervention programs are limited it is possible that children who are not exposed to these programs can be targeted when they experience injuries as young adults. For example, brief interventions that focus on providing a minimal and early intervention approach have been used to reduce injuries and harms associated with risky and high risk alcohol consumption within the broader public health context. The efficacy and effectiveness of brief interventions have been demonstrated in numerous studies (see Collins, Carey & Sliwinski, 2002; Moyer & Finney, 2004/2005; Walton, Goldstein, Chermack, McCammon, Cunningham, Barry, & Blow, 2008)

These studies have included meta-analysis and randomised control studies involving large population of drinkers. The studies overwhelmingly demonstrate that reduction in morbidity due to risky and high risk levels of alcohol consumption can be achieved through brief interventions. The most successful components of a brief intervention include providing patients with an assessment and feedback about their hazardous consumption rates as well as emphasising individual responsibility in consumption levels. Additionally, offering motivational advice in a nonjudgmental, warm and empathic environment about the need for change, as well as providing an array of alternative strategies to reduce consumption and follow up visits appears to be the most effective method.

Although brief interventions have some potential in reducing injuries and health concerns associated with alcohol misuse these types of interventions are primarily concerned with motivating the individual towards positive change. However, such interventions fail to address the more complex interaction of contextual, environmental and interpersonal relationships that encourage alcohol misuse leading to injury and violence in the short term and serious health concerns in the longer term. Alcohol misuse therefore must be addressed in the broad context of these aforementioned factors and in the broader community context in which irresponsible consumption of alcohol is often encouraged.

Alcohol misuse, injury and violence is often associated with the late night entertainment industry (Briscoe & Donnelly, 2001a; Homel, Thomsen, & Thommeny, 1991; Jochelson, 1997; Stockwell, 1997; Stockwell, Masters, Phillips, Daly, Gahegan, Midford, & Philp, 1998). Moreover, the vast majority of assaults and public disorder are associated with a minority of licensed premises that have extended trading hours (Briscoe & Donnelly,

2001b; Briscoe & Donnelly, 2003; Considine, Walker, Wiggers, Daly, Hazel, & Fairhill, 1998; Chikrizhs, Stockwell, & Masters, 1997).

Community and problem oriented policing seems to be the most effective model in improving safety and reducing alcohol-related harm in and around late night liquor trading premises. This approach encourages partnerships with community members at the local level in order to develop crime prevention strategies. There is an emphasis on involving the community in order to identify and address problems that lead to violence and crime.

Community Policing developed in the 1980's in response to a perceived lack of police accountability, poor police/community relationships, and the realisation that traditional policing methods were insufficient (for reviews of Community Policing see Fielding, 2005; 1995; White & Perrone, 2005). What is meant by Community Policing has been difficult to precisely define and many definitions are available (Seagrave, 1996). A broad definition includes: acknowledging the valuable contribution that community members can make to crime prevention; being inclusive of both individual community members; and community agencies that encourage a partnership arrangement to tackle crime. Such an approach to some extent devolves responsibility to field based police officers to engage the local community, and work with, as well as be accountable to the community in order to identify and resolve crime related problems. Some innovative community strategies include neighbourhood watch, police beats and blue light discos. These initiatives serve the dual roles of improving community/police relations and assisting to promote and maintain law and order.

A variant of Community Policing also includes Problem Oriented Policing (POP) that is an approach endorsing the objective analysis of localised problems and the development

of strategies based on the analysis to prevent these problems from recurring (Goldstein, 1990, 1996). POP was developed by Goldstein in the 1980's and encouraged the development of broader community policing models (see Scott, 2000 for a review of the development of POP). It emphasised the importance of methodologically researching specific criminal activity in order to identify possible patterns of crime and the conditions contributing to those patterns. Strategies that have a wider focus than just tackling crime could then be developed and implemented to prevent crime. POP not only encouraged community partnerships to develop suitable crime prevention strategies but also the evaluation of the effectiveness of these strategies to reduce crime.

In place of the overreliance on the traditional legalistic/reactive model of policing, POP acknowledges the complex factors contributing to crime and encourages a proactive, rational and analytical approach to crime prevention. POP recommends the scanning, analysis, response and assessment approach (referred to as the SARA model) to controlling and reducing crime (Eck & Spelman, 1987). For instance, the local area should be initially scanned using a variety of sources such as surveys and public information to identify crime areas and their associated problems. The problems should then be analysed in an attempt to describe and explain them. Following the analysis, the most effective strategies can be selected and implemented to address and prevent criminal activities. An assessment of the impact of the crime prevention measures is then conducted to evaluate their effectiveness and determine whether other strategies are required. The practical difficulties such as time constraints and the skill and training associated with implementing the SARA model have been acknowledged (Cordner & Biebel, 2005).

Nevertheless the POP and SARA approach can provide police officers with the opportunity to gather intelligence in partnership with community members which in turn leads to the collaborative targeting of specific crime problem areas and the development of effective crime prevention strategies to reduce crime and disorder. For example, local traders and public transport employees can be utilised to monitor disorder, referred to as third party policing (Buerger & Mazerolle, 1998; Hough & Edmunds, 1999). Information gathered from public resources such as these can be used to implement situational and targeted crime prevention strategies. These crime prevention strategies can include arrest where it is considered appropriate and also non-arrest law enforcement approaches. Some of the non-arrest approaches involving situational crime prevention strategies include measures such as target hardening (e.g., steering column locks & anti-robbery screens) access control (entry phones & electronic devices), improved urban design, sophisticated surveillance techniques and removing opportunities to commit crime.

2.5.10 Situational Crime Prevention

Approaches to policing crime that advance the value of using the POP and SARA models have developed from the theory of situational crime prevention (for reviews of Situational Crime Prevention Theory see Clarke, (1997, 1995, 1983, 1980). Situational crime prevention is regarded as a primary prevention measure that focuses on reducing crime opportunities rather than attempting to change the dispositional (antisocial) characteristics of individuals.

The primary aim of situational crime prevention is to make it more difficult for the offender to commit crime by reducing the opportunities available to offenders. This is achieved by identifying situations that are more likely to attract offenders and reducing the

attractiveness and rewards associated with those situations. Clarke (1997, 1995) argues that it is ultimately the conditions associated with the situation that determines whether an offence will be committed rather than the criminal characteristics of the offender. These conditions generally include a motivated offender, available target and the opportunity to offend which are common elements of Place Based theories. According to Clarke, when these conditions are available an individual with a disposition toward offending will make a rational decision (though not necessarily a sophisticated one) based on the risks and the rewards associated with the offence. Situational crime prevention theorists argue that it is easier and more effective to alter the environment in a way that reduces the opportunities to offend than to tackle the psychological and sociological causes of criminality.

2.5.11 Effectiveness of Situational Crime Prevention

Numerous situational crime prevention programs have been developed and implemented based on the concept of POP and Place Based theories of crime. It is beyond the scope of this paper to provide an in-depth review of the effectiveness of all of the different types of situational crime prevention programs. The reader is therefore referred to Clarke (1997) and Johannes and Clarke (2006) for an in-depth description and analysis of successful case studies involving situational crime prevention programs. However, the current paper will focus on some of the key situational crime interventions that have been used to reduce and prevent crime, violence and disorder associated with alcohol use.

The success of some of these initiatives provide evidence to support the ongoing use of Place Based theories of crime (crime pattern theory, routine activities theory and rational choice theory) and to develop targeted policing interventions. The success of targeted interventions based on Place Based and Situational Crime Prevention theories also lend

credence to the notion that crime is not random, but is concentrated at certain times and places, and promoted by opportunities that arise in the absence of suitable persons and environmental designs to discourage crime.

Alcohol-related crime, violence and disorder in and around licensed premises afford an ideal opportunity to test the effectiveness of situational crime prevention strategies. This is because the vast majority of alcohol-related disturbances, especially assault related events occur in and around a small number of licensed premises at specific times and places (Briscoe & Donnelly, 2001a; Briscoe & Donnelly, 2003; Chikritzhs et al., 1997; Homel et al., 1991; Jochelson, 1997; Stockwell, 1997).

The levels of violence and alcohol consumption appear to dramatically increase as liquor trading hours are extended (Chikritzhs et al., 1997; Graham & Wells, 2001). Some situational crime prevention programs have achieved significant reductions in alcohol-related crime and disorder in and around licensed premises (Homel et al., 1997), particularly when these programs have included a combination of measures involving responsible beverage serving practices, improved physical surroundings and enforcement of licensing regulations. Other initiatives such as enforcing the minimum legal age of drinking (Graham, 2000), placing restrictions on the hours and days of alcohol sales (Brady, 2000; Edwards et al., 1994) and reducing alcohol density outlets (Gruenewald et al., 1993) have also been recommended as strategies to reduce alcohol-related disorder and violence.

2.5.12 Reducing Alcohol Density Outlet

The research on the relationship between alcohol outlet density and crime, as previously discussed demonstrates that an overabundance of either off-premise or on-

premise alcohol outlets that have specific characteristics have been associated with an increase in violent assaults, alcohol-related motor vehicle crashes and hospital admissions. The research particularly over the last two decades presents consistent evidence of a spatial relationship between alcohol outlets and violence (Roncek & Maier, 1991; Gruenewald et al., 1993; Gruenewald et al., 1996; Gruenewald et al., 2006; Lipton & Gruenewald, 2002; Scribner et al., 1999; Treno et al., 2007). The studies highlight that the links between alcohol outlet density and violence is complex and multi causal in nature. While there is an extensive literature base that has examined the impact of alcohol outlet density, there is a paucity of research that has examined the effect of reducing alcohol outlet density or evaluating the effect of minimum threshold levels of density. This is largely because once alcohol outlets are established local planning laws make it difficult to close alcohol outlets. Nevertheless some studies in Sweden have examined the effect of legislation initially allowing alcohol sales in grocery stores and then reversing this legislation (Ramstedt, 2002). These studies found that following the withdrawal of alcohol sales, consumption rates and motor vehicle accidents experienced a significant reduction.

Most studies examining the impact of fewer alcohol outlets compare high density areas with low density areas or examine the effect of increases in alcohol outlet density on a particular area. A study in the US that was based on a time series and cross sectional design analysed data from 24 to 38 states over a 3 to 10 year period (Gruenewald, 1993) found that variations in the number of outlets significantly predicted the level of alcohol sales.

The overall research on the impact of alcohol outlet density provides evidence to support the Availability Theory, Social Disorganisation and Place Based theories to explain the link between alcohol outlet density and harms. For example, Availability Theory

proposes that higher density alcohol outlets increase the potential access to alcohol resulting in increased consumption levels and increased rates of harm. Social Disorganisation Theory suggests that areas with higher alcohol outlet densities are more likely to have problematic licensed premises that lack informal social controls and are more accepting of problematic behaviours. Place Based theories on the other hand suggest that alcohol outlets particularly those without responsible guardians and handlers are more likely to attract potential offenders and produce situations conducive to problems such as violence and drink driving.

These three theories therefore imply that policies should be introduced to restrict the availability of alcohol through reducing alcohol outlet density, in order to lower the levels of consumption which will result in a reduction in injuries due to violence and drink driving. Based on alcohol outlet density research some Planning Authorities in the US have been successful in the Courts in restricting the number of outlets in their local areas (Ashe, Jengan, Kline, & Galaz, 2003). Another strategy to reduce the availability of alcohol has been to restrict the hours and days of alcohol sales.

2.5.13 Restricting Hours and Days of Alcohol Sales

The research evidence noted previously supports the view that increased availability of alcohol through extended liquor trading results in higher rates of injuries due to assaults and drink driving related crashes (Briscoe & Donnelly, 2003; Chikritzhs et al., 1997; Cikritzhs & Stockwell 2006; Smith, 1990, 1988abc, 1986). When restrictions on days and hours of alcohol sales have occurred naturally or experimentally, there has been a marked reduction in alcohol-related problems. For example, in some Scandinavian countries where there have been liquor store strikes and weekend closures of alcohol outlets, dramatic reductions in

violence and other alcohol-related harms have been observed, (particularly amongst the heavy drinkers), with limited impact on overall consumption rates (Edwards et al., 1994).

In contrast, the research findings within Australia, in relation to restricting alcohol trading hours have been mixed. For example, an evaluation of restricted liquor trading hours in the Australian Capital Territory found that crime and antisocial behaviour did not vary markedly between control areas (no reduction of liquor trading hours) and neighbourhoods of licensed premises where restricted liquor trading hours were introduced (Walker & Biles, 1997). Furthermore, the researchers found that the perception of safety by residents and business people did not alter, but the restrictions may have contributed along with other countermeasures to a decline in the incidents of drink driving.

However, restrictions to alcohol access in some regional and remote Aboriginal communities have been more successful. In some Aboriginal communities, alcohol has been completely banned and in others, pubs/bars and off-premise outlets have been closed on social security pay days. On other days the hours of selling take away alcohol have been reduced. The restrictions have resulted in significant reductions (between 30% & 50%) in the key indicators of alcohol-related harms such as hospital admissions, women's refuge admissions and police incidents (Brady, 2000; d'Abbs & Tongi, 2000; Gray et al., 2000). Of note, similar to the Scandinavian countries, the restrictions have only had a modest impact on overall consumption levels. There is also concern that as a result of restricted access to alcohol, illicit means of accessing alcohol have developed which may eventually undermine the success of restrictions in Aboriginal communities. In some parts of the UK (England, Scotland & Wales) restrictions on hours of liquor trading no longer apply and pubs and taverns can remain open at all times. This strategy is based on the argument that 24 hour access to licensed premises will reduce violence and disorder often

associated with episodic binge drinking around closing times. As this strategy has only been introduced in recent times it is too early to evaluate its effectiveness.

Another measure to reduce assaults and injury in and around late night liquor trading premises has been to require alcohol to be served in toughened or plastic glassware. A recent well controlled study demonstrates the potential of such a measure to reduce the severity of alcohol-related violence in the night-time economy (Forsyth, 2008) However, while the severity of injury can be reduced it remains to be established whether the introduction of toughened or plastic glassware reduces the overall assault rates. Assaults are often related to the intoxication level of patrons and encouraging safer levels of alcohol consumption may be a more effective means to reduce assaults. In an attempt to reduce overall alcohol consumption levels, governments have brought pressure on the alcohol industry to increase alcohol prices by increasing the tax on alcohol. This measure has led to some success in reducing the overall level of alcohol consumption but the impact of increasing alcohol prices varies across cultures and the type of drinker (Osterberg, 2004). It has also been well established that promotions that encourage episodes of excessive drinking (cheaper or free drink offers) increase the risk of alcohol-related harms (Homel & Clark, 1994). Hence, legislature measures that discourage excessive alcohol consumption are to be applauded.

2.5.14 Recent Strategies in Queensland, Australia

Recently, in Australia a number of jurisdictions have introduced measures to control alcohol-related violence and disorder by preventing patrons from entering or re-entering late night trading licensed premises for a specific period prior to their closure. For example, in Queensland the State government has amended the Liquor Act in order to improve public safety in and around licensed premises by the introduction of a comprehensive package of

interventions. These interventions include tougher liquor enforcement measures, improved security measures, increased transport as well as the prohibition of explicitly marketing discounted liquor and competitions involving alcohol. In addition, licensed premises are required to display house rules and abide by a code of conduct that encourages the responsible service of alcohol. If the licensed premise has an extended trading permit to 5:00 a.m. patrons who leave after 3:00 a.m. are not permitted to re-enter and new patrons are also not permitted to enter. However, patrons who are inside the licensed premise may remain inside and continue to consume alcohol until the time of closing. This strategy referred to as the lockout policy was instigated in response to the growing public concern about alcohol-related violence and disorder associated with extended liquor trading hours.

The lockout strategy as a crime prevention measure appears to have been utilised only within Australia and has not been evaluated extensively to date. The only evaluation study to date reported in detail relates to the imposition of a 3 a.m. lockout on all late-night entertainment venues in the Central Business District (CBD) of the City of Ballarat, Victoria, Australia (Operation Link: Be Safe Late Program (OLBSL), 2004). In addition to lockout, increased lighting, extra police and a target police patrol group were provided within the precincts of the entertainment venues. Police crimes statistics were analysed for 12 months prior to the lockout and for a 12 month period during the lockout. The results of the study indicated that assaults in licensed premises decreased by 47.5% and there was a reduction in assaults in public places by 33.3% following the introduction of the lockout. Although there was an overall decrease in property damage (17.3%) that involved retail stores, residential premises and public places, property damage to licensed premises increased by 25%.

In summary, studies examining the impact of restricting hours and days of alcohol sales have lacked controlled methodology and have been inconsistent. However, some of the studies do indicate that alcohol control policies directed at reducing alcohol availability through restrictions on the hours and days of alcohol sales may reduce incidents of alcohol-related injuries. Regardless of the operational hours and days for the availability of alcohol, responsible service of alcohol may be a more effective method to minimise alcohol-related harm.

2.5.15 Responsible Beverage Service and Regulation of Liquor Licensing

Responsible Beverage Service (RBS) involves the implementation of policies and procedures to ensure that underage patrons and intoxicated patrons are not served alcohol. Staff and managers of licensed premises are provided with brief training programs (usually between one & three hours in duration) designed to assist staff to identify underage and intoxicated drinkers and how to effectively refuse service. The results on the introduction of RBS have been mixed with some studies indicating that RBS reduces motor vehicle crash fatalities (Grube, 1997) and other studies finding that RBS has little impact on overall motor vehicle crash fatalities (Lang, Stockwell, Rydon, & Beel, 1998; Saltz & Stanghetta, 1997). The most positive outcome of RBS training programs, is that bar and hotel staff have experienced increased knowledge and skills in relation to alcohol serving practices (Graham, 2000). For example, after being exposed to RBS, bar staff are more likely to refuse service to obviously intoxicated patrons, especially if licensees and managers are supportive of RBS (Barbor et al., 2003).

The most effective means to encourage RBS, appears related to the introduction of laws in the US to prohibit serving alcohol to intoxicated patrons

(McKnight & Streff, 1994) and making licensees and bar staff liable for damages, resulting from serving intoxicated patrons (Chaloupka, Saffer, & Grossman, 1993). In addition, encouraging the adoption of house codes of behaviour also seems to be valuable in deterring intoxication and unruly behaviour (Stockwell, 2001). The most effective measures have combined proactive law enforcement of liquor licensing laws with RBS and policies that encourage appropriate behaviour from both staff and patrons (Homel et al., 2004). The willingness to enforce liquor licensing laws is regarded as essential to reducing alcohol-related violence in and around licensed premises (Lang & Rumbold, 1997; Levy & Miller, 1995).

Raising the legal minimum drinking age in the US has also been found to be successful in reducing the level of alcohol intake and the number of alcohol-related crashes among young people (Shults, Elder, & Sleet, 2001; Voas & Tippetts, 1999; Wagenaar & Toomey, 2002). In Australia, when the legal drinking age was lowered to 18 in the early 1970s, Smith and Burvill (1987) found increases in juvenile crime in Queensland, South Australia, Tasmania and Western Australia. In addition, there was an increase in drink driving and traffic accidents in Queensland. In respect to non traffic hospital admissions, increases were observed in both Queensland and Western Australia in the 15 to 17 year old age group. Young males aged between 18-25 years experience a substantial proportion of injuries and fatalities related to intoxication associated with the late-night entertainment industry (Homel, McIlwain, & Cavolth, 2004; Hingson et al., 1997; Zador, Krawchuk, & Voas, 2000). Alcohol control policies and law enforcement strategies therefore need to be directed to creating safer environments in and around licensed premises.

2.5.16 Creating Safer Licensed Premises

The most effective strategy to reducing alcohol-related harm associated with licensed premises has been the collaborative community action approach (Hommel, et al., 2004; Hauritz, Homel, McIlwain, Burrows, & Townsely, 1998; Graham & Wells, 2001; Stockwell, Rydon, Lang, & Beel, 1993). This approach involves representatives of the hotel industry, liquor licensing authority, police and interested community members working together as a task group to create safer licensed premises. The community action task group work together, to encourage licensees to adopt practices such as training staff in RBS and conflict resolution. In addition, licensees and owners are encouraged to create bar room environments that have been demonstrated to reduce harm. For example, attractive well maintained, comfortable and uncrowded premises that offer food and good entertainment and have codes of behaviour seem to discourage intoxication and reduce violent behaviour (Jeff & Saunders, 1993, Homel & Clarke, 1994; Homel et al., 1997; Lakeland & Durham, 1993; Marsh & Kibby, 1992; Stockwell et al., 1993; Stockwell, 1997).

Examples of community collaborative task groups in Australia include the Melbourne Westend Project (Melbourne City Council, 1991), Eastside Sydney Project (Lander, 1995), Kings Cross Licensing Accord (New South Wales Health Department, 1997, the Freo Respects You Project (Western Australia, Stockwell, 1997) and the Surfers Paradise Safety Action Project (Gold Coast, Queensland, Homel et al., 1997). The Surfers Paradise Safety Action Project has been replicated in Mackay, Townsville and Cairns. Homel et al. (2004) summarises the findings of these community collaborative projects and also comments on many other similar projects. In the Queensland Safety Action Projects it was demonstrated that violence can be reduced from between 75% to 81% (Hommel et al., 1997).

However, there were a number of barriers that prevented the long term maintenance of the initiatives in the Safety Action Project at Surfers Paradise. Some of these included the poor motivation of owners/managers that developed within a few years following the project and the competitive commercial interests which resulted in assault rates returning to levels that existed prior to the project (Homel et al., 1997). Limited resources to maintain all of the recommended strategies may also be an ongoing concern. In addition, the political environment may be reluctant to support policies that may reduce violence while at the same time impacting negatively on the tourism industry and the economy. For example, developing an accord among licensees to control prices may reduce consumption levels and 'pub hopping' and the associated violence. However, such a strategy conflicts with the Commonwealth of Australia Trade Practices Act which prevents price fixing in order to encourage competition.

Another community collaborative strategy operating on the Gold Coast, Queensland Australia emphasised the importance of ensuring compliance by licensees with the liquor Act. This innovative policing strategy referred to as LEAPS (Liquor enforcement and proactive strategies) was designed to reduce disorder and violence associated with the late-night entertainment industry. LEAPS has three main key elements including, the systematic compilation of relevant adverse alcohol-related events, the identification of the most problematic licensed premises ('Hot Spots' of disorder & violence) and the implementation of collaborative operations and inspections of problematic licensed premises (see Roche & Inglis, 1999). The LEAPS program built upon the Surfers Paradise Safety Action Project and is based upon intelligence and situational crime prevention strategies. Police work collaboratively with other agencies and stakeholders such as the local council, liquor

licensing, fire services and licensees to gather information that will lead to the implementation of interventions to improve the safety of environments in and around licensed premises.

An evaluation of the LEAPS program (Roche & Inglis, 1999) demonstrated that the program provided the ability to effectively and impartially collect information to identify 'Hot Spots' of disorder and intervene to improve public safety. Some of these issues included improving safety aspects of licensed premises (e.g., preventing overcrowding & fire proofing), ensuring RBS and improving road safety and public order as well as general community safety. Although the program was found to be resource intensive it provided a means for police operations to be driven by intelligence and in collaboration with other relevant agencies. In addition, the enforcement of provisions of the Liquor Act became more systematic and relationships with other enforcement agencies were enhanced. Improvements were noted in the practices of many of the problematic licensed premises with regard to compliance with the provisions of the Liquor Act.

Overall, the best policing strategy to ensure safer licensed premises and reduce alcohol-related violence is to encourage the implementation of the practices implemented by community collaborative groups and systematically police and prosecute violations of the liquor licensing laws. Particular attention should be paid to ensuring RBS which discourages serving intoxicated patrons and underage drinkers as well as cheap drink promotions. However, in order to identify the factors that impede or facilitate the implementation of community collaborative strategies a qualitative analysis is required.

2.5.17 Qualitative Analysis of Situational Crime Prevention Programs

Qualitative research is now embedded within the criminal justice field and has been well documented (see Noaks & Wincup, 2004; Progrebin, 2003). The techniques used to collect information through qualitative research generally involve direct observations in natural settings, surveys and semi-structured interviews with individuals or small focus groups (Noaks & Wincup, 2004; Patton, 2001). These approaches provide an ability to shed light on issues that cannot be explored by quantitative analysis. For example, the perceptions and experiences of participants can provide a deeper understanding about outcome affects as well as identifying any unintended influences. In addition, the features related to the delivery and social context of the program can be described, enabling those aspects of the program contributing to the program's success or failure to be identified. Improvements can then be made to the program and the implementation process. This kind of qualitative information can be used to guide decisions about the programs' suitability for other individuals or locations.

In order to have confidence that the information gathered through qualitative research reflects an accurate representation of observations and interviews, a number of analytical techniques have been developed. These include constantly comparing the data, clarifying the information, and reading and re-reading the material gathered during the collection phase (Corbin & Strauss, 1990; Ezzy, 2002; Strauss & Corbin, 1994, 1998). This process enables the development of ideas and the coding of data, resulting in the categorisation of common themes which can be refined through constant comparison of data within and across the themes (Strauss & Corbin, 1998). Unusual information is not ignored and the identified codes and themes can be verified by an independent researcher.

The trustworthiness of the data can also be strengthened by a process of triangulation whereby the data is compared by at least three different coding methods (Patton, 2001).

There has been a substantial amount of qualitative research undertaken with respect to crime prevention programs (see Pogrebin, 2003). Qualitative research has been used in a variety of ways including: to gather information to improve the program and assess its suitability for use in other locations (Mears, Kelly, Durden, 2001; Wickes, Mazerolle & Riseley, 2005; Zevitz, 2002); explore the relationships between the components of a program; and to assess how well the program has been accepted and implemented (Goodwin, 2002). Qualitative evaluation has also been utilised to compliment quantitative outcome based research. For example, Ackerman and Murray (2004) used a quantitative approach to obtain data about geographic concentrations of violent and property crime. They then gathered qualitative information about land use, environmental structures and how police responded to crime within these geographic concentrations.

Qualitative research has been instrumental in providing information to assist in understanding how initiatives based on the principals of community and problem oriented policing have been accepted and implemented (Giacomazzi & Body, 2004; Mesko & Lobnikar, 2004; Williams, 1998; Zhao, Lovrich, & Thurman, 1999). This information can then be used to improve the implementation process and counter factors that impede progress and effectiveness. For example, factors hampering the effectiveness of police led intelligence have been identified through semi-structured interviews and direct observations (Cope, 2004; Ratcliffe, 2005). The most significant factors included police operatives and crime analysts being unfamiliar with each others' roles and problems associated with training and quality of the data.

The regulation of alcohol-related violence and disorder in and around licensed premises has benefited greatly from qualitative research. Alcohol-related management strategies and policies have been developed as a direct result of observational studies conducted in pubs and clubs (see Homel, et al., 2004). Although this type of research largely involves unstructured observations of patrons, physical layout and social atmosphere, it also includes obtaining the perceptions of key stakeholders (police, hoteliers, retailers, security staff and magistrates) through semi-structured interviews. As a consequence, safety action projects and licensing accords involving hoteliers, retailers, police, liquor licensing officers and community representatives have been developed to address alcohol-related disorder (Doherty & Roche, 2003; Graham & Wells, 2001; Hauritz et al., 1998).

2.5.18 Manly After Midnight Study

An example of this type of qualitative research was recently carried out in Manly, New South Wales, Australia (Report of the Manly after Midnight Working Party, 2005) where an after midnight working party was established to investigate violence and disorder associated with late-night liquor trading. This working party gathered qualitative information regarding the effectiveness of alcohol management strategies in order to guide further policy development. Members of the working party conducted field inspections and observations particularly around licensed premises, surrounding parks and taxi ranks where they viewed unruly behaviour and drunkenness. In addition, local community surveys were undertaken which revealed 70% of respondents favoured a 2 a.m. closing time. The information obtained through this research led to recommendations regarding the regulation of noise and behaviour by imposing staggered closing times and preventing patrons entering licensed premises between 12 midnight and 2 a.m. Other initiatives such as

improving late-night transport, enhancing lighting, providing additional security staff and introducing more cleaning were also recommended.

There have been a number of other projects similar to the project in Manly that are based on a community action model for responsive regulation of alcohol (Maguire, Nettleton, Rix, & Raybould, 2003; Operation Link: Be Safe Late Program, 2004; Wickes, Mazerolle, & Riseley, 2005). These projects are police led and involve a number of other agencies directly affected by the liquor trade. Their general aims include: encouraging responsible service of alcohol; improving behaviour of hotel staff and patrons; as well as increasing police presence; and manipulating the environment to discourage disorderly behaviour. Analysing the perceptions and experiences of the participants in these projects has proven fruitful in highlighting the processes involved in implementing the projects and identifying their most successful aspects.

2.5.19 Tackling Alcohol-Related Street Violence

A project called tackling alcohol-related street crime (TACS) for example, was evaluated at both a quantitative and qualitative level (Maguire, Nettleton, Rix, & Raybould, 2003). Although the quantitative data demonstrated that the project was successful in reducing alcohol-related violence, a qualitative process evaluation identified the successful and unsuccessful components of the project and its impact on participants. The process evaluation revealed that while most elements of the project were implemented in accordance with the initial objectives there were aspects that were not always strictly enforced (e.g., disciplinary measures against unsatisfactory or violent staff). In addition, there was some early confusion in relation to the roles of the participants and door staff felt victimised through the use of camera surveillance.

2.5.20 Operation Link: Be Safe Late Program

In relation to the Operation Link: Be Safe Late Program (2004), nightclub patrons, taxi drivers, hoteliers, police and security staff were interviewed and surveyed to ascertain their perceptions and experience of the project. The key aims of the project involved a lockout commencing at 2 a.m. to prevent patrons entering licensed premises after this time, increased police patrols and improved lighting. The majority of the stakeholders felt a sense of ownership and involvement in the project and believed it was successful in reducing alcohol-related crime. The main criticisms of the project related to the project's affect on work practices and the extra demands placed on taxi drivers by the lockout commencing at 2 a.m. As a consequence the lockout time slot was altered to commence at 3 a.m.

2.5.21 Valley Alcohol Management Partnership

A process evaluation of the Valley Alcohol Management Partnership (VAMP) in Brisbane, Australia was conducted by Wickes, Mazerolle and Riseley (2005) to assess the effectiveness of its various initiatives. The main initiatives included: a licensing accord; training for bar staff in responsible service of alcohol; and a security officer stationed at a taxi rank. The process evaluation essentially focussed on examining the mechanisms and processes undertaken by VAMP in relation to developing and implementing these initiatives. It involved reviewing all documentation, conducting in-depth interviews with key stakeholders and a survey of 59 licensed premises. The findings indicated participants felt a sense of ownership and equitable involvement in decision making. In addition, participants were generally positive about VAMP and believed it generated greater collaboration between stakeholders. However, participants expressed concerns about the strategies in place to maintain the sustainability of the project.

The above outline of research on a number of alcohol-related situational crime prevention projects demonstrates that rich contextual data can be gathered through a qualitative approach. This data would not be available through studies based solely on quantitative based outcome research. Qualitative data has proven to be of value in understanding the implementation and process factors related to the outcomes of projects. This kind of qualitative information is required in order to identify successful components of the projects, improve projects and guide future project policy development. However, it is also important to note that there exists a belief among some operational police officers that situational crime prevention strategies may have limited effectiveness as they can result in the displacement of crime (Pease, 2001).

2.5.22 Displacement of Crime and Diffusion of Benefits due to Situational Crime

The value of situational crime prevention strategies has been questioned in light of concerns about the possibility that crime may be displaced (Cornish & Clarke, 1986; Pease, 2001). It has been suggested that crime may be displaced through offenders electing another time or location to commit the crime, altering their methods to overcome the difficulties created by crime prevention techniques, or choosing another target or type of crime (Crawford, 1998; Bennet & Wright, 1984; Felson & Clark, 1998). In addition, perpetrator displacement may occur when perpetrators who are deterred by crime prevention initiatives are replaced by more determined perpetrators (Bar & Pease, 1990).

The displacement of crime has been examined in both Canada and the US and found to be much less of a barrier to situational crime prevention strategies than had been assumed, and when displacement does occur, it was more likely to be to similar targets and adjacent areas (Gabor, 1990; Eck, 1993). A review of 55 studies in the UK, Holland and the

US examining the issue of crime displacement was undertaken by Hesseling (1994). In 40% (22) of the studies no crime displacement was found. Although 60% (33) of the studies revealed some form of crime displacement, the displacement was fairly limited. It was also noted that in 6 of the studies, Hesseling (1994) found that targeted crime prevention initiatives had beneficial effects (referred to as diffusion of benefits) on adjacent areas without crime prevention initiatives. A number of other reviews (Sherman & Weisburd, 1995; Knutsson, 1998) examining the possibility of crime displacement has produced similar conclusions to Hesseling (1994). The general consensus among these reviewers is that there is little evidence of displacement (except may be for burglary) and there is some evidence of diffusion of benefits.

Some explanations for the lack of crime displacement in response to situational crime prevention strategies have been provided. For example, Wiles and Costello (1997) examined the travelling distances of criminals and found that most offenders do not appear to be prepared to travel far in order to commit a crime. Hence, if crime prevention initiatives make it difficult to offend in one area, offenders may be unwilling to travel to another area. In addition, offenders tend to consider the opportunities to commit a crime which involves weighing the costs, benefits and risks associated with committing a crime (Cornish & Clarke, 1987).

Other research has also demonstrated that offences tend to occur within an offender's routine movements and activities as well as being concentrated in certain places and at specific times (Block & Block, 1997; Brantingham & Brantingham, 1994; Chikritzhs et al., 1997; Jochelson, 1997). As mentioned, these findings lend credence to Opportunity and Place Based theories of crime that suggest that it is more effective to tackle crime by

manipulating the environment rather than attempting to change the antisocial characteristics of the offender. While researchers generally accept some partial displacement of crime is inevitable, the overall findings tend to indicate that the net gains of situational crime prevention strategies far outweigh the limited effect of crime displacement (Chenery, Holt, & Pease, 1997; Clarke, 1997, 1999).

Key Findings:

Alcohol Outlet density and extended liquor trading is closely associated with violence and public disorder;

School based substance abuse programs based on cognitive therapy and taught in the context of broader health skills can be effective in reducing substance abuse problems;

Reduction in morbidity due to risky levels of alcohol consumption can be achieved through alcohol brief intervention programs;

Problem Oriented Policing with a focus on situational crime prevention is the most effective policing model to manage alcohol-related violence;

Some situational crime prevention programs have achieved significant reductions in alcohol-related violence and disorder in and around licensed premises;

The most effective situational crime prevention programs include a combination of measures involving consistent and regular enforcement of liquor licensing laws, responsible beverage service practices and improved physical surroundings (the LEAPS program is a good example);

Reducing alcohol outlet density, enforcing the minimum legal age of alcohol consumption and reducing the hours of liquor trading can reduce violence and other alcohol-related harms; and

Restricting the hours and days of alcohol sales in Indigenous communities have resulted in significant reductions in hospital admissions and violent incidents requiring police attendance.

Key Findings:

The community collaborative action approach is the most effective strategy to reduce alcohol-related harm when it is consistently applied;

Successful community collaborative approaches include: the Melbourne West End Project; Kings Cross Licensing Accord and the Surfers Paradise Safety Action Project;

Barriers that prevent the long term maintenance and success of Safety Action Projects and Licensing Accords include poor motivation by Licensees, competitive commercial interests, trade practice laws and limited resources;

Staggered closing times of licensed premises, improving late night public transport, enhancing lighting and security measures also improves public safety;

Crime and violence is not generally displaced to other areas by increased policing and community initiatives to reduce alcohol-related violence in specific areas;

Toughened glassware or plastic glassware may not necessarily reduce the number of assaults but injuries are less severe;

Increasing the tax and price of alcohol has potential to reduce overall alcohol consumption rates; and

Preventing patrons from moving between various licensed premises through the use of lockouts has been shown to reduce violence and disorder in some instances.

Resolutions:

Effective school based substance abuse programs should be widely implemented in both primary and high schools;

Alcohol brief intervention programs should be available at all accident and emergency centres and mandatory for those convicted of alcohol-related offences (particularly alcohol impaired driving and assault-related offences);

Situational Crime prevention programs such as the LEAPS program should be introduced in all policing areas of Queensland;

Laws should be introduced to limit the density of hotel and pubs that trade late at night;

Regular and consistent liquor licensing law enforcement needs to operate in conjunction with improved security (lighting, CCTV, crowd training);

Public transport needs to be increased and coordinated with closing times of licensed premises;

Toughened glassware should be mandatory for licensed premises trading late at night in order to reduce the severity of injury; and

Preferably happy hours should be banned or at least not promoted as they increase consumption levels and encourage binge drinking episodes.

3. The Impact of Late Opening Hours

3.1 How have late opening hours impacted on the incidence of alcohol-related violence?

The vast majority of research clearly demonstrates that it is young males who are more likely to be involved in alcohol-related violence and crime (Dingwall, 2006). However, some recent research suggests that in recent decades the gap between young females and young males is narrowing in regards to some types of offences involving alcohol, particularly drink driving (Schwartz, 2008). Young females are also more likely to binge drink and become involved in alcohol-related fights compared to their mother's generation (Buddie & Parks, 2003; Hughes, Anderson, Morleo & Bellis, 2007).

A study undertaken by Abbott-Chapmann, Denholm, & Wylde (2008) in Tasmania, Australia has highlighted the diminishing intergenerational differences between adolescent males and females in regards to their risk taking, risk perceptions and alcohol consumption levels. This study examined the risk taking behaviour and perceptions of 945 year 11 and 12 students in public and private senior secondary schools and colleges. The study clearly demonstrated that young females are more likely to engage in high levels of alcohol consumption and binge drinking compared to their mother's generation. Additionally, information obtained through focus groups involving female students revealed that these students were more likely to habitually use alcohol and drugs as well as drive under the influence of alcohol or drugs compared to their mother's generation. The increased use of drugs and alcohol by young women of the current generation seems to coincide with

employment opportunities, social freedoms and access to public bars and nightclubs that were far less available to their mother's generation.

Females who commit acts of violence when intoxicated are also more likely to have a history of substance abuse, criminality and personality disorders (Weizmann-Henelius, Putkonen, Naukkarinen, & Eronen, 2009). Serious violent female offenders are also less likely to perceive an association between alcohol consumption and negative consequences compared to other offender subgroups (Phillips, Nixon, & Pfefferbaum, 2002). Furthermore, women report that they more frequently offend against their partners in situations of disagreement when alcohol is present (Weizmann-Henelius, Viemero, & Eronen, 2003). Finally, though overall men experience higher rates of drink driving, in recent times there has been a significant increase in road traffic accidents and drink driving arrest rates for females while the drink driving and road traffic accidents for men have declined (Schwartz, 2008).

A study in the United Kingdom (UK) found that while males consume more alcohol than females on a night out, females are more likely to consume alcohol at home or at a friend's place prior to attending a bar or a club for an evening's entertainment (Hughes et al., 2007). Individuals who drink before going out in the evening were much more likely to consume more alcohol overall and be involved in a fight compared to individuals who did not consume alcohol prior to going out. Additionally, the Hughes et al. (2007) study seems to indicate that pre-nightlife drinking may be a more important factor in nightlife violence than total alcohol consumption. This study also noted that the more alcohol an individual consumed the greater was their risk of being exposed to walking drunk and being sexually molested. Other studies have also confirmed that there is a close association between

intoxication and aggression and violence (Graham, Osgood, Wells, & Stockwell, 2006; Leonard, Quigely, & Collins, 2003; Wells & Graham, 2003).

The aforementioned research indicates that both young males and females are vulnerable to violence that often occurs in the context consuming alcohol excessively at late-night licensed premises. A large proportion of policing crime involves dealing with offenders who are either intoxicated, or under the influence of alcohol. Although there have only been a few Australian studies that have specifically explored the number of police attended incidents that involved alcohol, they appear to demonstrate that alcohol is a pervasive component of a variety of offences. For example, in the metropolitan area of Sydney Australia, six police patrols were monitored for their attendance at alcohol-related incidents over a four week period in 1991 (Ireland & Thommeny, 1993). Of the 684 incidents, 62% (427) were judged to be alcohol-related. Additionally, over three quarters of the public order offences (assaults, offensive behaviour & offensive language) were alcohol-related.

A similar survey in South East Queensland across four police regions was carried out over a two week period (Arro et al., 1992). In the Queensland study, police were required to record all incidents whether or not an offence had been committed. Of the 2,879 incidents, 27% were regarded as being alcohol-related. Approximately 50% of the alcohol related offences occurred in and around licensed premises (pubs & clubs) and the majority of these occurred in the late evenings and early mornings on weekends. In both the Sydney and Queensland studies, specific types of incidents such as street offences, property damage, offensive behaviour, domestic violence, assaults and noise complaints were more likely to involve alcohol. In a later Queensland study of alcohol incidents requiring police attendance

over a four week period, 17% of the 9,331 incidents were deemed to involve alcohol (Davey & French, 1995).

Studies undertaken more recently (Palk & Davey, 2005; Palk, Davey & Freeman, 2007a, 2007b) revealed that the most common alcohol-related incidents police attended were vehicle and/or traffic matters, disturbances and offences against persons (common & serious assault). These events were also most likely to occur in the late evenings and early hours of the morning on the weekends closely associated with the late night entertainment industry.

Although numerous studies have documented the close association between alcohol and crime, many of them suffer methodological limitations. Hence, caution should be exercised when interpreting the results. One of the major limitations involves the subjective nature of the research in that observation and survey studies appear to have relied largely on the offenders' or victims' perception that alcohol was connected to the offence. Similarly official police statistics and police based studies in regards to attendance at most incidents rely heavily on the police officer's opinion. An exception to this is drink driving offences, in which an objective analysis of alcohol use has been carried out mainly through blood alcohol concentration (BAC).

Overall, most of the studies are not based on a case control design and rely solely on questionnaires. Some of the questionnaires did not seek the exact amount of alcohol consumed and specific times of consumption prior to the offence (see Dingle, 2004). In addition, some of the studies have been unrepresentative. Although the study in the US by Greenfield (1998) that clearly demonstrates a strong relationship between alcohol and crime based on 3.5 million offenders is representative and probably the largest ever

undertaken, the findings are based on official statistics and records that can be subject to bias and reporting errors. The Australian studies (Arro et al., 1992; Ireland & Thommeny, 1993; Davey & French, 1995) that specifically examined police call out to incidents were not randomised, relied on subjective analysis and were conducted over brief periods in limited geographical areas. However, the studies undertaken by Palk et al. (2007ab) were on a large scale across wide geographical areas and required operational police to complete a modified activity form that documented carefully the details each incident attended by police.

3.1.1 Total Alcohol Sales and Levels of Violence

In contrast, an impressive Canadian study (Rossow, 2004) utilised a time series design to examine the association between alcohol sales and homicides over 19 years (1950-1999) across six provincial regions. The study examined aggregated annual sales so as to reduce the risk of spurious correlations. In at least two of the provinces, a significant correlation was found demonstrating that as total alcohol sales increased, so did the number of homicides. In three of the provinces there was a significant correlation between male homicides and alcohol sales. In addition, the effect of alcohol sales had a greater impact on the involvement of males in homicides than on females in two of the provinces. While there were some minor problems encountered in the study (some biased estimates & small number of homicides) the study lends strong support to the contention that acute alcohol intoxication triggers serious violence and that overall alcohol sales impact on rates of homicides.

The relationship between violent crime rates and total alcohol sales has also been investigated in a number of European countries. An increase in total sales of alcohol has

been found to be followed by an increase in violent crime figures (Lenke, 1990; Skog & Bjork, 1988). However, the degree of the association between alcohol sales and violent crimes was found to vary in a number of countries such as Sweden and France (Lenke, 1990). Homicide rates in some 14 European countries have been observed to markedly increase along with increases in alcohol sales (Rossow, 2001). The increase in homicides rates was more marked in northern European countries than in southern European countries. This may be due to northern European countries being inclined to patterns of drinking that encourage intoxication (Rossow, 2001).

The overwhelming aforementioned research evidence suggests that the availability of alcohol as defined by total alcohol sales plays a significant role in violent crime rates. However, the precise causal nature between alcohol and criminal behaviour remains unclear and complex (Lipsey, Wilson, Cohen, & Derzon, 1997; Room, & Rossow, 2001). Other research also demonstrates that the availability of alcohol alone is not sufficient to explain the relationship between alcohol and crime. For example, research on family violence demonstrates the complexity of this relationship. While alcohol (particularly heavy use) has been found to be a feature of the lifestyles of both perpetrators and victims of family violence (Clarke & Foy, 2000; Mirrlees-Black, 1999), male attitudes related to the need for power and control appear to be a more significant contributing factor (Johnson, 2001; Keys Young, 1994). Other studies also highlight the importance of other contributing factors such as background, cultural norms, expectations and situational aspects among offenders who commit property offences and offences related to violence and public disorder (Fergusson & Horwood, 2000, Graham et al., 2000; Hawkins, Catalano, & Miller, 1992; Homel et al., 2004). Consequently, the socio-demographic characteristics of

offenders, the place or setting of the crime, as well as the timing of offences need to be considered to appreciate the complexity of the alcohol and crime link.

3.1.2 The Relevance of Time, Place and Socio-Demographics to Alcohol-related Crime: Hot Spots of Crime, Disorder and Violence.

Some types of crime, particularly offences related to disorder and violence seem more likely to occur in certain places. This phenomenon has been observed by criminologists and sociologists since the late 19th century and throughout the 20th century (Burgess, 1916, Glyde, 1856; Mayhew, 1968; Shaw & McKay, 1931). These early researchers noted that the clustering of specific types of crime occurred in distinguishable geographical areas that were more likely to be populated by individuals from poor social economic backgrounds (low education & low employment rates). More recent research has continued to find that some places within communities are more likely to experience a higher rate of criminal activity referred to as 'Crime Hot Spots' (Roncek & Maier, 1991; Sherman, Gartin, & Buerger, 1989). For example, Sherman et al. (1989) analysed spatial data related to calls for police over a 12 month period in Minneapolis, Minnesota of the US. It was discovered that 50% of the calls were located in only 3% of the locations, indicating that a small number of locations produced the most calls.

More recently the development of computer crime mapping and geographical referencing (for a review see Lersch, 2004) has allowed the occurrence of crime to be analysed in a more sophisticated and technical manner at the temporal and spatial level. This kind of analysis has demonstrated that most crime is not a random event (Block & Block, 1995; Jochelson, 1997) but occurs in concentrated places at certain times, especially where alcohol is available (Teece & Williams, 2000). Using crime mapping technology,

Jochelson (1997) studied incidents of assaults and robberies recorded by police over a 2-month period in inner Sydney, Australia and found that there were specific 'Hot Spots' of crime. In a number of early US studies investigating crime 'Hot Spots', it was observed that residential blocks with bars and taverns had a larger proportion of crime compared to residential blocks without bars and taverns (Roncek & Bell, 1981; Roncek & Maier, 1991). The Roneck and Maier (1991) study analysed cross sectional data from 4,396 residential blocks of Cleveland from 1979 and 1981. The authors concluded that a variety of violent and property related crime was statistically significantly associated with areas more densely populated with bars and taverns.

3.1.3 Density of Alcohol Outlets and Crime

Over the last few decades the relationship between the density of Alcohol outlets and crime has been extensively examined (Treno, Gruenewald, Remer, Johnson, & LaScala, 2007). The research literature draws a distinction between alcohol purchased and consumed on premises (referred to as on-premise sales) and alcohol purchased from premises that must be taken away and consumed elsewhere (referred to as off-premise sales) (see Treno et al., 2001). Alcohol outlets therefore refers to both the on-premise purchase and consumption of alcohol in places such as bars, clubs, restaurants, taverns, and hotels and to off-premise alcohol sales such as alcohol sold at liquor stores and grocery stores.

There is a broad range of research comprised of cross sectional, longitudinal and ecological studies examining the spatial relationships of alcohol outlets and crime, particularly crimes associated with violence and disorder (see Livingston, Chikritzhs, & Room, 2007; Scribner, MacKinnon, Dwyer, 1995; Speer, Gorman, Labouvie, & Ontkush,

1998; Stevenson, Brewer, & Lee, 1998). Some of these studies have been conducted at City/Town and county level utilising large population samples and aggregate data (Gorman, Speer, Labouvie, & Subaiya, 1998; Scribner et al., 1995) while other studies have focused on smaller geographical units in which local residential blocks are compared (Gorman, Speer, Gruenewald, & Labouvie, 2001; Scribner, Cohen, Kaplan, & Allen, 1999; Speer et al., 1998). Additionally, a number of studies have also examined the impact of socio-demographic characteristics (residential stability, race, age, education, income and employment) of areas surrounding a cluster of pubs, clubs and hotels (Nielson & Martinez, 2003; Gruenewald, Freisthler, Remer, LaScala, & Treno, 2006) as well as the impact of alcohol outlets on surrounding areas (Gorman et al., 2001; Zhu, Gorman, & Horel, 2004).

Two prominent cross sectional city/town level studies (Scribner et al., 1995; Gorman et al., 1998) examined the relationship between assaults and variables such as alcohol outlet density and socio-demographics in cities with a population base of over 10,000. The Scribner et al. (1995) study involved 74 cities in Los Angeles and the Gorman et al. (1998) study involved 223 cities in New Jersey. While the Scribner study found that alcohol outlet density was significantly related to the rate of assault independent of socio-demographic variables, the Gorman study found that alcohol outlet density did not predict an increase in assault rates independently of socio-demographic variables.

Although the Gorman study was designed to replicate the Scribner study, there were some differences in the way the data was analysed. For instance, the Scribner study used a least square regression analysis and univariate and bivariate analyses to study the relationships among variables, while the Gorman study relied upon hierarchical regression analysis. It should also be noted that the types of alcohol outlets examined as well as the

size and number of cities examined differed between both studies. For example, there were 74 cities in the Scribner study which also compared two groups of on and off-premise sales, while the Gorman study examined 223 cities and compared three different groups involving on-premise sales, off-premise sales and a combined on and off-premise sales group.

However, following these sophisticated and innovative large scale studies there have been a number of other cross sectional studies (State/City & small neighbourhood block analysis) that have consistently verified the strong and positive nexus between alcohol outlets and antisocial activities (Alaniz, Cartmill, & Parker, 1998; Gorman et al., 2001; Gruenewald, Millar, Treno, Yang, Ponicki, & Roeper, 1996; LaScala, Gerber, & Gruenewald, 2000; Speer et al., 1998; Stevenson et al. 1999). It therefore appears that the contrasting finding by Gorman et al. (1995) could be an aberration. Nevertheless a number of cross sectional studies have been criticised for their failure to consider the affects of other factors on violence and criminal behaviour such as socioeconomic disadvantage, age, race and low education (see Stockwell & Gruenewald, 2004).

In addition, some studies including Gorman et al. (1998) and Speer et al. (1998) failed to control for spatial autocorrelation (data in adjacent areas impacting on the area under investigation) among geographic areas. Autocorrelation has been found to bias statistical estimates resulting in inflated standard errors in the case of positive spatial autocorrelation and deflated standard errors in the case of negative spatial autocorrelation, especially when the sample is based on small geographic areas such as contrasting residential blocks (Gruenewald et al., 1996; Lipton & Gruenewald, 2002).

A number of more recent studies have used sophisticated spatial techniques taking into account the social fabric of local communities when examining the impact of areas

densely populated with alcohol liquor outlets (Alaniz et al., 1998; Lipton, Gorman, Wieczorek, & Gruenewald, 2003; Lipton & Gruenewald, 2002; Gruenewald et al., 2006; Gruenewald et al., 1996; Neilson & Martinez, 2003; Scribner et al., 1995; Speer et al., 1998; Zhu, Gorman, & Horel, 2006). While the socio-demographics of particular areas are considered to be related to increased levels of disorder and violence (Krivo & Peterson, 1996) the addition of high levels of alcohol outlets seem to exacerbate the level of disorder and violence (Gorman et al., 2001; Neilson & Martinez, 2003). Studies specifically controlling for the effects of socio-demographic factors have found that the density of alcohol outlets and the associated violence is independent of the socio-demographic characteristics of surrounding areas (Gorman et al., 2001; Scribner et al., 1995; Speer et al., 1998).

In the Gorman et al. (2001) study, data was collected for 98 group blocks and the multivariate regression analysis revealed that alcohol outlet densities (more violence in high density compared to low density areas) explained close to 20% of the variability in violent crime rates across block groups. In other words, alcohol outlet density was more likely to explain the increase in violence rather than neighbourhood characteristics. Although Gorman et al. (2001) along with Lipton and Gruenewald (2002) found that socio-demographic characteristics in local and adjacent areas influence the levels of violence, the most important predictor seems to be the density of alcohol outlets. In addition, using a spatial population model Gorman et al. (2001) found that while high alcohol outlets impacted adversely on violence in areas where they were located, adjacent block groups were not adversely affected. However, in contrast Zhu et al. (2004) found that high alcohol outlet areas did have an adverse impact on violence in adjacent neighbourhood areas.

While the aforementioned studies clearly demonstrate the importance of alcohol outlet density to the levels of disorder and violence, the socio-demographics of nearby neighbourhoods seem to interact with outlet density related violence. However, the extent of the influence of neighbourhoods surrounding areas with an over abundance of pubs, bars and nightclubs remains controversial. The interactive relationship between alcohol outlet density and the socio-demographics factors require further exploration in order to discover whether the socio-demographics of a particular area encourage the density of alcohol outlets or whether the level of alcohol outlet density affects the social fabric of the nearby communities. The complexity of the alcohol outlet density/violence and disorder relationship is amplified by the fact that different types of alcohol outlets seem to impact on violence and disorder to varying degrees.

3.1.4 The Impact of Different Types of Alcohol Outlets

On-premise sale outlets (particularly bars), have a strong relationship to violence in some localities but not in others (Gruenewald et al., 2006; Lipton & Gruenewald, 2002) while off-premise sale outlets have been positively associated with violence, especially homicide rates (Alaniz et al., 1998; Costanza, Bankston, & Shihadeh, 2001; Scribner et al., 1999; Stevenson, Lind, & Weatherburn, 1999). The rates of violent assaults may also depend on the type of alcohol beverage being sold. For example, violent assaults have been found to be greater in high density outlet areas selling beer and spirits with higher levels of alcohol content (Stevenson et al., 1999). It has also been noted that rates of pedestrian injuries are greater in neighbourhoods near on-premise outlets (LaScala et al., 2000). In addition, while the density of restaurants have been found to be associated with less violence than the density of bars and pubs (Lipton & Gruenewald, 2002) they have been strongly associated

with a higher level of self-reported driving after drinking (Gruenewald, Johnson, & Treno, 2002).

In the study by Gruenewald and his colleagues (2002) 7,826 drinkers were obtained from a general population telephone survey of 1,353 postal code areas in California. In addition to examining levels and frequency of alcohol consumption the preferred drinking location was also noted. The authors found that whereas restaurants were directly related to greater drinking frequencies and driving after drinking, bar densities were inversely related to driving after drinking. This finding suggests that high density restaurant areas in which alcohol is consumed increases the potential for motor vehicle accidents and possibly pedestrian injury. This study coupled with the study by Lipton and Gruenewald, (2002) supports the contention that density of restaurants are more likely to be associated with drink driving related incidents rather than violent assaults. In contrast, off-premise sale outlets appear strongly associated with violence (Scribner et al., 1999; Stevenson et al., 1999).

The complex interactions of alcohol outlet type, strength of alcohol consumed, place of alcohol outlet and population characteristics may explain the varying degree of violence and disorder among the different alcohol outlet density studies. The Scribner et al. (1999) study highlights the complexity of comparing off-premise and on-premise sale outlets and demonstrates the importance of population characteristics and the type of methodology used in determining outcomes. In the Scribner et al. (1999) study the relationship between alcohol outlets and homicides was examined during 1994 and 1995 using a cross sectional analysis of 155 urban residential census tracts in New Orleans while controlling for a number of demographics factors such as race, unemployment, age, structure and social

disorganisation. A logarithmic transformation of all study variables found that socio-demographics alone accounted for 58% of the variance of homicides rates. When off-premise sale outlet densities were added to the statistical models the amount of variance increased to 62%. No relationship was found between homicides rates and on-premise sale and total outlet density. In addition, it was found that a 10% higher off-premise sale density outlet accounted for a 2.4% higher homicide rate.

The Scribner et al. (1999) study also found a positive association between young males (15-24 years) and homicide rates at the census tract level (statistical divisions for US counties with between 2,500 and 8,000 people which have homogenous population characteristics). However, when other group level predictors of assaultive violence (poverty, high unemployment & family disintegration) were controlled the effect was not only lost, it was reversed. Scribner and his colleagues therefore suggest that this finding indicates that the widely held assumption that higher rates of homicides among young male youth are caused by individual level factors such as risk taking, low self-esteem and lack of conflict resolution skills is fallacious.

It is suggested by Scribner and his colleagues that this kind of ecologic fallacy occurs when a group level association is assumed to be the result of a causal association at the individual level. The authors point out, that in fact, the findings suggest that a neighbourhood with a high young male ratio is no more likely to have a high homicide rate compared to a neighbourhood with a low young male ratio, particularly when neighbourhood-level risk factors are controlled. A possible explanation proffered by Scribner and his colleagues for the over representation of male youth in homicide statistics is that it may be due to the fact that male youth as a group are more likely to reside in high

risk neighbourhoods characterised by poverty, high unemployment, off-premise alcohol outlet density and family disintegration.

Although neighbourhood characteristics may to some extent influence overall levels of violence, they may in fact be less important than density, especially in relation to off-premise alcohol outlets (Gruenewald et al., 2006). While neighbourhoods with a high density of off-premise alcohol sales also have other violence risk factors (poverty & social disintegration), when these factors are controlled, density of off-premise alcohol outlets remains a significant indicator of violence (Gruenewald et al., 2006). Even when the level of alcohol sales in areas is taken into account (to exclude increased consumption as a factor) the association between density of off-premise alcohol outlets and violence remains strong (Stevenson et al., 1999). Graham (2006) suggests that greater violence around off-premise alcohol outlets may be related to the social activities of young at risk males who tend to socialise around these places, something that may be peculiar to the United States. The social factors associated with off-premise alcohol outlets have not been explored rigorously to date (particularly in Australia) and further research in this area is required.

In regards to the relationship between violence and on-premise alcohol outlets the situation is complicated. As mentioned, a strong relationship to violence is observed in some localities and not others. This may suggest that other socio-demographic characteristics interact with on-premise alcohol outlet density (particularly bars) to affect violence rates. Some support for this contention has been found in studies investigating the varying environmental characteristics associated with particular bars, pubs and hotels that indicate some licensed premises are more problematic than others.

3.1.5 Problematic Licensed Premises: The Association between Extended Liquor Trading Hours and Assaults

Studies have shown that the vast majority of assaults seem to occur in and around a small number of licensed premises (bars, clubs & hotels) that have extended trading hours (Briscoe & Donnelly 2001a; Chikritzhs, Stockwell, & Masters, 1997; Homel, Tomsen, & Thommeny, 1991; Stockwell, 1997). In New South Wales, Australia, an analysis of police recorded assaults over a two year period revealed that in inner Sydney, 12% of licensed premises accounted for 60% of assaults, while in Newcastle and Wollongong, 8% and 6% of licensed premises were responsible for 78% and 67% of all the assaults, respectively (Briscoe & Donnelly, 2001b; Briscoe & Donnelly, 2003). These assaults were more likely to occur late at night or in the early morning in and around hotels and nightclubs with extended trading permits compared to licensed premises that did not trade late. Other studies support the contention that a small number of licensed premises tend to be more problematic than others (Considine, Walker, Wiggers, Daly, Hazel, & Fairhill, 1998; Homel & Clarke, 1994; Jochelson, 1997).

In the Homel and Clark (1994) study, 300 hours of observation were carried out by final year graduate students across 147 visits to late-night liquor trading premises. Observers carefully and meticulously recorded and categorised various types of aggressive behaviour and assaults among patrons. Most types of hotel and nightclubs were included in the study. However, the study was based on purposive sampling of premises visited mostly by young males and was conducted in the late evening in hotels and nightclubs more likely to be at risk for high levels of violence. In general, the Homel and Clark's (1994) study along with other observational studies have found that a greater proportion of disorder, aggressive behaviour and assaults are more likely to occur in licensed premises with poor

entertainment, overcrowding, irresponsible beverage serving practices, cheap liquor promotions, inadequate staff training and permissive attitudes to physical violence and sexual harassment (Graham, LaRocque, Yetman, Ross, & Guistra, 1980; Graham, West, & Wells, 2001; Homel & Clark, 1994; Leonard, Quigley, & Collins, 2003).

It has also been demonstrated that a substantial amount of violence among patrons in the problematic licensed premises occur more often in specific places such as corridors, serving bars, dance areas, near exits and outside in the parking lots or on the side walk (Homel et al., 1991; Graham & Wells, 2001; Lang, Stockwell, Rydon, & Lockwood, 1995; Marsh & Kibby, 1992; Martin, Wyllie, & Casswell, 1992; Tomsen, 1997). Such violence often involves males under the age of 25 years and appears to be triggered by a number of factors including conflict with staff, violating bar rules, offensive behaviour, overcrowding, limited bar access, lack of food and conflict over interpersonal relationships (Homel & Clark, 1994; Homel, et al., 2004; Macintyre & Homel, 1997). In addition, most acts of aggression occur between strangers and seem to increase after midnight and around the closing times of hotels and nightclubs (Briscoe & Donnelly 2001a; Chikritzhs, Stockwell, & Masters, 1997; Homel, Tomsen, & Thommeny, 1991; Stockwell, 1997).

3.1.6 Motor Vehicle Accidents and Licensed Premises

Motor vehicle accidents (especially single motor vehicles ones) seem to be more prevalent during the night time, and tend to occur following alcohol intake at alcohol outlets (Gruenewald et al., 1996). As the density of alcohol outlets increases so do the proportion of motor vehicle crashes and this increase is independent of demographic covariates (Scribner, Mackinnon, & Dwyer, 1994). There is an abundance of cross sectional studies that demonstrate the close and positive association between the density of licensed premises

and motor vehicle crashes (Jewell & Brown, 1995; Gruenewald & Ponicki, 1995; Scribner et al., 1994; Treno, Grube, & Martin, 2003; Treno, Johnson, Remer, & Gruenewald, 2007).

In the city of Hobart Tasmania, Australia, police recorded the last place of drinking over a four month period of 716 arrested drink drivers (Wood, Mclean, Davidson, & Montgomery, 1995). This resulted in citation scores being developed for each hotel. Almost half (43%) of the arrested drink drivers cited individual hotels as the place where they had last been drinking. Of the 82 hotels recorded as the last place of drinking, 8 of them accounted for 45% of arrests while 2 of them accounted for 20%. It was noted that some of the hotels with relatively low total alcohol sales experienced a large number of arrests, perhaps indicating that irresponsible beverage serving practices was occurring at these hotels. Although there were some problems with the equitable distribution of citation scores (inability to account for patronage level) the authors concluded that citation data has potential for identifying problematic hotels. These hotels could then be targeted and regulated more carefully with regard to compliance with liquor laws.

In contrast to studies that have found a positive relationship between licensed premises and motor vehicle accidents, a number of cross sectional and time series studies purport that there is no such relationship (Meliker, Maio, Zimmerman, Kim, Smith, & Wilson, 2004; Stevenson, Brewer, & Lee, 1998; Trollidal, 2005). However, when alcohol has been made more available through the introduction of extended liquor trading hours a positive relationship between alcohol availability, licensed premises and traffic accidents has been revealed. This relationship has been demonstrated in a series of studies by Smith (1986, 1988ab, 1990) that examined the impact of extended liquor trading hours across a number of Australian cities. The studies by Smith compared crash induced injuries and

fatalities in areas and time periods with and without extended liquor trading hours.

Significant increases in crash related injuries and fatalities were found in times periods and areas with extended liquor trading hours. In addition, Smith discovered that when closing times are varied, a shift in the pattern of drink driving offences and traffic accidents coincides with the new closure times.

In a more recent study, Chikritzhs and Stockwell (2006) examined the impact of later liquor trading hours in Perth, Western Australia on levels of impaired driver road crashes and driver breath alcohol levels (BALs). Impaired drivers involved in road crashes and their level of BALs were matched with their last place of drinking involving 186 hotels, 43 with later liquor trading (to 1 a.m.) and 143 closing at earlier hours. Crash rate trends and other possible confounders were taken into account. Although no relationship was found between driver BALs and the introduction of later liquor trading, a significant increase in monthly crash rates were associated with hotels that traded later. It was noted that these particular hotels sold higher volumes of high alcohol content beer, wine and spirits. Therefore the characteristics of patrons coupled with the types of hotels they visit could be considered as contributing factors to alcohol impaired road crashes.

The road safety impact of extended liquor trading has also been examined in Ontario, Canada by Vingilis, Mcleod, Seeley and Mann (2005). These researchers compared group monthly traffic fatalities before (across four years) and after (across three years) the introduction of extended liquor trading hours. Traffic fatalities in the neighbouring regions of New York and Michigan were also compared with the Ontario data and there was little evidence that extended liquor trading impacted on alcohol-related crash fatalities.

Although this study conflicts with a number of other studies, the overwhelming evidence

favours the view that increasing availability of alcohol through extended liquor trading as well as its availability generally in specific types of licensed premises adversely impacts on road crash related injuries and fatalities.

A number of recent longitudinal studies have been implemented to avoid some of the bias associated with cross sectional data at the census tract level (autocorrelation & impact of surrounding areas) as well as accounting for price trends and increases in alcohol outlets over time. The results of cross sectional data linking an increase in licensed premises to an increase in traffic crashes have been confirmed by Treno, Johnson, Remer, & Gruenewald (2007) in their six year study examining road crashes across 581 postal code areas in California. This study also collected features of the local population such as demographics, household size and retail markets. Police reports and hospital discharges associated with road crash injuries were positively associated with bars and off-premise alcohol outlets. Based on the same postal code areas across the same time span, Gruenewald and Remer (2006) had previously analysed the link between alcohol outlet density and assaults utilising a cross sectional time series analysis. The authors not only compared three types of outlet density (bars, restaurants & off-premise alcohol outlets) with assault rates but also controlled for other types of retail places and household income. A strong link was found between assault rates and bars and other off-premise alcohol outlets but not for restaurants. In addition, as the density of bars increased, violence not only increased in the locality of the bars, but in the neighbouring regions as well.

Key Findings:

A large proportion of crime is committed by young males who have consumed alcohol around the time of the offence;

The casual relationship between alcohol and crime is complex but the influence of alcohol should not be regarded lightly;

A large of percentage of both victims and perpetrators have been under the influence of alcohol at the time of their conflict with each other;

Serious crimes of violence increase as the total sales in alcohol increase;

The escalation of violence and disorder is closely associated with alcohol outlet density;

Licensed restaurants are more likely to be associated with driving after drinking;

Pubs and bars are more likely to involve crimes of violence and disorder;

Alcohol-related offences more often occur in the late evenings on weekends; and

The majority of alcohol-related violent offences occur in and around a small proportion of licensed offences; and

Alcohol-related violence is often associated with extended liquor trading hours, irresponsible alcohol serving practices, overcrowding and an environment that encourages unruly behaviour;

Resolutions:

A greater understanding about the relationship between alcohol and crime will enable the development of effective alcohol-related crime prevention strategies;

The target of alcohol intervention programs should be young people preferably before they reach the legal drinking age;

It is important that alcohol intervention programs address wider contextual issues such as poor education, unemployment, lack of life skills and poor health habits;

The overall total sales of alcohol must be reduced in order to reduce and prevent serious crimes of violence;

Alcohol outlets trading late especially pubs and bars should not be densely located in order to avoid an escalation of violence

The small proportion of licensed premises that are associated with drunkenness and unruly behaviour should be targeted by police and liquor licensing officers to prevent breaches of liquor licensing regulations; and

Regulations that prevent overcrowding and demand responsible serving of alcohol practices should be rigorously enforced.

3.2 What has been the impact of the 3am lockout on incidence of alcohol-related violence?

Recently, in Australia a number of jurisdictions have introduced measures to control alcohol-related violence and disorder by preventing patrons from entering or re-entering late night trading licensed premises for a specific period prior to their closure. For example, in Queensland the State government has amended the Liquor Act in order to improve public safety in and around licensed premises by the introduction of a comprehensive package of interventions. These interventions are currently being progressively implemented and include tougher liquor enforcement measures, improved security measures, increased transport as well as the prohibition of explicitly marketing discounted liquor and competitions involving alcohol. In addition, licensed premises are required to display house rules and abide by a code of conduct that encourages the responsible service of alcohol. If the licensed premise has an extended trading permit to 5:00 a.m. patrons who leave after 3:00 a.m. are not permitted to re-enter and new patrons are also not permitted to enter. However, patrons who are inside the licensed premise may remain inside and continue to consume alcohol until the time of closing. This strategy referred to as the lockout policy was instigated in response to the growing public concern about alcohol-related violence and disorder associated with extended liquor trading hours.

The lockout strategy as a crime prevention measure appears to have been utilised only within Australia and has not been evaluated extensively to date. The only evaluation study to date reported in detail relates to the imposition of a 3 a.m. lockout on all late-night entertainment venues in the Central Business District (CBD) of the City of Ballarat, Victoria, Australia (Operation Link: Be Safe Late Program (OLBSL), 2004). In addition to lockout, increased lighting, extra police

and a target police patrol group were provided within the precincts of the entertainment venues. Police crimes statistics were analysed for 12 months prior to the lockout and for a 12 month period during the lockout. The results of the study indicated that assaults in licensed premises decreased by 47.5% and there was a reduction in assaults in public places by 33.3% following the introduction of the lockout. Although there was an overall decrease in property damage (17.3%) that involved retail stores, residential premises and public places, property damage to licensed premises increased by 25%.

The lockout strategy was initially introduced on the Gold Coast in 2004 and later introduced into Brisbane in 2005 and subsequently extended State wide. Palk and his Colleagues (Davey, Palk, & Nielson, 2006; Davey, Palk, Freeman, Hart, & David 2005; Palk, 2008) examined the effectiveness of lockout as part of a larger program of research referred to as 'Alcohol and Drug Incident management Survey' (ADIMS) that aimed to examine police attendance at all incidents (including incidents involving alcohol, drugs & other substances) across a number of locations throughout Queensland.

Palk and his colleagues (2008) generally found the success of the lockout was modest. Overall there was some significant positive effect for some specific types of offences in some areas (i.e., reduced traffic offences (13%) & personal trauma (20%) in Brisbane & reduced street disturbances (12%) & sexual assaults (33%) in the Gold Coast) and no changes for other types of offences. There was no significant reduction for assault related offences but police, security officers and hoteliers reported overall less violence. The lockout should be viewed as only one component of a multiple component strategy that includes increased police enforcement and liquor licensing, training for bar person in responsible service of alcohol and conflict management, improved public transport,

improved lighting, improved security cameras and collaborative community alcohol management partnerships/accords.,

3.3 What other impacts has the 3am lockout had on patrons, venues, and other stakeholders?

Palk and his colleagues (Palk, 2008) also examined the perceptions of key stakeholders (e.g., Police, Hotel Owners/Operators, Security Staff & Taxi Drivers) through qualitative interviews in order to explore critical process issues related to the success or otherwise of the lockout policy. Interviews with licensees revealed that although all were initially opposed to the lockout policy as they believed it would have a negative impact on business, most perceived some benefits from its introduction. Some of the benefits included, improved patron safety and the development of better business strategies to increase patron numbers.

In regards to managing intoxicated persons licensees indicated that door staff and crowd controllers felt that the lockout provided a means to exclude the most troublesome patrons. Views about street behaviour and violence were evenly mixed with some participants believing that there were fewer problems related to transport, crowding and violence on the street while others believed the lockout policy had no affect on these issues. Most licensees denied there are any major problems related to violence in their premises and importantly, indicated that violence was more likely to occur on the streets around licensed premises.

In relation to the impact of the lockout policy on business revenue, most licensees indicated that patron numbers and income remained largely unaffected by the lockout. The majority of licensees stated that they were initially opposed to the introduction of the lockout because they felt it would have a negative impact on income revenue. However,

once the lockout was introduced, licensees implemented novel marketing practices and changes in business practices to retain patrons within the licensed premise during the lockout time period. In fact the licensees believed that these strategies coupled with the lockout policy in fact improved patron numbers and income revenue.

When the lockout was first introduced, some door staff reported that they encountered an increase in aggression towards them when patrons were refused entry. Concern was expressed about the long waiting lines on footpaths created by patrons while they were trying to enter licensed premises and the potential for these patrons to be struck by motor vehicles. There was some perception that violence on the street was still at a similar levels prior to the lockout. However, police reported that it was much quieter during the lockout and almost like a ghost town during the lockout time period. At least one licensee believed that the lockout had created behavioural problems for two time periods (3am & 5am) in relation to patrons trying to gain access to licensed premises or trying to obtain a taxi. Previously, the licensee indicated that there was only one time period (5am) in which most behavioural problems occurred.

Some licensees also felt that both interstate and international visitors were confused about the lockout as they had not experienced this sort of initiative in their local area. There also was a belief among licensees that the lockout had caused some anxiety among patrons as to which licensed premise they would prefer to be in just before the lockout commenced. In addition, patrons who chose licensed premises without designated smoking areas could not leave the premises for a smoke during the lockout due to a no smoking policy in licensed premises that had been recently introduced by the State government. If patrons did leave for a smoke they could not re-enter the licensed premise or any other licensed premise. A

similar problem was created for patrons who may have wished to leave licensed premises to calm down after experiencing some conflict with other patrons.

Some participants felt that waiting times for taxis had improved during the lockout time period. However, a number of participants clearly believed that the lockout strategy had in fact created two rush hours to access public transport whereas previously there had only been one. There also seemed to be a general perception that waiting lines were extremely long and public transport (buses, train & taxis) was poorly coordinated.

A problem noted by one participant related to a group of homeless people who hung around licensed premises. This group of people were generally not patrons of licensed premises, but rather spent time hanging around them looking for opportunities to score illicit drugs or approach people for money. This problem appeared to be more prevalent in the mall areas of Brisbane City and Fortitude Valley rather than in the Gold Coast area.

Other safety concerns expressed by participants related to a lack of police and security presence and police being generally too slow to respond to behavioural problems. Concern was also expressed that environmental factors such as narrow footpaths, dark alley ways and long patron lines increased the risk of injury and aggressive outbursts among patrons. In addition, some participants felt that there were too many nightclubs densely located in a small geographical area that were in part responsible for creating crowding and violence on the streets. Another concern related to the dispensing of illicit drugs in and around nightclubs, particularly clubs owned by bikie groups. In addition, some participants believed that the security industry was not adequately regulated in that some of them had employees who were associated with a criminal element.

A number of participants suggested a variety of strategies that might improve public and patron safety. These included ensuring police beats were highly visible and that police presence was more regular and a need for more CCTVs. It was suggested that barriers should be erected along footpaths in order to prevent patrons spilling onto roadways and to protect them from passing traffic. In addition, a need was expressed for trained crowd controllers around taxis lines and ranks. Furthermore, contravention of liquor licensing laws should be policed by a demerit point system and penalties allotted to varying demerit points.

Responses from the participants indicated that there were differences in the implementation processes between the Gold Coast and Brisbane City/Fortitude Valley. The lockout policy was introduced in the Gold Coast following a lengthy consultation process. In addition, the Gold Coast had been serviced by a well coordinated Surfer Paradise Action Project since the middle of the 1990s and specialised police unit (LEAPS) that worked closely with other government agencies and licensees to enforce liquor licensing laws. The lockout policy was initially coordinated by the local council in the Gold Coast area.

In contrast the lockout strategy in Brisbane City/Fortitude Valley was introduced in the context of media publicity and public concern about violence and disorder on the streets around licensed premises trading late. While there was some consultation this appears to have been carried out in a rather hasty manner and some licensees and security firms believed they were excluded from the process. While it is acknowledged that there were some alcohol accords (eg., VAMP) in place, participants indicated that meetings were irregular. In addition, police in the Brisbane City/Fortitude Valley did not operate in a specialised way as they did on the Gold Coast. The policy in regards to how incidents

requiring attendance by police were dealt with also changed after the introduction of the lockout. It should also be noted that the majority, 23 of the 25 late-night trading licensed premises on the Gold Coast are located in a small geographical area of Surfers Paradise.

However, there are a greater number of licensed premises trading late in Brisbane City/Fortitude Valley

3.4 What changes, if any, should be made to opening hours, and alcohol service strategies within those hours, to reduce alcohol-related violence?

Ideally based on the research, hours of liquor trading should be reduced as less access to alcohol reduces both the short term harms (i.e., injury due to violence & accident) and chronic long terms harms (alcohol-related diseases). Hence, early opening hours should be banned. The lockout should be maintained and enhanced by ensuring that programs such as the LEAPS program is implemented in a systematic and consistent manner State wide. Liquor licensing enforcement should be rigorous and public and alternative transport options should be improved to ensure that patrons can quickly and easily leave late night entertainment areas.

Key Findings:

Some jurisdictions in Australia have implemented a lockout for late night liquor trading premises to curb alcohol-related violence;

The lockout among other measures introduced in the CBD of Ballarat, Victoria reduced assaults by 47.5%;

The lockout was found to have modest effects in Queensland with a reduction in some offences such as traffic, disturbance and sex offences in and around some licensed premises but not others;

The lockout had no impact on overall assault rates in Queensland;

Police, security officers & hoteliers reported less overall incidents of violence and disorderly behaviour following the introduction of the lockout in Queensland;

Some of the benefits of the Queensland lockout have included improved public safety, development of better business strategies and increased patronage for some licensed premises; and

Other safety concerns around Queensland licensed premises indentified include: lack of public transport; flow of traffic a danger to patrons in late night entertainment areas; untrained security personal; lack of police; and other security measures.

Resolutions:

The lockout strategy as a single measure should not be viewed as a panacea to reduce alcohol-related violence in and around late night licensed premises;

The lockout is one countermeasure when combined with a multiple of counter measures can be effective in reducing violence and disorder in and around late night entertainment areas

A multi component approach that involves improved security measures, increased police patrols, rigorous enforcement of liquor coupled with community support is the best strategy.

The flow and speed of traffic needs to be restricted in and around densely located late night licensed premises to prevent intoxicated patrons being hit by vehicles;

Footpath barriers to prevent patrons spilling onto road ways need to be erected in and around late night trading licensed premises; and

Trained security officers need to be placed at all taxi ranks around late night licensed premises.

4. Flow on issues for emergency services workers, police and front line health workers

4.1 Impact of alcohol-related offences

The prevalence of alcohol-related incidents attended by operational police within three of the largest cities of Queensland e.g., Brisbane, Gold Coast and Townsville were examined by Palk and his colleagues (Palk, Davey, & Freeman, 2007ab). As mentioned, there have been only a relatively small proportion of Australian studies that have examined the prevalence and characteristics of alcohol-related incidents requiring police attention and most are based on small sample sizes that are representative of specific populations. In Palk et al. (2007ab) studies, participants were first response operational police officers who completed a modified activity log over a 5 week period, identifying the type, prevalence and characteristics of alcohol-related incidents that were attended. During the study period police attended 31,090 incidents.

Overall, approximately one in four incidents attended by police during the study period, involved alcohol while only 3% were drug related. The most common incidents police attended were vehicle and/or traffic matters, disturbances and offences against property. A closer examination revealed that disturbances and vehicle/traffic type incidents were almost twice as likely to be alcohol-related as compared to the overall percentage of incidents. Similar findings were evident between metropolitan and non-metropolitan areas which highlights the consistent impact of alcohol on police resources. Offenders were more likely to be young males, while victims consisted of a relatively even number of males and females. The findings highlight the pervasive nature of alcohol across a range of criminal incidents, demonstrating the tremendous impact alcohol-related incidents have on police resources.

Table 1: Overall prevalence of alcohol and other drug related incidents

Incident Type	Number of Incidents	Percentage of Total Incidents
Non-alcohol	N = 22915	73.7%
Alcohol-related	N = 7116	23%
Drug related	N = 639	2%
Alcohol & drug related	N = 282	1%
Volatile substances	N = 138	.3%

Table 2: Proportion of alcohol and other drug related incidents across policing areas

Incident Type	Metro North		Gold Coast		Townsville	
	Freq	%	Freq	%	Freq	%
Alcohol-related	3089	22	1916	21	2111	26
Both alcohol and drug related	110	1	115	1	57	1
Drug related	336	2	197	2	106	1
Neither	10492	74	6763	75	5660	71
Volatile substance	93	1	6	0.1	38	0.5
TOTAL	14120	100	8997	99.1	7972	99.5

Table 3: Proportion of incident categories that were alcohol-related

Incident Category	Number of Incidents	% Alcohol
Disturbances	6,414	42
Vehicle/Traffic Related Incidents	7,321	41
Offences Against the Person	736	32
Clarification Codes*	310	32
Assist Emergency Services	96	31
Supplementary Verification/Result Codes	106	30
Spill Leak	10	30
Police Support	789	19
Personal Trauma	676	17
Sexual Offences	162	17
Miscellaneous	1,428	14
Aviation/Marine/Rail	16	13
Prowler	962	12
Crisis Situation	132	11
Community Assistance	2,532	7
Stealing Offences	3,973	6
Offences Against Property	4,685	6
Absconders	503	4
Fire	159	4
Explosives	80	3
Total	31,090	-

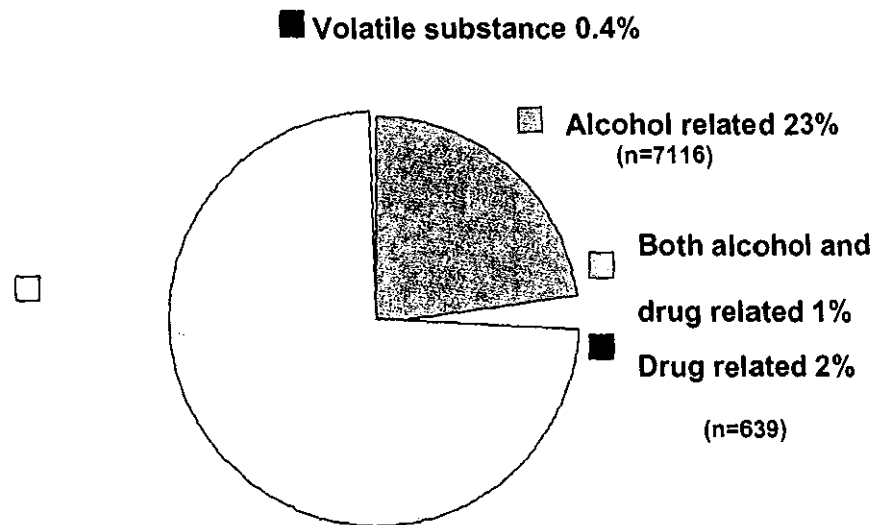


Figure 1: Overall Prevalence of Alcohol and Other Drug Related Incidents

Overall the findings indicate that a substantial proportion of current police work involves attendance at alcohol-related incidents i.e., 25%. The most common incidents police attended were vehicle and/or traffic matters, disturbances and offences against property. The major category of offences most likely to involve alcohol included vehicle/traffic matter, disturbances and offences against the person (e.g., common & serious assaults). These events are most likely to occur in the late evenings and early hours of the morning on the weekends, and importantly, usually take longer for police to complete than non-alcohol related incidents.

As mentioned previously, patients presenting at accident and emergency centres due to violence are two to five times more likely to be intoxicated than patients injured due to other causes (Cherpitel, 1994, 1997, 2007). Furthermore, injuries from assaults tend be more severe when alcohol is involved (Martin & Bachman, 1997) which strongly indicates that intoxication greatly increases the risk of violence and injury. In fact a study across 16

countries that involved 10,471 patients being treated at emergency hospital centres found heavy drinking was highly correlated with sustaining an injury (Cherpitel, 2007). Hence, if alcohol-related violence could be significantly reduced the heavy workloads experienced by emergency services and hospital and accident centres would be greatly reduced.

4.2 How can negative impacts on these workers be reduced?

A multiplicity of strategies needs to be employed to address the injuries and harms related to excessive alcohol consumption. In the first instance police and emergency services must be appropriately resourced and trained to manage the work load and the difficulties associated with alcohol-related injuries. The writer has already commented on a range of strategies such as access to alcohol, liquor trading times and crime prevention strategies. Additionally, the government needs to give serious consideration to reducing the alcohol content of beverage and targeting licensees who repeatedly breach liquor regulations.

As noted, only a small proportion of hotels/pubs are responsible for the large majority of alcohol-related violence. Intensive problem oriented policing programs need to be implemented to target these licensed premises to ensure compliance with the regulations and the imposition of severe penalties such as heavy fines, reduced trading hours and revocation of trading license for repeated breaches. It is also very important for emergency organisations to acknowledge the severe stress that employees face in dealing with the consequences of alcohol-related violence. Additionally, employers should monitor employees' risk of alcohol-related problems and work stress. Programs and opportunities to seek support should be provided in a nonjudgmental and confidential manner.

Key Findings:

Only a small proportion of Australian studies have examined the prevalence and characteristics of police attended alcohol-related incidents;

Palk and his colleagues found that a quarter of all incidents requiring police attention involved alcohol and 3% were drug related;

The most common alcohol-related incidents were traffic, disturbances and assault-related incidents;

Disturbances and traffic incidents are almost twice as likely to be alcohol-related compared to other incidents;

The percentage of alcohol-related incidents was consistent across rural, provincial and metropolitan policing areas;

Alcohol involvement was found to be pervasive across a range of criminal incidents;

A substantial proportion of current police work involves attendance at alcohol-related incidents (25%); and

Patients presenting at accident and emergency centres due to violence are two to five times more likely to be intoxicated than injuries due to other causes;

Resolutions:

A multiplicity of strategies needs to be employed to reduce alcohol-related harm;

Police and emergency services must be appropriately resourced and trained to manage alcohol-related incidents

Serious consideration needs to be given to reducing alcohol content in beverages;

Licensed premises that consistently breach liquor regulations need to be harshly dealt with (i.e., heavy fines; loss of licence, reduced hours of operation); and

The small number of hotels responsible for the large majority of alcohol-related violence should be systematically targeted with problem oriented policing and crime prevention programs;

Training and supportive programs should be available for police and emergency staff to manage work related stress;

5. Education Campaigns and their role in cultivating effective social change in terms of community attitudes to alcohol consumption

5.1 How do we change the drinking culture and create a culture of individual responsibility and the effectiveness of education programs

Historically, educational campaigns have relied on providing factual information about the effects of excessive alcohol consumption and scare tactics and fear to entice a change in drinking habits. There was a belief if negative attitudes could be associated with excessive alcohol use then individuals might be more likely to contemplate the disadvantages of excessive alcohol consumption. These kinds of programs have been largely ineffective in reducing excessive alcohol consumption (see Heather & Stockwell, 2004; Lewis, Watson & Tay, 2007; Lewis, Watson & White, 2008).

In more recent times, programs have focussed on assisting individuals to develop personal skills and practice controlled drinking. The most effective programs appear to be those based on harm reduction methods that focus on education, personal skills training and relapse prevention techniques. Programs that are highly structured, with clear goals and based on the principles of cognitive and behavioural therapy are more likely to bring about positive change than any other programs. These kinds of programs should involve the wider community and address alcohol concerns within the broader health context.

Key Findings:

Educational Campaigns based on scare and shock tactics are not that effective

Providing factual information in the context of wide community positive messages that support low alcohol consumption are beneficial; and

Structured programs based on the principles of cognitive behaviour therapy are the most effective.

Resolutions:

Implement educational campaigns that contain realistic and accurate information about alcohol use;

Promote low alcohol consumption through positive messages in the media, schools and wider community; and

Messages about alcohol use should be conveyed within the context of broader health concerns.

6. The role of parents in influencing attitudes towards alcohol consumption

6.1 How are parents influencing the attitudes of young Queenslanders?

The aforementioned review regarding the theories and factors underpinning alcohol misuse, disorder and crime (see pp. 23-41) emphasise the crucial role that learning, modelling and parental guidance play in the adoption of responsible or irresponsible alcohol consumption. The research reviewed in this paper also indicates that children reared in families in which parental guidance is lacking and regular drinking is supported are more

likely to experience higher rates of alcohol consumption in adulthood. Parents therefore have a major influence on the future drinking behaviour of their children and need to be equipped with the information to provide their children with education about the harmful effects of excessive levels of alcohol consumption.

Additionally, children who are raised in disadvantaged circumstances, and have learning problems, particularly ones that are associated with hyperactivity disorders are often neglected by their families, the education system and the wider community. It is these children who appear to be most at risk of failing to form positive social peer interactions and developing poor life skills. Consequently, these children are more likely to become isolated and alienated from the influence of the wider community that is supportive of prosocial behaviour.

6.2 How can parents be assisted in instilling responsible attitudes to drinking

If parents are to provide their children with appropriate modelling regarding the adoption of healthy attitudes to alcohol consumption they must be armed with accurate information about the effects of harmful levels of drinking. Parents need to be made aware that they can have a major influence on the future behaviour of their children. Educational packages, community and school based programs can be a very effective and efficient means of providing parents with information about the effects of alcohol.

However, the school and wider community must also be consistently supportive of promoting messages that encourage the avoidance of risky levels of alcohol consumption. Although providing parents with alcohol information and how to communicate more effectively with their children can be an effective tool in promoting responsible drinking

attitudes and behaviour in their children (Spath, Redmond, Hockday, & Shin, 1996; Spoth, Redmond & Shin, 2001) parents must be supported by the wider community. Hence, policy, practices and educational programs provided by schools can be an effective means to support parents and have the potential to reduce future levels of alcohol consumption (see McBride, et al., 2000; Shope et al., 1994; White & Pits, 1998).

Key Findings:

Parents play a crucial role in influencing the future drinking behaviour of their children;

Children model the drinking behaviour and attitudes of their parents; and

Children from disadvantaged families, especially those who experience learning problems and hyperactively disorders are more likely to misuse substances later in life;

Resolutions:

Parents must be armed with accurate knowledge about the effects of harmful drinking levels;

Educational packages and school based programs are an effective means to assist parents to be better prepared to educate their children about the effects of alcohol;

The school and wider community must consistently provide messages in a positive manner that support low risk alcohol consumption; and

Parents with at risk children for possible future misuse of alcohol must be targeted.

7. The Economic Costs of Alcohol-related Violence

7.1 What is the economic cost of alcohol related violence to the Queensland community? How could this cost be reduced?

Australia wide it has been estimated that just over 15 billion dollars was spent during the financial year of 2004/2005 to treat and manage injuries, illness, deaths, crime, violence, lost productivity and other harms associated with alcohol misuse (Collins & Lapsley, 2008). Most Australians aged 14 years and over support the consumption of alcohol (45.2%, AIHW, 2008) and a large proportion of Australians who consume alcohol do so in excess of the recommended consumption levels (Australian Bureau of Statistics, 2004/2005).

In a recent a study (Alcohol pressuring hospitals study) being undertaken by the National Drug Research Institute (NDRI, in press) it was found some 80,000 Australians are admitted to hospital on an annual basis due to alcohol misuse. The NDRI study also found that hospital based treatment due to alcohol misuse increased by 30% between 1996 and 2006. It has been noted by the NDRI that in States where deregulation of the liquor industry has occurred (such as Victoria) and in which liquor trading has increased to 24 hour opening and there have been increases in liquor outlets, hospitalization due to alcohol misuse is far greater. States that exercise a higher degree of control over the liquor industry such as Western Australia and Queensland have a lower recorded hospitalization rate due to alcohol misuse.

In Queensland it has been estimated that some 15% of people aged over 14 years consume alcohol at risky levels that result in long term harms and some 33.9% drink at risky levels resulting in short term harms (The Health of Queenslanders Report, 2008). Furthermore, the riskier drinking profile occurs among young people and results in some

700 (mostly males) deaths and some 26,000 hospitalisations per annum. The Health of Queensland Report (2008) estimates that the economic cost of treating alcohol-related injuries and disease in Queensland is \$128 million per year.

The research that has been explored throughout this paper overwhelmingly demonstrates that reductions in alcohol-related social and economic costs can be achieved if alcohol consumption is reduced. The best measures to achieve this seem to be increasing alcohol taxes, banning alcohol promotions and introducing tough intervention programs to prevent drink driving. Additionally, as mentioned intensive scrutiny and regulation of the liquor industry is required along with laws to prevent the development of high density alcohol outlets such as late night liquor trading premises. In essence reducing alcohol misuse and its impact requires a reduction in the incidence of intoxication, and introducing countermeasures that are effective in improving public safety, in and around late night licensed premises and preventing alcohol impaired driving.

Key Findings:

Alcohol-related deaths, injuries and harms cost the Australian public approximately 15 billion dollars annually;

Most Australians over the age of 14 years support the consumption of alcohol;

A large proportion of the Australian drinking population drink in excess of the recommended levels of alcohol consumption;

Some 80,000 Australians are admitted to hospital on an annual basis due to alcohol misuse;

Hospital based treatment due to alcohol misuse is on the increase;

States with 24 hour opening times for alcohol outlets and more alcohol outlets have increased hospital rates compared to States that exercise tighter control over the alcohol industry;

In Queensland 15% of the drinking population drink at levels that result in long term harms and about 34% drink at levels that result in short term harms;

On an annual basis some 700 Queenslanders die and 26,000 are Hospitalised due to alcohol misuse; and

It costs Queenslanders 128 million dollars annually to treat alcohol-related injuries, harms, and disease.

Resolutions:

A key resolution in reducing the enormous cost of treating alcohol-related harms lies in reducing the overall consumption rate of alcohol;

Liquor trading should not be extended to 24 hour opening times as in some other states otherwise this will result in increased hospitalisations and the overall costs of treating alcohol-related harms;

If the government is serious about reducing the economic costs of alcohol misuse then tighter controls must be exercised over the alcohol industry; and

Countermeasures that have been demonstrated to reduce alcohol intake such as alcohol tax increases and reduced liquor trading hours must be implemented.

8. Final Comments

Internationally and in Australia, alcohol-related violence and disorder is a major burden to the community and has a substantial impact on police and emergency services. The research presented in this paper overwhelmingly demonstrates that if the government is serious about reducing the social and economic costs of alcohol misuse then policies and practices that reduce the overall alcohol consumption rates of the drinking population must be implemented. The government must be bold and resist the pressure of alcohol industry lobbyists to deregulate the alcohol industry. In fact, as pointed out deregulation increases

hospitalization rates due to alcohol misuse. There is an urgent need for tighter controls over the alcohol industry particularly over those sectors of the industry which promote excessive alcohol use. Increasing alcohol tax is one sure measure to reduce the overall alcohol intake of the drinking population.

However, a more effective long term strategy is to target the population before they reach an age at which they become interested in alcohol consumption. Every effort must be made to protect future generations of young people from experiencing the effects of alcohol misuse in the way that our current young generation do. Effective educational campaigns and intervention programs are currently available and should be introduced on a State wide basis. The most effective intervention programs are those that convey a message in a positive manner about the benefits of low risk alcohol consumption. This message must be supported by the media, the alcohol industry, schools and the wider community. Shock and scare tactics should be avoided as they are not very effective. The alcohol industry should be encouraged and rewarded for implementing campaigns that promote responsible drinking. Conversely, severe penalties should apply for promotions by the alcohol industry which support irresponsible drinking.

Positive community wide messages about responsible alcohol use should be supported by providing parents with accurate information about the effects of alcohol. Parents need to be trained how to communicate with their children about the harmful effects of alcohol. Importantly, parents need to role model responsible alcohol consumption. Furthermore, children who are exposed to parents with alcohol misuse problems need to be targeted in an effort to assist them to cope with their situation and

prevent them from adopting unhealthy attitudes towards alcohol that place them at risk of future harmful drinking.

The current generation of young people aged between 17 and 29 years who are the most at risk group for alcohol-related harms need to have available to them effective screening and educational programs to assist them to engage in responsible alcohol intake. For instance, effective brief alcohol intervention programs that can be easily implemented in accident and emergency centres should be available State wide. Additionally, there is an urgent need to implement brief intervention programs that tackle first time convicted drink drivers. Drink driving programs that are based on cognitive behavioural therapy coupled with probation supervision and vehicular electronic devices to prevent drink driving should be mandatory for repeat drink drivers

Intervention programs also need to be specifically aimed at the late night liquor trading venues. It is in these areas that the majority of alcohol-related violence and disorder occur. The most effective interventions tend to be ones that have a multiplicity of components. It may also be necessary to adjust interventions to the culture and particular needs of the area as some interventions may be suitable for some areas and not other areas. Hence, interventions based on intelligence led and problem oriented policing that target the specific needs and concerns of a particular area are the most effective in reducing alcohol-related crime and disorder. The components of effective intervention for curbing alcohol-related violence in and around late night entertainment areas should include:

- Reduced or restricted trading hours as extended trading hours is associated with increased violence and traffic incidents;
- Enforced standards of responsible alcohol service

- Trained bar staff and security officers that will be held accountable for their actions;
- Increase police patrols, lighting and CCTV cameras;
- Appropriate level of public transport to meet the needs of patrons;
- Rigorous enforcement of liquor licensing regulations such as the LEAPS program;
- A lockout strategy to curb intoxicated patrons travelling between venues in the early morning hours;
- Mandatory codes of conduct;
- Reducing the density of late night trading club, pubs and hotels; and
- Severe penalties for allowing overcrowding in bars, nightclubs and hotels.

Finally, the research evidence suggests that substantial reductions in alcohol-related costs and harms can be achieved if the government is willing to be bold and introduce policies that will effectively reduce overall alcohol consumption rates and encourage responsible alcohol intake. The government must be prepared to take on the alcohol industry and implement policies that will prevent the promotion of irresponsible drinking and in some areas (e.g., Aboriginal communities) restrictions of alcohol sales must be maintained for the overall health of the community.

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