Trends & issues
in crime and criminal justice

No. 372 July 2009

Australian Government
Australian Institute of Criminology

Alcohol and homicide in Australia

Jack Dearden and Jason Payne

Foreword | *International research suggests alcohol consumption increases the number of homicides and that homicides involving alcohol differ significantly to non alcohol-related homicides. The current study sought to build on the limited Australian research on alcohol-related homicide by examining solved homicides recorded in the National Homicide Monitoring Program over a six year period. Of the 1,565 homicides, nearly half (47%) of the incidents were classified as alcohol related and of those, over half involved both the victim and offender consuming alcohol prior to the incident. Similar to previous research, the analysis found victim, offender and incident characteristics differentiated alcohol-related homicides from other homicides. Further analysis showed that the incident characteristics most clearly differentiate alcohol-related homicides, which highlights the crucial role situational and environmental factors play in precipitating alcohol-related homicide. A key finding, not found in earlier research, was that alcohol is equally likely to be implicated in intimate-partner homicides as it is in all other homicides. However, homicides involving women killing male intimate partners were far more likely to involve alcohol consumption by victim or offender or both, and that the overwhelming majority of Indigenous intimate-partner homicides were alcohol related.*

Judy Putt
General Manager, Research

Alcohol and its role in precipitating or influencing violent altercations is always near the public consciousness for good reason. First, each year around 4.5 percent of Australians (775,000 persons aged 14 years or older) report being physically abused by someone they believe was under the influence of alcohol and a further 25 percent report being verbally abused or put in fear (AIHW 2008). Second, self-report data from the Australian Institute of Criminology's (AIC) Drug Use Monitoring in Australia (DUMA) project suggests that a large number of people who were detained by the police for a violent offence had been drinking in the 48 hours prior to their arrest. In 2007, this was true for half of all those detained by the police across nine data collection sites nationally (Adams et al 2008). Third, interviews with some of Australia's violent male prisoners also suggest that many see alcohol as having an important causal role in their offending (Makkai & Payne 2003). Specifically, one in three (34%) regular violent prisoners self-reported addiction to alcohol, while just under half (44%) reported being intoxicated at the time of their most serious offence (Makkai & Payne 2003). Fourth, aggregate alcohol consumption patterns appear to be highly correlated with the incidences of violence. Livingston (2008) found that outlet density had a positive correlation with assault, but with a ceiling effect, while Griggs and her colleagues (2007) reported high levels of recent alcohol consumption among hospitalised victims of assault.

In brief, some research provides evidence to support the notion that alcohol consumption can affect behavioural change. Both Graham and Homel (2008) and Dingwall (2006) provide comprehensive reviews that outline various behavioural explanations described in the literature. These include the concept of alcohol myopia, or 'alcohol short sightedness', which suggests that alcohol causes people to focus only on proximal issues or the immediate situation, with limited regard to the consequences of their actions. This in turn creates a greater potential for violence. Other research on alcohol's affect on the brain suggests alcohol makes it harder to appreciate other people's perspectives, to problem solve and above all, makes drinkers more impulsive, emotional and introspective.

Despite some evidence of possible behavioural consequences from alcohol consumption, most research highlights the very selective manner in which alcohol consumption seemingly leads to violence (Graham & Homel 2008). Felson, Teasdale and Burchfield (2008) for example, found that alcohol may indeed increase the probability of violence among those with violent predispositions. However, because the vast majority of persons who drink alcohol do not become violent, it suggests alternative factors mediate the alcohol–violence relationship. It is for this reason that many of the dominant explanations for the alcohol–violence relationship focus on other factors, such as personality, environmental and social cues.

Graham et al (1997) devised a now widely used framework that lists a number of possible explanations. These include the direct pharmacological effect of intoxication on behavioural outcomes, coupled with:

- the impact of drinking and the drinking context on the personality of the drinker
- the role of situational and environmental factors present at the time of the incident
- the role of social and cultural attitudes towards drinking and the acceptability of alcohol-related violence.

The fact that any single incident of violence may involve one or more of these influences makes the alcohol–violence relationship difficult to explain in aggregate terms.

Previous homicide research

Homicide is unique and research into this form of violence has shown a strong relationship with alcohol. For example, aggregate-level analysis of alcohol sales and homicide rates in Europe have shown that homicides occur more often in locations with evidence of heavy alcohol consumption (Bye 2008; Razvodovsky 2008). Moreover, international research also suggests that alcohol consumption not only increases the number of homicides, but that alcohol-related homicides differ significantly to non alcohol-related homicides. Pridmere and Eckhardt (2008) found that alcohol-related homicides in Russia were more likely to occur between strangers, on the weekend, at night and due to an acute argument. Shaw and his colleagues (2006) found that homicides in England and Wales were more likely to be alcohol related where an offender had a history of personality and/or mental disorder(s). Some evidence also suggests that alcohol consumption increases the likelihood of specific types of homicide, such as intimate partner homicide (Faran & O'Leary 2008; Roberts 2009). In the study by Faran and O'Leary (2008), they found alcohol had a small to moderate impact on violence by males towards their female partner and a small impact on intimate partner violence by females towards male partners.

In Australia, research examining the link between alcohol and homicide has been limited. This is partly because homicide in Australia is relatively rare (1.2 homicides per 100,000 population) and partly due to limitations inherent in standard law enforcement databases that prohibit extensive analysis of homicide cases. Since 2000, only three Australian studies have examined in any significant detail the relationship between alcohol and homicide. The first was conducted by Carcach and Conroy (2001), who examined differences between homicides which resulted from an alcohol-related altercation and those that did not. Using the AIC's National Homicide Monitoring Program's (NHMP) database, the authors found that 13 percent of Australian homicides between 1989 and 2000 were the result of an alcohol-related altercation. The second study conducted by Makkai and Payne (2003) examined the alcohol consumption patterns of Australian prisoners, including those imprisoned for homicide offences. Using a self-report survey, the study found that 22 percent of homicide offenders were addicted to alcohol and 44 percent were intoxicated at the time of their offence. Significantly, 21 percent reported that their alcohol addiction or intoxication was causally related to their offending. The third and most recent study was conducted by Darke and Duflou (2008) and examined 473 toxicological reports for homicide victims in New South Wales. They estimated that 42 percent of homicide victims had been drinking alcohol prior to their death and had a median blood alcohol content of 0.14g/100ml, which is nearly three times over the legal limit for driving in Australia.

The three studies contribute significantly to our understanding of alcohol's involvement in homicide, yet each have noteworthy limitations. Studies by both Makkai and Payne (2003) and Darke and Duflou (2008) examine only one part of the overall issue. Makkai and Payne (2003) focus only on the offender's alcohol consumption, while Darke and Duflou (2008) examine only the victim's alcohol consumption. Given the relatively high levels of dual consumption implicated in the general incidences of alcohol-related violence (AIHW 2008), it is necessary to consider both the offender and victim's alcohol consumption to provide an accurate picture of alcohol involvement. The primary measure used in the Carcach and Conroy (2001) study, although including all homicides irrespective of which party had consumed alcohol, was nevertheless restricted only to those incidents that the police recorded as having resulted from an alcohol-related altercation. As discussed later in this paper, this restriction has implications for the identification of the role of alcohol in homicide.

The present study looks to provide a meaningful extension of past research by defining alcohol-related homicides as those where:

- toxicological reports identified alcohol in the blood of the victim during the post-mortem toxicological analysis
- where the police indicated that the offender had been drinking (or was drunk) at the time of the incident.

Importantly, this includes those homicides where the data indicates that the victim or the offender had been drinking alcohol, irrespective of whether the police reported alcohol as the main motive for the offence. The aim of the study is twofold:

- to estimate the number of alcohol-related homicides in Australia between 2001 and 2006
- to identify victim, offender and incident characteristics linked to alcohol involvement that may be important for understanding (and possibly preventing) alcohol-related homicides in the future.

Current study

This study examines the 1,565 solved homicides recorded in the AIC's NHMP database for the six years between 1 July 2000 and 30 June 2006. The analysis excluded 212 unsolved homicides where an offender was not identified and/or where the characteristics of the incident were unknown.

Homicides are classified as alcohol related if:

- toxicological reports identified alcohol in the victim's blood stream during the post-mortem toxicological analysis
- the police indicated that the offender had been drinking (or was drunk) at the time of the incident.

The analysis is incident based, which means that multiple-victim or multiple-offender homicides are classified in this study as alcohol related if either party in the homicide had consumed alcohol.

In all, 729 homicides (47%) were classified as alcohol related. This is higher than the number of homicides previously classified as alcohol related using data from the NHMP database (13%; Carcach & Conroy 2001). It is also a slight increase over more recent estimates derived from the coronial toxicology reports of homicide victims in New South Wales (42%; Darke & Duflou 2008). Two main reasons explain this increase. First, the Carcach and Conroy (2001) study classified alcohol-related homicides as those resulting from an alcohol-related altercation. This is a subjective determination of motive made by the police that requires investigative evidence of alcohol consumption and most often, limited or no evidence of any other motive. Multiple-motive homicides, for example, get classified in the NHMP database according to the primary motive only. Therefore, many homicides involving alcohol consumption (including domestic-related and financial-related homicides) are not recorded as alcohol related because the NHMP records motive in hierarchical preference. Second, the Darke and Duflou (2008) study was not an epidemiological study of alcohol and homicide covering all of New South Wales. Instead, their study used coronial toxicology reports from victims identified by a single NSW mortuary as having died as a result of homicide. It did not include incidents investigated and prosecuted as a homicide where victim toxicology analysis was undertaken in another NSW mortuary. Further, the Darke and Duflou (2008) study does not count those homicides where the offender had been drinking alcohol but the victim had not. This makes the current study the most comprehensive examination of alcohol and homicide in Australia to date.

Of the 729 homicides classified as alcohol related, 438 (60%) involved alcohol consumption by the victim and the offender, 141 (19%) involved drinking by the victim only, while 150 (21%) homicide incidents involved drinking by the offender only. Of all homicides recorded between 1 July 2000 and 30 June 2006, 37 percent involved a victim who had been drinking and 38 percent involved an offender who had been drinking.

Incident characteristics

The NHMP database records detailed information about the characteristics of each homicide incident, including how the victim died, where they died, on what day and at what time. Each of these characteristics proved important for discriminating between alcohol and non alcohol-related homicides (Table 1). Specifically, homicides occurring between 6 pm and 12 am (56%) and 12 am and 6 am (57%) had the highest probability of alcohol involvement. Conversely, homicides occurring between 6 am and 12 pm had the lowest overall probability of alcohol involvement (20%).

Homicides occurring on a Saturday (60%) and Sunday (54%) had a significantly greater likelihood of alcohol involvement, while homicides occurring on Monday (34%), Tuesday (38%) and Wednesday (39%) were all significantly less likely to be alcohol related. Friday (49%) emerged as non-significant however, confounding this result is the fact that some incidents recorded for Friday night might actually have occurred in the early hours of Saturday morning.

In terms of location, homicides occurring at recreational venues were most likely to involve alcohol (80%). Other public spaces such as street/road (63%) and open areas (58%) were also statistically more likely to have been alcohol related, as were those homicides that occurred in a home that did not belong to the victim or the offender (61%). In contrast, homicides occurring in the victim's home were less likely to be alcohol related (37%), while those occurring in the offender's home were no more or less likely than other homicides on average to involve alcohol.

The nominated cause of death also showed a clear discrimination between alcohol and non alcohol-related homicides. Incidents

Table 1 Incident details in alcohol related homicides in Australia 2000–06

	Alcohol-related (n)	Non alcohol-related (n)	Alcohol-related (%)	Bivariate odds[a, b]
Day of incident				
Sunday	127	109	54	1.40*
Monday	66	131	34	0.54*
Tuesday	76	123	38	0.67*
Wednesday	77	123	39	0.68*
Thursday	95	109	47	1.00
Friday	132	135	49	1.15
Saturday	154	103	60	1.90*
Time of incident				
12 am – 6 am	239	179	57	1.79*
6 am – 12 pm	42	163	20	0.25*
12 pm – 6 pm	101	200	34	0.51*
6 pm – 12 am	329	254	56	1.88*
Unknown	18	40	31	0.50*
Location of incident				
Offender's home	72	65	53	1.30
Victim's home	269	463	37	0.47*
Other home	51	32	61	1.89*
Recreation	45	11	80	4.93*
Open area	88	63	58	1.68*
Car	26	40	39	0.74
Street	155	93	63	2.16*
Other	10	40	20	0.28*
Unknown	13	29	31	0.51*
Cause of death				
Gunshot	59	162	27	0.39*
Stab wound	285	260	52	1.42*
Beating	266	194	58	2.94*
Strangulation	41	103	28	0.48*
Other/unknown	72	99	42	0.81

a: Bivariate odds ratios indicate the odds that a homicide was classified as alcohol-related compared to the average of all other categories of that variable

b: Bivariate odds are calculated within the category of intimate-partner homicide only

*statistically significant at $p<0.05$

resulting from a gunshot wound, although uncommon, were less likely to be classified as alcohol related (27%). Similarly, only 28 percent of strangulation homicides took place in the context of alcohol consumption. Conversely, those homicides resulting from a beating (58%) or a stab wound (52%) were significantly more likely to be alcohol related.

Victim characteristics

Homicide incidents involving one or more female victims were generally less likely to involve alcohol (34%) than those involving males only (54%). This difference was statistically significant with incidents involving a male victim only being twice as likely to have involved alcohol than those involving a female victim(s).

Alcohol involvement was also found to vary depending on the victim's Indigenous status, their age and their employment status (where known). For example, 81 percent of homicides involving one or more Indigenous victims were categorised as alcohol related. This is compared to only 40 percent of those not involving an Indigenous victim. Combined, this indicates that homicides involving one or more Indigenous victims were six times more likely to have involved alcohol than those homicides not involving an Indigenous victim.

In terms of the victim's age, there were two age groups with the lowest probability of alcohol involvement: those homicides involving a victim under 18 years (26%) and those involving a victim aged over 60 years (31%). Comparatively, homicides involving victims aged between 18 and 29 years (54%) and 30 and 39 years (53%) were statistically more likely to have involved alcohol. These findings regarding the victim's age are comparable with those identified by Carcach and Conroy (2001), but incongruent with those presented by Darke and Duflou (2008) who found no statistically significant difference in the average age of those victims who had been drinking and those who had not. This analysis, however, reveals that when treated categorically, the age distribution of victims does vary between alcohol-related and non alcohol-related homicides.

Table 2 Victim and offender details in alcohol-related homicides in Australia 2000–06

	Alcohol-related (n)	Non alcohol-related (n)	Alcohol-related (%)	Bivariate odds[a, b]
Victim gender				
Male	526	448	54	2.03*
Female	203	388	34	1.00
Victim Indigenous status				
Indigenous	195	47	81	6.13*
Non-Indigenous	534	789	40	1.00
Victim age				
Under 18 years	47	134	26	0.36*
18–29 years	209	177	54	1.50*
30–39 years	202	178	53	1.42*
40–49 years	153	147	51	1.25
50–59 years	74	104	42	0.80
60+ years	44	96	31	0.45*
Victim employment status				
Unemployed	447	406	52	1.68*
Employed	215	280	43	0.83
Unknown	67	150	31	0.46*
Gender				
Male	618	698	47	1.00
Female	111	138	45	0.91
Offender Indigenous status				
Indigenous	224	70	76	1.00
Non-Indigenous	505	766	40	4.85*
Offender age				
Under 18 years	48	32	60	1.77*
18–29 years	273	304	47	1.05
30–39 years	236	239	50	1.20
40–49 years	122	154	44	0.89
50–59 years	40	66	38	0.68
60+ years	10	41	20	0.27
Offender employment status				
Unemployed	491	525	48	1.22
Employed	187	239	44	0.86
Unknown	51	72	41	0.80
Primary relationship between offender and victim				
Intimate	193	248	44	0.85
Male-on-female intimate[b]	119	213	36	0.57*
Female on male	63	23	73	3.34*
Indigenous on Indigenous[b]	84	13	87	13.93*
Mixed	10	7	59	1.88
Non-Indigenous on non-Indigenous	99	228	30	0.09*
Other-family	82	200	29	0.40*
Friends	314	259	55	1.69*
Stranger	140	129	52	1.30*

a: Bivariate odds ratios indicate the odds that a homicide was classified as alcohol-related compared to the average of all other categories of that variable

b: Bivariate odds are calculated within the category of intimate-partner homicide only

*statistically significant at $p<0.05$

Source: AIC NHMP 2000–06 [computer file]

Finally, where known, the victim's employment status appeared to be related to the involvement of alcohol. Homicides involving an unemployed victim (52%) were 1.7 times more likely to involve alcohol than those where the victim was employed (43%) or where their employment status was unknown (31%).

Offender characteristics

The current study also examined the offender's gender, age, Indigenous status and employment status. However, only an offender's Indigenous status and age were statistically related to alcohol-related homicide. Seventy-six percent of homicides

involving an Indigenous offender were classified as alcohol related (see Table 2). This compares to 40 percent of homicides not involving an Indigenous offender. The odds of alcohol involvement were, therefore, nearly five times higher for homicides involving an Indigenous offender. When analysed by age, homicides involving younger offenders were more likely to be classified as alcohol related, with the probability of alcohol involvement declining across age distribution as the age of the offender increased. For example, nearly two in every three homicides (60%) involving an offender under the age of 18 years was classified as alcohol related, compared to one in three homicides involving an offender aged between 59 and 60 years and one in five homicides involving an offender aged over 60 years.

Victim–offender relationship

Although information about the offender and the victim is useful to discriminate between alcohol and non alcohol-related homicides, the relationship between the victim and offender is also relevant. In the NHMP database, relationships are recorded between each unique pair of victim and offender in a homicide incident. For homicides where there is one victim and one offender, there is only one relationship. However, in situations where there are two victims and two offenders, there are four relationships recorded. Since this analysis examines alcohol-related homicide incidents and not unique offender/victim pairing, it was necessary to classify each homicide according to its primary relationship status. Here, the primary relationship was identified hierarchically in the following order: intimate partner, other-family, friend/acquaintance, stranger.

Overall, 44 percent of those homicides involving an intimate partner relationship were found to be alcohol related. This is slightly lower, but not significantly different, from the average of all other homicides (see Table 2). In comparison, homicides involving friends (55%) and those involving strangers (52%) were significantly more likely to have been categorised as alcohol related, while those involving an 'other-family' relationship were significantly less likely (29%) to have been categorised as alcohol related.

The results reported here regarding intimate-partner homicides are notable, primarily because previous Australian research by Carcach and Conroy (2001) found that these homicides were least likely to involve alcohol. Their previous finding was pertinent because it contradicted much anecdotal and even some empirical evidence, which pinpointed the important role played by alcohol in both domestic violence and domestic-related homicides (eg Darke & Duflou 2008; Faran & O'Leary 2008). In the present study, results indicate that alcohol is equally likely to be implicated as a proximal situational factor in intimate-partner homicides as it is in all other homicides combined.

To understand why this study arrives at a different conclusion, it is important to consider the different 'alcohol-related' classification methodologies used by the studies. Carcach and Conroy (2001) chose only those homicides reported by the police as resulting from an alcohol-related altercation to define as alcohol related. In the present study, the alcohol-related classification was made for any homicide where the victim or offender had been drinking in the hours preceding the incident. It should be noted that neither approach provides a perfect method for understanding the involvement of alcohol in homicide. However, given that police classification of motive is hierarchically determined, it is not unreasonable to assume that many homicides involving alcohol are not recorded as such by the police if another more serious motive is relevant to the incident. Homicides occurring between intimate partners, for example, are more often than not recorded by the police as domestic related, despite the fact that both the offender and victim may have been heavily intoxicated at the time of the incident.

Further analysis of intimate-partner homicides was conducted to determine whether the presence of alcohol varied depending on victim and offender type. This analysis was restricted to gender and racial pairings for victim and offenders. Significantly, the further analysis of intimate-partner homicide showed those homicides involving a male offender and a female victim (eg a husband killing his wife) were significantly less likely to have involved alcohol (36%) than those where the offender was a female and the victim was a male (73%). In all, female-on-male intimate-partner homicides were three times more likely to have been alcohol related compared to male-on-female intimate-partner homicides. By Indigenous status, 87 percent of intimate-partner homicides involving both an Indigenous offender and Indigenous victim were classified as alcohol related. This compares to 59 percent of homicides involving different races and 30 percent involving both non-Indigenous victims and non-Indigenous offenders. This means Indigenous on Indigenous homicide incidents were more than 13 times as likely to be classified as alcohol related than other intimate-partner homicides.

Discussion

The current study sought to extend the limited Australian research on alcohol-related homicide by employing a different measure of alcohol relatedness in order to examine incident, victim and offender characteristics respectively. The present study had the most comprehensive measure of alcohol-related homicide to date, utilising victim toxicology reports and police reports nationwide. Using this measure, 729 homicides were classified as alcohol related, representing 47 percent of all homicides recorded between 1 July 2000 and 30 June 2006. For the majority of these homicides (60%), both the victim and offender had been consuming alcohol. An analysis of victim and offender characteristics identified the following typology of homicides that are more likely to involve alcohol. These homicides involved male-only victims, one or more Indigenous victims and offenders, unemployed victims, younger offenders, and altercations between friends/acquaintances or those between strangers.

These general findings accord with those identified by Carcach and Conroy (2001). The replication of these results, despite the use of two different measures, emphasises

Jack Dearden is a research assistant at the Australian Institute of Criminology. Jason Payne is an analyst at the Australian Institute of Criminology.

General editor, *Trends & issues in crime and criminal justice* series: Dr Judy Putt, General Manager, Research, Australian Institute of Criminology

Note: *Trends & issues in crime and criminal justice* papers are peer reviewed

For a complete list and the full text of the papers in the *Trends & issues in crime and criminal justice* series, visit the AIC website at: http://www.aic.gov.au

ISSN 0817-8542 (Print)
1836-2206 (Online)

GPO Box 2944
Canberra ACT 2601, Australia
Tel: 02 6260 9200
Fax: 02 6260 9299

Disclaimer: This research paper does not necessarily reflect the policy position of the Australian Government

Project no. 0001
Ethics approval no. PO29
Dataset no. 0001

the stability of these factors as indicators of alcohol involvement in homicide.

In terms of incident characteristics, the location, time of day, day of the week and cause of death were all strongly associated with alcohol-related homicides. In particular, eight in every ten homicides which occur in recreational venues are classified as alcohol related. Consistent with the general findings of other research (Carcach & Conroy 2001; Darke & Duflou 2008; Pridmere & Eckhardt 2008), the current study found that homicides which occur on the weekends and in the evening are those most likely to involve a victim or offender who was drinking alcohol.

Additional analysis (not presented in this paper) used a number of multivariate models to predict alcohol involvement in homicide. These models again confirmed the importance of victim and offender characteristics, but also illustrated that as a combined set of factors, the incident characteristics were most useful in differentiating between alcohol and non alcohol-related homicides. This is an important finding for it is consistent with theoretical explanations of the alcohol–violence relationship that suggest situational and environmental factors play a major role in precipitating alcohol-related violence.

Finally, and perhaps the most interesting finding from the current study, was in relation to the role of alcohol in intimate-partner homicides. The current study replicated the results of Darke and Duflou (2008), finding 44 percent of intimate-partner homicides were alcohol related. Importantly, Carcach and Conroy (2001) found intimate-partner homicide to be statistically less likely to be related to alcohol consumption. However, the current study suggests this is not entirely the case. Incidents where a female was killed by a male were statistically less likely to be related to alcohol. However, homicides where a male victim was killed by a female intimate were highly likely to be related to alcohol consumption (73%). This contradicts international research on the correlation of alcohol to intimate-partner homicide, which found alcohol as having a minimal to moderate impact on males killing their female partner and a small impact on females killing their male partner (Faran & O'Leary 2008).

An even more detailed examination revealed the strong correlation between alcohol and Indigenous intimate-partner homicide. Eighty-seven percent of intimate partner homicides among the Indigenous population were alcohol related, making it the highest proportion alcohol-related homicide among any factor studied. These findings question, as well as build upon, existing understanding of the role of alcohol in homicide by providing a specific account of the impact of alcohol on homicides that do not conform to previously established correlates, namely, within the intimate-partner context.

References

URLs were correct at 9 June 2009

Adams K et al 2008. *Drug Use Monitoring in Australia: 2007 annual report on drug use among police detainees*. Research and public policy series no. 93. Canberra: Australian Institute of Criminology. http://www.aic.gov.au/publications/rpp/93/

Australian Institute of Health and Welfare (AIHW) 2008. *2007 National drug strategy household survey: first results*. Canberra: AIHW. http://www.aihw.gov.au/publications/index.cfm/title/10579

Bye E 2008. Alcohol and homicide in eastern Europe. *Homicide studies* 12(1): 7–26

Conroy C & Carcach R 2001. Alcohol and homicide: a routine activities analysis, in William P (ed), *Alcohol, young persons and violence*. Research and public policy series no. 35. Canberra: Australian Institute of Criminology. http://www.aic.gov.au/publications/rpp/35/paper9.html

Darke S & Duflou J 2008. Toxicology and circumstances of death of homicide victims in New South Wales 1996–2005. *Journal of forensic sciences* 53(2): 447–451

Dingwall G 2006. *Alcohol and crime*. Devon, UK: Willan Publishing

Felson B, Teasdale B & Burchfield KB 2008. The influence of being under the influence: alcohol effects on adolescent violence. *Journal of research in crime and delinquency* 45(2):119–141

Foran HM & O'Leary KD 2008. Alcohol and intimate partner violence: A meta-analytic review. *Clinical Psychology Review* 28(7) 1222–1234

Graham K, Wells S & West P 1997. A framework for applying explanations of alcohol-related aggression to naturally occurring aggressive behaviour. *Contemporary drug problems* 24: 625–666

Graham K & Homel R 2008. *Raising the bar: preventing aggression in and around bars, pubs and clubs*. Cullompton, UK: Willan Publishing

Griggs W et al 2007. *The impact of drugs on road crashes, assaults and other trauma: a prospective trauma toxicology study*. Payneham, SA: National Drug Law Enforcement Research Fund

Livingston M 2008. Alcohol outlet density and assault: a spatial analysis. *Addiction* 103(4): 619–628

Makkai T & Payne J 2003. Key findings from the drug use careers of offenders (DUCO) study. *Trends & issues in crime and criminal justice* no. 267. http://www.aic.gov.au/publications/tandi2/tandi267.html

Pridmere WA & Eckhardt K 2008. A comparison of victim, offender, and event characteristics of alcohol and non-alcohol-related homicides. *Journal of research in crime and delinquency* 45(3): 227–255

Razvodovsky YE 2008. Homicide and alcoholic psychosis in Belarus, 1970–2005 *Psychiatria Danubina* 20(1): 71–74

Roberts DW 2009. Intimate partner homicide: relationships to alcohol and firearms. *Journal of contemporary criminal justice* 25(1): 67–88

Shaw J et al 2006. The role of alcohol and drugs in homicides in England and Wales. *Addiction* 101: 1117–1124